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THE PACIFIC RURAL PRESS

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Milking Market-Milk Producers.

How One Branch of the Dairy Industry of California Is Trying to Beat the Monopolization Game by Co-operation.

[Written for Pacific Rural Press.]

IN NO branch of the dairy industry have conditions changed more radically, in recent years, than in the production and sale of market milk and cream. This is largely attributable to the increased population of our cities and better transportation facilities from distant points to these centers.

It was not so many years ago that the dairyman supplying milk to the city trade acted in the capacity of producer, wholesaler and distributor, but not so today. For instance, figures given out July 1, 1915, show that 80 per cent of the 37,216 gallons of milk and 1,380 gallons of cream sold daily in Los Angeles is delivered by 23 city plants, while approximately two-thirds of the 30,216 gallons of milk and 5,940 gallons of cream consumed in San Francisco is distributed by eight plants, there being 40 such concerns in San Francisco altogether. While perhaps not to such a marked degree, the same condition may be found in other cities of smaller size in the State.



City and State Laws Are Making Sanitary Barns Compulsory, Particularly on Market Milk Dairies.

While the distributing of milk has been largely concentrated into the hands of a few, the producing field has been greatly enlarged. Practically all of the sweet cream and some of the whole milk for the Los Angeles trade is secured in the southern part of the San Joaquin Valley, a rail distance of over 250 miles in many instances, and the field supplying San Francisco and adjoining cities now reaches over into both the San Joaquin and Sacramento Valleys, instead of being confined to the Bay counties, as before.

Another changed condition is the cost of production. This is particularly true in districts adjacent to the city markets, where increased population has greatly enhanced land values. This has caused an increase in rentals, and has been added to by increased cost of stock feeds, almost a 100 per cent gain in cow values in the past five years, a material increase in milkers' wages, and last, but not by any means least, an increased cost of production following the passage of new State and city laws.

With the above factors have come an expansion of the market and an increased retail price of milk; also a lessening of cost of city distribution by routing of the cities, making it possible for one vehicle to accomplish as much in a day as was previously done by five.

Theoretically, we might suppose that the new order of things was better than the old one for all concerned; the retail price has been raised at least 20 per cent and sometimes more in the last five years, and more efficient methods of distribution have been inaugurated, the systematizing of the business has closed up the leaks, and the growing populations have made it possible for a larger number of producers to dispose of their product at better prices than the creamery can pay.

How the Joker Jokes.—But when we analyze the situation carefully, we find a financial joker in the woodpile, which is not only working to the present disadvantage of the producer, but may limit future production, thus being a menace to producer and consumer alike. Like most woodpile cavities, having to do with foodstuff production and consumption, this one is shielding a burly middleman, before referred to as a "distributor."

To be brief with this gentleman, the situation is about this: he has, through co-operation with his capitalistic brother distributor, stopped up most of the leaks in the delivery of milk and cream by gradually eliminating competition, and this very process of "the survival of the fittest" has given him a position carrying strong dictatorial qualifications. The above figures for both San Francisco and Los Angeles show that he has done a pretty good a pretty good job at monopolization in the distributing end of the whole milk industry. If this monopolization did not affect the production or consumption of milk, producers would have no just complaint; in fact, they would doubtless thank him for lifting a disagreeable load from their shoulders, but no sooner did he get control of the market than he began to dictate to producer and consumer alike regarding the price of milk.

While getting the retail price to its present level, the producer was treated fairly well, but in the past three years the San Francisco firms have been gradually tightening up the string on the producer like this: In 1913 the contract price for milk in this market was 18 cents per gallon, f. o. b. San Francisco; in 1914 it was cut to a 17½ cent basis; and in 1915 large quantities were purchased at as low a rate as 12 cents per gallon, and the average price was approximately 16 cents. Though paid on a different basis, the producer

(Continued on Page 644.)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., December 28, 1915.

STATIONS	Rainfall Data: Past Week	Rainfall Data: Seasonal To Date	Rainfall Data: Normal To Date	Temperature Data: Max'm	Temperature Data: Min'm
Eureka	.36	11.99	16.12	58	34
Red Bluff	0	9.40	9.64	68	40
Sacramento	.02	5.18	6.81	60	36
San Francisco	.05	7.36	7.89	66	44
San Jose	.06	4.62	5.93	66	38
Fresno	.01	3.01	3.34	62	32
Independence	0	0.33	3.30	—	—
San Luis Obispo	0	3.86	5.47	80	36
Los Angeles	0	3.18	4.88	82	44
San Diego	0	2.20	2.96	76	44

THE WEEK

The weather continues glorious for work, for recreation and for the simple act of living. The rains are ahead of the normal in average places, the frosts are not fierce, ripe oranges have gone from early districts with unwonted zip, and the outlook is for a very broad and active winter trade in citrus fruits. Orchard planting is awakened by the recent advances in cured fruits and by the outlook for better prices still, for both fresh and cured fruits, through organization, and the increased purchasing power in consuming districts. Intending planters should secure their trees at once, for it looks as though there would be a very strong drive made on available supplies in the nurseries.

Taking all things together, it looks as though we were well started on an "old-fashioned California winter," a winter of warmth and wetness so interspersed that both plant and man could do their best in growth and the promotion of it by work. Just what an "old-fashioned California winter" is this writer does not know, for forty years ago the words were used to denote a thing to be devoutly desired, just as the words are used today. It is probably a localization of the old poet's epigram: "Man never is, but always to be, blessed." And yet, 1915 must be remembered as about as close an approximation to such blessedness as man is likely to realize. Fortunately, the Weather Bureau has measured it, in terms of the exposition, and we desire to place it upon record for future readers to measure by: The total number of rainless days during the fair was 244 out of 288, or eighty-five per cent. In June, July and August, when fog generally occurs in San Francisco, there were 81 clear days, 33 partly foggy and 9 foggy. In the dry season, May 17 to November 8, six months less nine days, the total rainfall was .07 inch, the entire period of rain about one hour. In the so-called rainy season February 20 to May 17, and November 8 to December 5, during the fair hours, 8 a. m. to 12 p. m., the record shows that rain fell on 28 days, and there were 84 rainless days.

But sunshine is only one of two great human measures of beatitude; the other is multitude. This is probably the sublimation of the great "social instinct" of mankind which ethnologists discourse upon. Fortunately we have also a measure of that to place upon record for future use: "I have never experienced anything like those days in California," said Thomas A. Edison to a recent visitor at the East. "I can't realize that there are people in the world like the people of San Francisco. I never saw so many people together and I never experienced so much human interest and such an appreciation." And, after discussing other subjects, he would come back repeatedly to the exclamation: "But those people in San Francisco—and so many of them!"

Sunshine and multitude—they are the record and the prophecy for California!

The Unhappy Shoemaker.

Well, we have had some holiday sunshine, because for two weeks we have been sitting so high on the bank that our critics could not drive over us. That is one of the editor's great prerogatives: he can shunt objectors into the wastebasket, and, so far as his constituency goes, he can bathe himself uninterruptedly in the sunshine of appreciation, and, perhaps, he is a foolish editor who does not make himself great by so doing. But our conscience reminds us that we agreed to give right of way over our prostrate form to all vehicles of criticism — providing, of course, that the drivers ante up a dollar a year to the publisher, for we are no highway for road-agents or hoboes. And here comes one, having met the conditions, and must have his say:

In your editorial note, "Modern Shoemakers Not Cobblers," in the issue of December 11, you talk through your hat. You should get the facts before you talk of some other man's business. The nice machinery which you say the modern shoe-maker has—over one-half of it belongs to the United Shoe Machinery trust of Boston. We lease it from the trust, paying in the neighborhood of $700 for the use of a stitcher, sand-paper machine and finishing machine; a royalty of $5 each month for use of stitcher; then, besides, there is a nice little meter, which registers every stitch made by the machine, for which you pay so much per 1000 stitches, after paying $700 and $5 royalty monthly. If you wish to move the machinery you must notify the trust, which has your $700. The meat trust gets at the shoemakers in the way of sole leather, which sold for $2 per dozen squares or blocks five years ago, and sells for $2.85 now. Linen thread, which sold for $1.10 per lb., sells for $1.55 a pound now. Buttons, button-fasteners, nails and everything the shoemaker uses has gone up, some 50 per cent and others more. The old cobbler got $1.25 and $1.50 for half-soles; now we get $1, and have to argue to convince the people that they are not being robbed.

It would, of course, be unkind to dispute with you after inviting you to speak your mind freely, but, if we could bring ourselves to it, we should say that you have made about as good an argument in favor of the trusts as there is to be made. You have shown how the many different inventors who have contributed modern devices to shoe-making and repairing get their pay; how the machine-makers and leather-makers get their profits, and how the public saves from one-fifth to one-third the money it formerly paid for new soles. And that, if we mistake not, is all that the trusts ever claimed to establish their righteousness. You have taught us more than we ever dreamed of knowing about machine shoe-repairing, for we never did anything but see the wheels go round and pay the money. But you have omitted the only thing which is of any importance in the discussion, viz.: you do not say whether you can now get more or less for an hour's or a day's work, with these efficient helps, than you could with hand-awl, thread and wax. We do not know anything about that, but your kind of artists seems to us more prosperous and to be occupying a higher social position than formerly—and that is all we said in writing about it previously. If you are really being squeezed between cruel trusts and a miserly public, why did you not yell about that?

A City View of Farmers.

Our critics are very prolific of suggestions as to how we should handle our constituents, so that they can be made better from the farm-loan point of view, and therefore receive fairer consideration from financiers making such loans. One such reader toots at us, as he goes over, these words:

You can render the greatest service to your farmer readers by inducing them to increase their own efficiency. For instance, the farmer is a notoriously slow-paying borrower. He hardly ever pays his interest or principal on time, and thinks that because he has security he can let the matter run as long as he likes. Again, the average farmer is careless with his tools and implements, leaving them in the rain and sun, scarcely ever giving them a coat of paint, and allowing them to deteriorate on his hands much more rapidly than does ordinary machinery used in commercial business. Again, in the matter of soil depletion: how many farmers are intelligently conserving the fertility of their soil? How many farmers can even name to you the four principal elements of plant food contained in the soil, let alone naming the other six of the leading ten, and if a farmer does not know what chemicals his soil contains, how can he know how to maintain the fertility of that soil? The soil is the farmer's source of supply, from which he must pay his principal and interest, and if he wastes this source he will never be able to pay his debt.

There is, of course, certain truth in this claim, but it contains much which is wrong in its inferences. The farmer dealing with natural agencies and forces needs more science than is required in many other occupations, and he knows it and is getting it very fast; but there is practical learning which comes from correct observation and correct deductions from experience quite apart from the teachings of the schools in the particular line which our critic so strongly emphasizes. For example, the men who established the types of the best breeds of animals we now have, knew nothing of science, and yet Darwin drew very much of his science from their achievements. As between the two we would prefer to lend money to a farmer who really knew an ox than oxygen, or a plant than phosphoric acid, etc. And, of course, if a man fully knows an ox or a plant in operation he is really a more scientific farmer than a man who only has a skull-full of symbols and formulas. Our critic is away off in his requirement of chemistry as indispensable, desirable as it is. It is a serious error to set up any particular scientific dictum as a measure of farming success, because you

can find so many instances against your standard. This is because successful farming is a great deal more than the "science of farming," popularly so-called. It was of successful farming that the Dutchman once said: "Te more vot a man knows te more he finds, by grashus out." And no one knows that better than the farmers of the present day, and no class of our population is doing more to understand its business, and to do it better, than the farmer. As a class, farmers do not need to be exhorted along the lines our critic cites; they are already onto such things and as a class are going faster and farther than men in other occupations. Take for instance, the statement of Miss Brownson, county librarian of Butte county; it makes argument unnecessary. Miss Brownson is credited with these words concerning the kinds of books she has to supply to different classes of readers: "Farmers are more interested in technical discussions of farm problems than business men are interested in discussion of efficiency management and methods. The demand from branch libraries in cities and towns is almost exclusively for fiction, while the rural communities want weightier reading. The demand among business men for books and articles of a technical character dealing with their business is practically nothing, while there is a big demand for such information from farmers."

But we will admit that the farmers as a class do not fully understand the point which our critic makes of the desirability of prompt payment of financial obligations, but he is not altogether to blame for that. Much of his slowness is due to the nature of his business, to his own postponed receipts, to the fact that he is master of no sales as the merchant is, and that he is too often powerless to realize upon the value he has created.

Banks with an Agricultural Point of View.

This slow-payment of obligations on the part of farmers is in large part beyond correction, and must be provided for in the point of view in the institutions financing his operations. This has long been successfully done in other countries; in fact, the United States is, perhaps, the only country which is attempting to finance farmers directly through commercial banks; elsewhere, though commercial banks lend largely for agricultural use of capital, they do it not directly, but through other banks which are separately organized for it. It is too soon to declare that such policy must prevail in this country, but public opinion seems to be strongly tending that way. It is now announced from Washington that the joint-committee on rural credit of Senate and House will report next week a bill providing for a "land bank board" of five members to supervise and control the operation of regional banks. The country would be divided into twelve districts, each with a regional land bank having a capital stock of $500,000, to be issued in $10 shares for purchase by the public. Any such stock not taken within 90 days will be subscribed by the Federal Government. Business would be done directly between the regional banks and the local bodies which farmers would be authorized to organize in the form of co-operative stock banks, charters for which would be passed on by the land bank board. Applications for loans approved by the local organizations would be recommended to the regional bank of the district. The banks would be authorized to loan out capital stock or to sell bonds to obtain sufficient funds to make the loans and the farmers would be charged as interest, the interest on the bonds plus one per cent. To reduce the rate of interest on the bonds the bill will provide they must be acceptable by the banks as security for the deposit of public funds. This is, of course, a bare outline of the system, but it will suffice to indicate that the present Congress will have opportunity to do something with rural credit, and what it will do must be awaited.

Queries and Replies.

Querists must give name and address.

Starting for a Good Prune Tree.

To the Editor: As I am new at the business I wish your advice on how the French prune should be pruned. I planted them last April and they made a big growth. Some of the limbs are six and eight feet long. I want to start them out right, for I have ten acres of them.—Subscriber, Los Molinos.

Select three or four branches which start out at different places on the stem, if possible, and point in directions to make a well-balanced tree. Cut these back so as to leave them a foot to a foot and a half long, and remove all others at their starting points. This will start your tree, strong and low-branching, without too many main branches to be sawed out later. With such an important enterprise on hand you should read carefully our book, "California Fruits," which gives reasons and details of such operations.

The Peach-Almond Root.

To the Editor: What is your opinion of the value of peach-almond root as a stock for the prune or apricot?—Subscriber, Hollister.

The peach-almond was first proposed as a stock (and probably used to some extent) at least forty years ago. It was first probably a chance hybrid and was later intentionally produced again by Mr. Burbank in his crossing work and introduced formally by him, if we remember correctly. In spite of its long life in public knowledge we are not aware that superiority to seedlings of either almond and peach has ever been demonstrated by comparative test, nor do we know of large propagators who have substituted it for uncrossed seedlings of these fruits. If any reader has reached clear comparative judgment on the matter we would like to know it.

Almond Shotholes.

To the Editor: I sprayed in November using lime and sulphur and will spray again before the buds open. But I have been told that there are two kinds of shothole affecting almonds. I do not know the difference and should they be treated differently? Is rust destructive to almonds and how detected?—S. T. R., San Benito.

There are two fungi which shothole the almond. One is the same which causes "peach blight" and is apt to work on the bark of the twigs in the winter: the other is commonly called "almond shothole" and does its chief work on the leaves in the summer. You will be doing all you can for both of them by your fall and spring use of lime-sulphur. If you have a leaf attack late in the summer a weak Bordeaux or more dilute lime sulphur can be used, but the chances are that you will not need to give summer treatment. We do not know what "rust" is unless it is the roughing by the red spider and that you can check by sulphuring as soon as you notice it beginning to appear.

Does Hungarian Need Pollenizing?

To the Editor: I have Hungarian trees about 14 years old, and they have never borne to amount to anything—fine, healthy looking trees, too, blooming heavily every year. The plums form and when partly grown drop off. Is there a way through grafting or budding, to make them bear? They have always been thoroughly cultivated, and irrigated since they were three years old. Can I graft part of the trees to some variety that will make the balance bear? If so, what variety of plum is the best for that?—Old Subscriber, Penryn.

The old Hungarian has a reputation for being variable in bearing under different conditions, but our observation covers no such case as yours. Our experience has been in overbearing and considerable breaking of the brittle branches. We have to refer your question to our plum-growing readers.

Vine-Stumps and Vine-Hoppers.

To the Editor: I have a 12-year-old Malaga vineyard. I have pruned it, but find an accumulation of many years' old bark on the vines. This is a great place for harboring insects. I would like to take all this off if it would not be harmful to the vines; also what spray or wash to use on the trunks. Vine-hoppers were bad last year. I have removed all prunings and the ground is clean with a clover cover crop sown.—R. H. P., Coachella.

It will do no harm to remove the old bark which is largely loose and will scale off easily. A good spraying with winter Bordeaux will be best to use on the cleaned stumps. The vine-hoppers will probably be very busy on your cover crop until the vine leaves appear. If you find them on the clover, it should be thoroughly plowed under and covered well a month before the vines start.

Prunes on Almond Seedlings.

To the Editor: I have some young nursery trees; they are bitter almond root. I budded them in September and some of them did not stick. I am thinking of working over the ones that did not stick into imperial prunes, and I would like to know just how you would do it. Would you graft them in the nursery row and then plant out this spring, or would you plant out now and then graft? What kind of a graft would you use, and how much above the ground would you graft?—F. E. P., Guinda.

We should graft in the nursery row, not after planting in orchard. We should whip-graft the smaller and cleft-graft the larger seedlings—in both cases working as near the ground as possible. The seedlings should be transplanted or cut under to cause new root growth near the stem.

Peas for Spring Silage.

To the Editor: Can you give me information as to the advisability of planting Canada field peas along with barley with a view to making a silage crop for next spring?—O. L. L., Modesto.

We should plant in your light loam as soon as we could get the ground ready—it would be better to have planted a month ago. Both these plants are hardy against valley frosts and should be ready to take advantage of all the rains.

BIG SEED COMPANY IS DISTRIBUTING NEW CATALOG

Also Book Containing Valuable Garden and Field Information.

One of the largest seed houses in the West, the Aggeler & Musser Seed Co., of Sixth and Alameda Streets, Los Angeles, have just received the first edition of their new 1916 catalogue from the printer, and are beginning the distribution of the same. This is their 23rd annual catalogue and it surpasses all previous editions. It is said to be one of the most complete seed books published and contains answers to more than 1000 questions. It gives information regarding every kind and variety of plant grown in the Southwest, and is fully illustrated. Not only does it tell all about seeds, but gives full data concerning the correct tools and implements agriculturists should use in order to obtain the best results. Valuable hints on poultry, spraying and use of insecticides are also given.

In addition the distributors have issued a hand booklet entitled "The Garden Manual." It gives good, practical answers to questions which gardeners and ranchers have asked from time to time.

The Aggeler & Musser Seed Co. will gladly send their catalogue free and postpaid to anyone writing and requesting it.

WALNUTS FOR PROFIT



Young Franquette, showing vigorous and shapely growth.

We are growers of the Walnut from the utility standpoint. In our orchard at Morgan Hill, Santa Clara county, we have thoroughly demonstrated its utility and profitableness.

WE ARE OFFERING THIS SEASON extra fine stock from scions cut from our own bearing trees.

IF INTERESTED we invite you to inspect both our bearing trees and nursery stock, or write us for further particulars.

RUEHL-WHEELER NURSERY

1635 MARKET STREET, SAN JOSE.

Bartlett Pear

On Blight-Resistant Roots

There never was a more favorable time for Pear planting, but be sure your trees are planted on Japanese Roots. We have given this root a through test for over five years, and discarded all others in its favor.

All our trees are propagated from trees selected for their bearing qualities and grown in the granite soil in the foothills of the Sierra Nevadas, assuring a fibrous root system second to none in California.

Write for catalogue and full list of trees.

UNITED FRUIT COMPANY

Shippers, Orchardists, Nurserymen.

Newcastle, California.

Root-Knot from the Pit.

[Written for Pacific Rural Press by C. F. Collins, Horticultural Commissioner, Tulare County.]

In the Rural Press of Dec. 18th an Esparto reader asks if a tree will inherit root-knot, or crown gall, from a pit taken from an infected tree.

Perhaps the following extract from a paper written by me and read at the State Fruit Growers' Convention in San Jose in Dec., 1913, relating my experience in that line some three or four years previous will be of interest:

"Probably few orchards in this State are free from the bacterial disease known as crown gall, or root-knot, for which no control is yet known. It is often the cause of considerable loss in the nurseries, and, no doubt, renders thousands of trees unprofitable in the orchards of California. Much of this trouble may be eliminated by selecting seed for nursery stock from vigorous trees known to be free from crown gall, as seed from diseased trees will produce crown gall stock. As an example, I will relate a little personal experience: For several years I grew a small quantity of peach stock each season, using seed from a nearby vigorous Salway orchard and obtained fully 90 per cent of clean stock. One season I could not get the required amount from this orchard so purchased some from another Salway orchard in the neighborhood, keeping the seed separate and planting side by side in the nursery. The last lot of seed produced 90 per cent of crown gall stock. The first lot 90 per cent of clean stock. Part of the affected lot was budded to Elbertas, and, as I needed a few of this variety to square up an orchard, I selected from this lot 121 of as clean, vigorous and healthy looking June buds from sixteen to twenty inches high as any one could wish for and planted. That season all but a dozen of them made an excellent growth. The following spring two or three did not start and several more looked feeble. I impressed the "long-back" shovel into service, beginning with the dead ones and continued up one row and down another until the whole 121 trees were uprooted and 120 of them showed plain evidence of crown gall. Three years later the orchard from which I obtained the infected pits was uprooted at the age of fourteen years and nearly every tree was affected."

[Although this does not amount to an absolute demonstration, the lesson clearly is to get pits from trees free from root knot.—Editors.]

SAVE TWO YEARS IN RAISING OLIVE SEEDLINGS.

Nearly two years may be saved in the growing of olive seedlings by the use of improved methods, announces the University of California. The most important of these methods is the clipping off of a piece of the pointed end of the woody pit by means of a special "clipper" devised by the Division of Viticulture. With this clipper 1500 seeds can be clipped per hour.

The clipped seeds germinate within a few weeks. If the seedlings are given proper care they will be ready to graft by the time untreated seeds have commenced to germinate. The growth of the seedlings from clipped seed is as vigorous, if not more so, than that of seedlings from seed which has been stratified in sand for sixteen months in the ordinary way.

It is generally recognized that grafted seedlings make the best trees. They have been little used, owing to the time wasted and the difficulties encountered in the old methods. By the improved methods, grafted seedlings are more easily raised than cuttings and a bearing tree produced almost if not quite as quickly.

STUB-PRUNED TREE BREAKS.

[Written for Pacific Rural Press.]

For some reason, one branch of a triple-forked prune tree in C. H. Pachett's orchard in Sonoma county died and was cut off, square with its own axis. Another vigorous shoot started from the stub several inches below the cut; and after a few years became a vigorous fruit bearing branch. As it grew, it extended a growth of healthy green healing tissue farther and farther around the old stub, which did not seem to be rotting. Last summer, before the healing tissue had surrounded the stub to its top, the new branch had a heavy crop and the tree is again mutilated. Weight of fruit and perhaps a wind tore loose the ¾ inch growth of new wood from around the stub. Mr. Pachett is not alone in loss due to the same cause—leaving stubs in pruning.

PRUNES OUT LEMON SUCKERS IN FEBRUARY.

[Written for Pacific Rural Press.]

The best time to prune Eureka lemons in the San Fernando district is when the pruning shears are sharp, and this is all the time, according to H. E. Wilkinson. But if other work presses, it is best early in the spring—February if possible. This lemon grower pruned a year ago last winter and spring and got the biggest crop ever from his 27-year-old trees. Last March he was expecting at least ten boxes per tree for the year ending in September. Mr. Wilkinson prefers to keep his Eurekas open, taking out all suckers, and building the tree from fruit wood. He doesn't stub the suckers, as many do, to fill out the tree; but always gets rid of them with a clean, close cut. "When you begin to stub the suckers, you will have to keep your pruning shears busy all the time—you have gotten into a peck of trouble. So many suckers will be sent out that it will be a suckerous tree."

POMELOS RIPEN ON TREE.

Pomelos should be left on the trees until February to June according to E. O. Giddings of Tulare county. That makes them jucier, sweeter, nicer flavored, and less bitter than if picked about Christmas. He treats his trees about like orange trees, of which he has several varieties. He notes that pomelos will stand less frost than oranges.

When you buy fertilizers, buy the kind that has the most plant food value.

Gold Bear fertilizers have plant food value, because they are made from products recognized by agriculturalists, to contain the necessary elements that feed the crop. There is a book of fertilizers we would like to send you. Write for it.

PURE ANIMAL MATTER AMMONIATES

GOLD BEAR TRADE MARK FERTILIZERS

FOR CALIFORNIA SOILS

WESTERN MEAT COMPANY

704 Townsend St. San Francisco

Inspect and Treat Roots.

[Written for Pacific Rural Press.]

A bug on the root of your nursery tree may spell failure of the tree and the orchard after you have spent a lot of money bringing it to bearing age. More unthrifty trees are suffering this way than are dreamt of in most philosophies.

The bug may be a microbe, the kind that causes crown gall. We saw a magnificent orchard last spring with great gaps, where big trees had just been taken out dead with crown gall. You don't want to plant a tree with that on it. Reliable nurseries have every tree inspected before shipment, but sometimes men who do the work are ignorant or careless. Horticultural commissioners cannot be omnipresent. And it is pretty hard to distinguish crown gall from the callous that may grow naturally at the graft union. Both are usually located at the crown of the tree.

Root knot has a similar appearance, but is due to miniature worms which irritate the roots, usually at a considerable distance from the crown, and cause them to enlarge into ugly knots. These may be cut off and the tree used with reasonable safety.

Dip Roots for Aphis.—On pear and apple roots, the bug may be the woolly aphis. It will be one of the hardest of orchard troubles to combat after planting, but may be easily killed by washing dirt off and dipping the roots in a mixture of blackleaf 40, 1 pint per 200 gallons of water. A gallon of liquid cresol soap mixed into the dip may help. It is a good insurance to dip all roots of these trees except perhaps when apples are on Northern Spy roots.

On all peach roots, the black peach aphis may be waiting for a chance to infect new orchard plantings of almonds, plums, prunes, etc. This is controlled as above.

CITRUS FRUIT GROWERS' CONVENTION FEBRUARY 18 AND 19 AT SAN BERNARDINO.

The next State Fruit Growers' Convention will be held at San Bernardino in connection with the National Orange Show according to announcement by State Horticultural Commissioner A. J. Cook. The orange discussion will be led by C. C. Chapman, who will speak especially of the possible value of a "brand." The discussion of the lemon will be in charge of C. C. Teague. A. D. Shamel will speak of the pomelo Marketing will be discussed by our new Commissioner of Marketing, Harris Weinstock. G. Harold Powell will speak on the problems of the citrus industry. The citrus outlook of Butte, Sacramento, and Tulare counties will be presented by Fred Mason, W. W. Hinsey, and H. Webster, respectively. Soils and soil fertility will be discussed by the Messrs. H. J. Webber, I. G. McBeth and W. P. Kelley from the Riverside Experiment Station. The 8 to 1 orange test will be explained. Professor H. J. Quayle will give the latest on fighting scale insects. E. O. Essig and H. C. Bryant will give lantern talks on insects and birds, respectively. Col. Weinstock will repeat the address which he gave at Visalia, which elicited great praise.

A one-day apple meeting will be conducted by Chief Deputy Commissioner G. P. Weldon on Saturday, February 19.

CLEARS PRUNINGS QUICKLY.

[Written for Pacific Rural Press.]

It didn't take two men very long to clear out the prunings from C. E. Jackson's prune orchard in Santa Clara valley this fall. The prunings were thrown from two rows into one windrow handy for a horse rake. Ten acres were cleared in two hours one afternoon, dumping the prunings outside the orchard where they could be burned without damage to trees.

The rake is made by bolting nine pointed 2x3 sticks underneath and crosswise of a 6x6 timber 11 feet long. These "teeth" project 3½ feet in front of the timber and about 8 inches behind. They are braced into place by laying a 1x6 flatwise across them just along and in front of the 3x6. A strap iron reaches from each tooth across this to the 3x6 and is bolted to hold the teeth rigidly.

Two plow handles are braced by strap irons and rods running to the front side of the 3x6, to the back ends of teeth, and toward the ends of the 3x6.

The rake is pulled by a horse hitched by a 10 foot chain to each end of the 3x6. It slides along the ground gathering all the brush until loaded, when it swings over into a row already cleared and proceeds to the edge of the orchard. There it is dumped by simply lifting a little on the handles as the horses proceed.

In parts of the orchard, the brush from 6 trees' distance made a load; in other parts, as much as 28 trees' distance.

ASPHALT FOR PEACH BORERS.

[Written for Pacific Rural Press by W. D. Guthrie.]

In applying asphaltum to prevent peach borers on stone-fruit trees, Prof. Howard Dickson of the Kerman High School found by several experiments that February, while weather is cool, is the most effective time. Later than that, the weather proved too warm to harden the asphaltum. The result was that the oil soaked into the trees and killed many of them.

[Santa Clara County Horticultural Commissioner Earl Morris recommends grades C or D of hard asphaltum to be applied boiling hot with a brush to the crown of the tree from above the surface to six inches below. This is simply a protection. Borers already in the tree should be dug out with a flexible wire.

Hardened asphaltum well applied would stop their depredations next spring anyway, by preventing emergence of the moths which lay their eggs outside. But digging the worms spring and fall saves a lot of damage.]

A little bug may become a million.

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Wind-Proof Wax Pot.

"Sometime ago we noticed you were wanting information in regard to a wind-proof wax pot for grafting, and as I solved this problem two or three years ago, I submit the following," writes Ogden Bolton, Jr., of Santa Rosa.

"The furnace is a charcoal burning pot with dampers similar to a stove both in front and on top of the short chimney. The heat is thus regulated to perfection; and the more wind there is the better it burns, though it burns all right if there is no wind.

"I use broken corn cobs with kerosene to start the fire, and then apply charcoal in pieces the size of walnuts or smaller. The furnace is eight inches in diameter and twelve inches high, not counting legs or handle; and may be made out of an old blasting powder can. The pot is set into a hole in the cover and holds about two pounds of wax. I use wire across the wax pot to hang the brush up in the wax so that it won't touch the bottom of the pot. About three inches above the bottom of the furnace is a box three or four inches square to hold the charcoal when burning. The charcoal is inserted through the door in front. The bottom of the box is grated so that the draft from the smaller door, 1¾ inches in diameter, just under the charcoal-burning box, will go through the coals. The grate is made of twenty penny nails riveted into flat end pieces just large enough to fit into the box which is one inch high in front, and two inches high behind to keep the charcoal from falling out. It is held up behind by a plate with legs on it which reach to the bottom of the furnace. The charcoal needs no forced draft. As long as there is a live coal as large as a pea, fresh charcoal put in with the draft doors open will soon be all aglow. I always stir up the coals before putting on fresh charcoal so as to shake down the dead ashes. Extra charcoal, enough for a half day's work, is carried in a three-quart tin can attached to one side of the furnace.

AUCTION DRIED FRUIT.

The following message was recently sent to Governor Johnson by State Market Director Harris Weinstock, who is just returning from investigation of Eastern markets:

"Investigation develops that only a limited number of eastern jobbing houses buy California dried peaches for future delivery, thus minimizing the price received by the grower. If all the dealers could be afforded an opportunity to bid on dried peaches the price to the grower would be materially increased, therefore, believe that the system of selling at public auction in eastern markets would make it possible for a dealer to supply his needs in New York on trade terms where now he has to go to the few jobbers who can contract ahead of time by reason of their large capital to pay for their purchases and thus absorb the profit which should go to the grower.

"My investigations to date show that only the middle class consumers are using California dried peaches. Few, if any of the wealthier people, and owing to excessive retail prices, scarcely any of the great masses living in the tenement districts of the great cities know anything about California dried peaches or apricots.

"Sales at public auction will bring better prices to the grower and enlarge the volume of distribution, and this, together with a campaign of publicity educating the consumer, will lead to very greatly increased consumption. With California dried fruit products, graded, standardized and labeled by the state, the product would at once command the confidence of the auction buyers and insure to growers compensatory prices and widest output."



NATURAL SIZE.

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The earliest heavy bearer. Write for Circular.

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EARLY PRUNING FAVORS APRICOT BROWN RUST.

Pruning of apricot trees where rust is prevalent should be delayed until late fall or winter, when a new growth will not result.

"The brown rust of stone fruits is widely distributed," says Professor J. T. Barrett of the Citrus Experiment Station at Riverside. "It occurs to more or less extent in every section where peaches, plums, apricots, cherries, and almonds are commercially grown.

"During the seasons of 1914 and 1915 the attacks of this fungus have been particularly severe in Southern California on apricots and peaches. The early defoliation of the trees, which in the case of apricots has been complete in certain groves this season, must necessarily affect next year's crop by not allowing the fruit wood to mature properly.

"Brown rust attacks the foliage, producing on the upper surface small yellowish spots and on the under surface corresponding rusty-brown powdery patches. The spores are produced in these rusty-brown pustules and are frequently so numerous as to give a rusty-brown appearance to the under surface of the leaves.

"A more direct loss this year is the loss of much apricot fruit owing to very early infection of the trees by the rust fungus. This early attack is now believed to be the direct result of too early pruning of the trees, this forcing out a late growth of shoots and foliage. The leaves remain on the trees over winter and until the new spring growth starts, thus harboring the fungus in a more or less active condition and making possible a very early infection of the new spring foliage. Otherwise severe infections come after the fruit has been harvested."



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Our Treeless School Yards.

By John Vallance, Oakland.

Have you when traveling over our beautiful State noticed the yards around the schools? Have you noted that so many of them are treeless—not a tree or plant to be seen? You no doubt have perceived this, but did not give any further thought to the subject. I am afraid that most of us have gone no further.

Well, let us now take this matter up and consider what these dear wee boys and girls must suffer—yes, suffer!—when they have to sit in these sweat-boxes for five hours a day trying to learn their lessons.

Picture in your mind one of those unsightly buildings standing in a hot valley, the sun pouring into the windows at all times of the day, with not a particle of shade! Do you think those children can concentrate their thoughts upon their studies under such conditions? Do you think we are going to get the best out of them? Do you think it is right to subject them to such a condition of affairs through our neglect? Do you think the children will have happy recollections of their school days under such conditions?

Picture the opposite of this scene: Trees, plants and flowers around the schoolhouses; the pepper tree, a lovely evergreen that delights in our warm valley climates; the acacias, brought from their Australian home; our own beautiful redwood, cypress and pines, and the casuarina and eucalyptus, natives of the antipodes! All these evergreen trees will, if planted, soon transfer our treeless school yards into veritable shade spots. Or you can plant the catalpa, black walnut, the elm, tht locust, the maple, the Texas umbrella, and the poplar—all good deciduous trees, and which will soon afford what so many school yards so sadly lack—**shade!**

Besides these, the children themselves can plant annuals, such as mignonette, verbenas, asters, pansies, daisies, gaillardia, cosmos, coreopsis, foxglove, larkspur, marigold, nasturtium, and many others.

View this picture against the other: Here the little ones, sitting at their desks, see these beautiful flowers and trees. They can smell the fragrance of the mignonette; they can hear the birds singing and twittering in the trees. Such scenes will make them happy, will sweeten their young lives, and will in after years return to them to help them through life.

I remember when I went to school that near the schoolhouse there was a plantation of large trees; at recess I would wander over there and sit at the foot of some lofty forest giant; my thoughts would wander to tropical forests of the Amazon, or the Platte, and my desire was to visit these scenes—and I did so. I can never forget the effect those trees had on me; it is a green spot in my memory even to this day. Therefore, having so great an opportunity, let us not neglect it.

WATERPROOFING TENTING.

To the Editor: How can I waterproof 16 oz. tenting material? Have put on a coat of linseed oil, but it doesn't dry. Is there anything that will dry it without making it too siff?—D. F. C., Lemoore.

[One cupful lampblack, ½ cup graphite, one gallon boiled linseed oil gives the oil a body so that it does not soak in so much but remains pliable and dries in about one day, according to the W. A. Plummer Mfg. Co. who makes tents, etc., in San Francisco. They do not use driers in the waterproofing because driers tend to make the tents crack. —Editors.]

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When you buy fertilizer remember you are buying what is *in* the goods and not merely a weight of two thousand pounds.

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Mechanical Power on the Farm.

[Written for Pacific Rural Press.]

PUMPING WATER FOR RICE.

[By Yuba County Horticultural Commissioner G. W. Harney.]

In the three principal rice growing states—Louisiana, Texas and Arkansas—all but a little over two per cent of the rice lands are supplied with irrigation water by pumping from wells.

For prairie lands the machinery is generally designed to provide seven and one-half gallons or one cubic foot of water per minute for each acre irrigated. The water is elevated fifteen to eighty feet. It is not good policy to estimate too closely in designing a plant. Some now operating in the above mentioned states are capable of delivering much more water than needed.

The development of wells has permitted the irrigation of much land that otherwise would not be planted to rice. Wells capable of supplying water for rice irrigation can be sunk in nearly all parts of the rice country and water is pumped from the sand gravel beds. Petroleum, gasoline and kerosene engines are used for pumping and in some districts where coal and wood are cheap such fuel is used. Electric power is not available.

In some of the districts, water is pumped from streams which is slightly less expensive than pumping from wells

The possibilities of rice culture in Yuba county have not been touched as yet. Water can be obtained in wells in Yuba county at depths of twenty to sixty-five feet in great abundance with cheap fuel oil for engines or cheap electric power for motors available.

So far there is but one tract in Yuba county planted to rice that is being irrigated by pumping. This experiment is being conducted by John Morrison at Ostrom station, where the water is being pumped from a sixty-five-foot well by electric power. If the experiment proves a success the rice fields will be greatly extended next year in the Ostrom section of Yuba county.

For rice culture a limited amount of water only is required. Where water is supplied from gravity ditches as in the Biggs section and the present rice fields of Yuba county, the tendency is to use too much water, which encourages the growth of weeds and pests and wastes half of the water supply.

Rice can undoubtedly be grown in Yuba county profitably by pumping the water for the required irrigation. The great advantage in pumping is that the grower will not be required to pay for any waste water and can easily control the weeds and other pests.

NEW MOTOR LAW.

Everything on wheels, from bicycles to limousines, wagons, and motor trucks, must have head and tail lights after Dec. 31. Motor vehicles other than motorcycles must have two lights in front and one red lamp behind, visible at least 500 feet away. Motor cycles and bicycles must have one white front light and a red lamp or reflex mirror behind. Wagons, etc., must have one white light on the left side, visible from before, from behind, and from the left. Front lights of motor vehicles must be permanently dimmed or directed so that the center rays strike ground not over 75 feet away.

A number plate must hang in the front and rear of every motor vehicle ecept motorcycles, which are not required to have one in front. These number plates must be fastened solidly at least 16 inches above ground and be kept clean. The rear ones must be under white light at night.

Mufflers must be used in cities and towns.

In turning on public highways, all vehicles must keep to the right of center.

Careful driving at all times is enjoined, not over 30 miles per hour on any highway, nor over 20 miles where the roadside is closely built up, nor over 15 miles in business districts, nor over 10 miles on approaching highway crossings, bridges, curves, etc.

Violation of these provisions is punishable by a maximum of $100 fine or 30 days' imprisonment for the first offense, and suspension of license for 30 days.

PERMANENT MACHINE EXHIBIT.

Among the plans for a permanent exhibit at the State Fair grounds, is the proposition to put up a machinery hall with 75,000 square feet of floor space to house exhibits which would be open to inspection the year around. It is proposed to prohibit the making of sales in the building, making it a purely educational exhibit with the primary object of furnishing a chance to compare different makes and see all the latest improvements.

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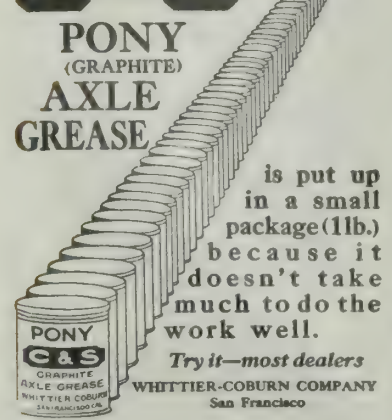
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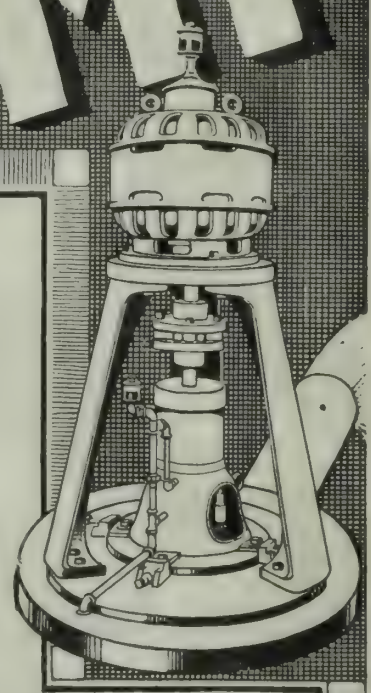


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Circular containing 100 mechanical movements mailed free.

SOIL TESTING MACHINE.

A little device of interest to every farmer or agriculturist has been invented by Dr. M. O. Reiche, a graduate of the Dresden and Munich, Germany, agricultural colleges, and until recently Assistant Director of the Agricultural Experiment Station at Munich, Germany.

Dr. Reiche calls it the "Standard" Soil Tester, because the testing of the soil is all done by one standard, viz., 20 grams.

By using the "Standard" Soil Tester it is claimed that one is able to determine whether soils are acid or not, and to what degree; to as certain the carbonate contents available in the soil to a close percentage, and to distinguish whether the disclosure is of lime or of black alkali; also to determine the amount of humus in the soil.

When the amount of lime, or humus, if any, in the soil is established, it gives the assurance whether the soil is in fertile, workable condition or not, and whether it is acceptable to develop further fertility by the addition of fertilizers of different kinds, based on the character of crops to be raised. Unless soils have a sufficient amount of lime and humus, they are not able to properly assimilate the fertilizer, and money spent for fertilizer, without a knowledge of the lime and humus available in the soil, may be spent uselessly.

Although it has been on the market less than a year, it is reported that many agricultural schools are already using the "Standard" Soil Tester in their demonstrations to pupils, and in their laboratories with satisfactory results.

As the expense of testing the soil with this machine is merely nominal—being only a small fraction of a cent a test, its introduction will be watched by every farmer.

TRACTOR PLOWS 12 INCHES.

"As to the Sieve-Grip tractor I have, I certainly am having good success with it. Use it for most everything that comes along. Have put it to plowing with a single, 14-inch plow 12 inches deep in hard adobe soil, where my neighbor is using four horses on a single disc averaging 6 inches deep. No comparison as to the quality of the work," writes L. M. Higgins of Carpinteria.

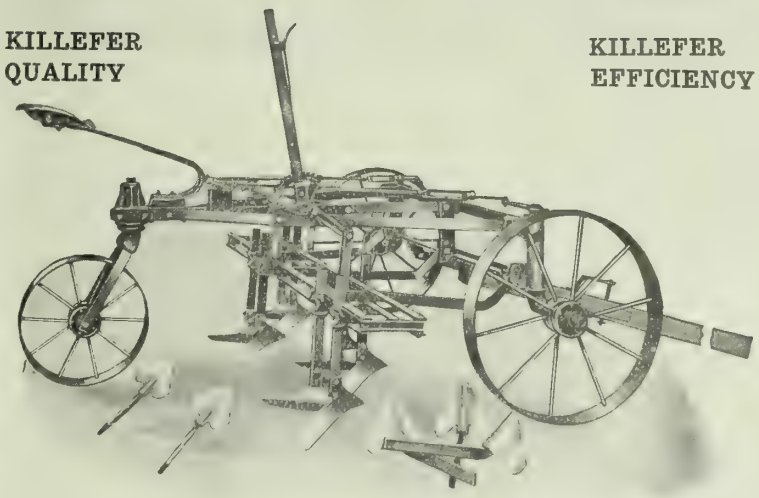
"I have taken a picture of a load of thirty-six 80-lb. sacks of beans on a stone-boat, making a load of 3000 lbs. or 80 per cent of the weight of the tractor. This shows you the braw-bar pull

"It is my pride with the engine to be able to work the ground close and well and save all the hard work that I can. In fact, I do not expect to use a hoe in the orchards again until next summer. Neither do I intend to have a horse in the field to do something I can't do with the Sieve-Grip."

GAS TANK LEAKED.

Gasoline entered the exhaust pipe of a motor truck being used on the highway in Monterey county and the driver jumped just as the tank exploded. The truck ran on down the hill into a ditch and burned up. A beautiful ring of smoke that could be seen a mile was sent up at the explosion. Moral—take care of your gasoline tank and pipes unless you want to take part in some impromptu fireworks.

Beet Cultivator
KILLEFER QUALITY
KILLEFER EFFICIENCY



The frame of this Cultivator is made of one continuous piece of high carbon steel with a truss connecting it to the main castings, supporting the two steering wheels. This construction makes a cultivator that is almost impossible to break down in the center and in consequences the wheels are always in line and under easy control.

The lower frame or tooth bar is from the same quality of steel with a strong arm at each end, which connects with the lifting rod, allowing no chance for the frame to dip or run deeper at the ends. The seat is set back far enough to give an unobstructed view of the rows. The foot control of the front wheels is adjustable with a turnbuckle for taking up wear, and is very easy on the operator. A lock is provided for the rear wheels that holds it rigidly in line except on the turns. This is the **strongest** and **best made** Beet Cultivator for sale on the Pacific Coast.

The Killefer Manufacturing Co.
2209-21 Santa Fe Ave. Los Angeles, Cal.



IRON AND STEEL HIGHER.

Pig iron advanced in price one-half more in November than in the four months previous. Pittsburg dealers are going 1000 miles for scrap iron. The steel trade has recently been wildly excited, and prices have advanced more rapidly than ever before. Steel mills have discontinued making contracts in many lines, except with specifications on hand; and then only for delivery several months in the future. Differences of $6 to $10 per ton are found on steel sold late in 1915 as compared with early in the same year. Tractor, engine, pump, and machinery manufacturers are affected. Will consumers of these articles buy as much at advanced prices as before? "The Iron Age" notes that while steel prices have been advancing, the structural steel trade has been the quietest of all steel-consuming trades and that the export trade is almost at a standstill because the mills cannot insure delivery. If these should take on new activity or there should be continued demand for steel for war, prices may go still higher during the next year or two.

A demonstration of the Yuba Ball Tread Tractor will be made to responsible parties on their own property. In requesting, address

The Yuba Construction Company
Department A-22
433 California Street, San Francisco, Cal.

General Agricultural Review.

CITRUS FRUITS.

Butte county figures on $300,000 for its orange crop.

The Riverside district had shipped 69 cars of oranges and 25 of lemons Dec. 23.

From 3½ acres of 3 year trees, Henry Koenig of Woodlake picked 150 boxes of oranges.

A lot of 25,000 citrus trees has been shipped to Yuba county for planting in Brown's Valley.

Lindsay won sweepstakes at the last National Orange Show, but is rather tardy about preparations to defend the cup this year.

Dean H. J. Webber of the Riverside Experiment Station suggests the possibility of finding frost resistant citrus varieties among the seedlings growing at the Station.

Orange shipments to Dec. 21 have been 1132 cars from Porterville, 1479 from Lindsay, 676 from Exeter and the Visalia Electric, and 72 from Strathmore, a total of 3359.

Butte county citrus growers are being agitated to protest against sweating, seemingly to distract attention from their non-observance of the 8 to 1 test. The Stewart Fruit Co. is making a strong bid for unstandardized business.

The U. S. Dept. Agr. is sending three men east with four cars of fruit from the Merryman ranch at Exeter to keep records of temperatures and other conditions en route. Three cars are packed in cars with false floors and storage batteries to keep an even temperature. Frozen fruit has often been found in the floor tiers and near the doors.

G. Harold Powell reports greatly increased sales of oranges at higher prices than for corresponding weeks in most previous years, a preference in the East for California oranges over Florida's, a rather short navel crop but prospects for a heavy increase of Valencias. Lemons have been in exceptional demand, though the crop is 12 per cent greater than usual.

OLIVES AND NUTS.

Off grade walnuts will be sold this year by the Ass'n for each district separately.

The Esparto Chamber of Commerce is already planning the second almond festival, to be held next October.

Goleta walnut growers have received over $150,000 for their crop besides the returns to growers who are under the Ass'n umbrella, but do not help to hold it up.

A ripe olive packer says the demand for good ripe olives is increasing; that there is only one thing to hinder the growth of this demand; that is supplying inferior fruit put up by inexperienced picklers.

The "Southern California Walnut Co.," a concern outside of the Cal. Walnut Growers' Ass'n, is reported to have been kicked out of Reno, Nevada, because only 24 per cent of their unbleached nuts were good and only 41 per cent of the bleached were fit for food.

DECIDUOUS TREE FRUITS.

Nevada and Placer county tree planting has started.

Winters' peach growers signed up $2560 in the State organization Dec. 20.

Wenatchee, Wash., apple growers have found ready demand for quarter-boxes.

A carload of nursery trees for planting was recently received in Sutter county.

J. E. Bergtholdt of Newcastle reports a good demand for trees throughout upper California.

Prune planting in the Russian river country is booming, especially in vineyards, where vines are being replaced with trees.

It is announced that the dried peach organization now forming will likely handle canning peaches also when it gets to going.

Local meetings of the peach organization subscribers will be held Jan. 5 to nominate 25 trustees to be voted on at the mass meeting Jan. 12.

The First National Bank of Selma directors subscribed $500 each to the peach organization besides the regular share per acre of fruit grown by them.

Sixty-four pounds of Ben Davis apples were grown on a four-year tree in sandy loam near Porterville, by Bud Kincade. One of them weighs 12 ounces.

Sec. Hooker of the Hood River Apple Growers' Ass'n will address a meeting of the Beaumont Fruit Growers' Ass'n and the public in general on Jan. 15.

Brazil last year obtained 1 per cent of her prunes from California and 99 per cent from Europe. The State Marketing Commission hopes to reverse the percentages.

Hayward Reed, who has just returned from Australia, expects to ship some pears to that country next season. He picked a bag of ripe cherries there in November.

Napa County Farm Adviser H. J. Baade conducted a novel pruning demonstration. One member of the party would prune a tree, and the rest would criticize the job, each taking his turn at pruning.

Shipments of the 1915 crop dried fruit by sea almost equalled those of 1914, despite the Panama Canal slides. Sec. H. P. Dimond of the Dried Fruit Ass'n of Cal. reports in-

Exterminate Squirrels

GOPHERS,
PRAIRIE DOGS, BORERS, ANTS,
RATS, ROOT APHIS, ETC.



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Smooth, Uniform Burbanks, 790 Bushels per acre. (See front page, issue Dec. 25th.)

S-K 23

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ROEDING TRUE TREES FRESNO, CAL.

Plant walnuts for profit. Our stock is scientifically grown and is, we believe, the finest on the market. We call particular attention to our magnificent trees of the "Vrooman strain" of the **FRANQUETTE, THE STANDARD VARIETY FOR GENERAL PLANTING.** We can also supply Mayette, Mayette Rouge, Parisienne, Placentia Perfection, etc. We advise planting grafted walnuts only and will advise with you the reasons why. Write us for suggestions and prices.

Walnuts

Our stock is complete and the assortment includes all the leading varieties of Oranges, Lemons, Pomelos, Limes, etc. Our trees have long been known for their superior quality, sturdiness and the fine quality of fruit they produce. Our trees are budded from bearing stock of known value. Our packing facilities are the best and we can deliver you these trees in the very best condition. We are offering special inducements. Write us.

Citrus Trees

For many years we have been recognized as the leading Olive growers in the State. Our stock is grown in soils especially adapted to olive culture. We are safe in saying that our olive trees are the finest that can be produced. We grow all the leading varieties, such as Manzanillo, Mission, etc Whether you are thinking of planting 5 or 5000 it will pay you to get our quotations.

Olives

We are headquarters for Ornamental trees and roses. We have a splendid stock of all varieties of Cypress, Cedars, Pines, Palms, hardy Evergreen Shrubs, Field Grown Roses, etc. We shall be pleased to be of service to any who contemplate beautifying their grounds, and will gladly offer suggestions without charge to our customers. Write for information in reference to our special **LANDSCAPE SERVICE,** for laying out grounds, parks, subdivisions, cemeteries, ranches, street planting, school grounds, colony development, etc.

Ornamentals

Every Planter Should Have a Copy of Our Catalogue

Every planter should have a copy of our new 1916 illustrated catalogue, which lists and prices over 2000 varieties of citrus and deciduous fruit and ornamental trees, vines, plants, shrubs, as well as evergreens, palms, roses, etc. It is the most complete price catalogue that we have ever issued. Write for a copy. It will be sent free to any address.

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Please send me, free of charge, your 1916 catalog.
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Name and Address.....

spection of nearly 30,000 tons to go by sea.

Old almond trees in Yolo have been formed, usually, with too many main branches, according to Farm Adviser N. P. Searls, who recently held a pruning demonstration of young apricots, almonds, apples, peaches, plums, prunes, grapes, and olives, to illustrate how to avoid removal, later, of big limbs.

The Central Committee for the peach growers' organization is reported to have recommended election of trustees by districts as follows: Sacramento Valley 5, Fresno county 10, Kings county 4, Tulare county 3, Merced county 1, Madera county 1, Stanislaus county 1. San Joaquin county seems to be left out, though several large subscriptions have been taken there.

GRAPES AND SMALL FRUITS.

J. G. Onstott of Sutter county is preparing 160 acres for Thompsons.

Resistant stock is not good for Thompson Seedless in Sutter county according to H. A. Walton, Jr.

After discussion before the Sutter county supervisors it was recently decided to retain the ordinance prohibiting the importation of rooted cuttings.

H. A. Hyde of Monterey county recently received what is said to be the first carload of strawberry plants that ever crossed the continent. These came from Maryland. He expects another carload from Oregon soon.

C. H. Holley of Tulare county shipped a car of 932 crates of Emperors Nov. 24, which sold in Chicago for $2,014.50. These grapes had recovered from frosting, by leaving them on the vines about two weeks.

Despite the brandy tax which it was vociferously asserted last spring would ruin the wine, table, and raisin grape industries, wine grape growers in San Joaquin and Napa counties are to receive cash for the grapes where they expected to be paid in wine.

Foothill vineyardists of Tulare county have been suffering from black rot. Emil Gundelfinger has been applying lessons learned from the Japanese and feels certain that the remedy is Bordeaux spray just before blooming and if necessary again after the grapes begin to set.

GRAIN AND FIELD CROPS.

Bluestem wheat sold at $1.02 per bushel at Portland Dec. 23. A strong demand for shipment to Europe is reported.

In the sorghum trials on the farm of Young Bros. of Alameda county, both brown durra and white Egyptian corn yielded at the rate of over 2500 pounds per acre according to Farm Adviser C. W. Rubel.

Fifteen women husked 150 bushels of corn as a surprise for a Pennsylvania farmer, charging him $3.75. He gave them a banquet at $1 per plate and at the next election woman suffrage carried three to one.

The State Water Commission will spend $1500 for investigation of economical use of water in rice growing. Frank Adams of the U. S. Dept. Agr. will have charge, the department appropriating $1500 more.

Rice plantings next season are estimated as follows: Butte 25,000 acres, Colusa 9000, Yolo 9000, Yuba 5000, Glenn 2000, Kern 8000, Fresno 1500, Tulare 2000, Kings, Merced and Stanislaus 2000; total 63,500, or over double the 1915 planting.

From 400 acres of Sutter county land P. J. Hiatt is reported to have sold $38,000 worth of white beans, $7500 of broom corn and seed, besides alfalfa. He expects to put in 1000 acres of beans next spring, using three tractors to work up a seed bed quickly.

There is a general temporary lull in the rice markets of U. S. About 35 per cent of the crop is in the hands of growers according to Sec. G. E. Harvey of the Pacific Rice Growers' Ass'n, and it is to the interest of all to hold firmly for better prices. California growers have held exceedingly well.

The Moulton Irrigated Land Co. of Colusa county is reported to have several thousand acres of rice. Their tenants are required by contract to plant seed inspected and approved by the company's seed expert and to keep water grass out of the fields. If the weeds are not kept out the company reserves the right to do the work and charge the cost to the crop, insuring payment by mortgage executed in connection with the lease.

MISCELLANEOUS.

The Gilroy Farmers' Union elected J. M. White president, J. G. Ross vice-pres't., G. A. Moore sec.-treas., and Mrs. J. M. White chaplain.

(Continued on page 23.)

Kirkman Nurseries

RELIABLE TREES AND VINES

Established 1888. WHOLESALE GROWERS of Deciduous and Citrus Fruit Trees, Olives, Shade and Ornamental Trees, Grape Vines, etc. Our largest order last year was for 200,000 Deciduous Trees. This customer advises that he has 98 per cent stand. Let us supply your order this season—large or small. What do you expect to plant? Address Main Office, 2501 Tulare Street, Fresno, California.

Sulphuric Acid Neutralizes Black Alkali.

That alkali lands may be reclaimed by treatment with sulphuric acid is pointed to very strongly by experiments of the Univ. of Calif.

These new hopes of alkali-reclamation are based on investigations carried out in pot experiments in the greenhouse in Berkeley, and in field experiments in small plots at Kearney Park near Fresno. The field experiments, used to confirm the pot experiments, are even more striking in their results.

The action of the sulphuric acid is three-fold: it entirely neutralizes sodium carbonate, the corrosive "black alkali" salt; it shrinks the jelly-like, easily-swelled materials in the soil, known as "colloids," which are put into a very badly diffused and swollen condition by the washing out of salt by the winter rains or by irrigation; it sets free some chlorine from the common salt, therefore changing all alkali that does remain into sodium sulphate.

Sodium sulphate is the least harmful of the three salts common in alkali land. Plants can stand very much more of that salt than of the others, and besides, sodium sulphate is less soluble than the other salts. Not only sodium sulphate, but also calcium sulphate, magnesium sulphate, and other metallic sulphates are formed, and these have been found to have the power to prevent the poisonous action of sodium sulphate and of other salts. Therefore, through changing the corrosive "black alkali" salt into sodium sulphate, driving off chlorine from the common salt, and making that into sodium sulphate, by shrinking the "colloids" (or jelly-like, easily-swelled materials), and by producing calcium and magnesium sulphates, the soil can be changed into one containing only one kind of salt, and by the shrinkage of the colloids can be made much more pervious to air, and therefore a more favorable place for the necessary bacteria and fungi to live in.

Milking Market-Milk Producers.

(Continued from page one.)

receives about 13 cents per gallon on the Los Angeles market.

With no investment in cattle, farm lands and dairy equipment, the city dealer has taken a gouge out of the consumer to the tune of several hundred thousand dollars annually, and while the gouging was good took a rap at the producer for about a quarter million dollars annually. The worst of it is, cheap butter and rapid development of dairy lands are playing into his hands for more of the same kind of medicine unless some check is placed on his resourcefulness. No one blames him for taking advantage of the circumstances and feathering his own nest, but there is an uprising brewing among dairymen supplying milk to San Francisco and Los Angeles that points toward his regulation in the very near future.

Co-operation to the Front.—Co-operation is being prescribed as the most likely cure of the present disease in both the southern and northern part of the State. In the north this plan is being fostered by an older co-operative milk producers' organization known as the Bay Counties Dairy Co., a concern which has been an "in and out" factor in maintaining better prices for producers tributary to the Bay Cities for some time. In Los Angeles an entirely new organization has been perfected and is known as the California Associated Milk Producers' Ass'n. The avowed purpose of both organizations is "to make the distributor be good or else step on his toes."

After an exhaustive study of the northern field and market, a committee of five leading dairymen have submitted the following proposal:

They recommend the forming of a corporation with a capital stock of $100,000, of which amount $45,000 must be subscribed before any subscriptions shall become operative. Each stockholder will bind himself to ship his entire output, for a given period, to the company and the company will then become owner of it and sell it for the highest market price.

Milk will be paid for according to the butterfat test and the stockholders will receive the full amount received for the milk, less the actual cost of selling and five per cent on the stock investment, for depreciation, etc. The directors will fix a certain basic price and will pay the members on that basis monthly, pro rating the surplus at the end of the year after deducting the above mentioned items.

The stock will be subscribed for at the rate of $25 for each 10 gallons of milk the producer contracts with the company for, thus allowing stockholders a voting strength in proportion to the amount of milk he contracts for. Only half of this amount will be paid for upon the foundation of the company, the balance being payable at the option of the directors, but not earlier than June 1, 1916, and then only in monthly installments. The committee points out that the $12.50 per share only equals three-eighths of a cent a gallon and that a reduction of more than that amount is probable the coming year unless the proposed organization is formulated.

What Will Be Done with the Money.—With this amount of money, the committee recommends that the company erect a milk depot in San Francisco, suitably located and large enough to handle all the milk sold by members to the company. It is advised to have this depot complete in every detail, and equipped with paraphernalia that will allow the company to enter into the wholesale distributing business, at such times as it cannot in other ways secure a fair market price for its members' product.

It is not the plan of the committee to enter the retail field, as that would entail a much larger sum of money as facilities for covering the entire city would be necessary. They will simply do a wholesale business and be prepared to dictate to the distributor rather than be dictated to, as at present.

That the remedy is timely, and entirely practicable from a producers' standpoint is evidenced by a late report from Secretary F. X. McGuire, who has been soliciting subscriptions for the proposed company. He reports that he already has $36,000 subscribed and expects to raise the other $9,000 in less than a month's time. The proposal is being taken up with the new State Market Commissioner, who will probably be asked to appoint one of the directors.

Similar success is reported from Los Angeles, although that association's plan is somewhat different and does not embrace such quick action.

With the product of approximately 50,000 cows at stake in these two cities alone, producers in smaller cities in which conditions are even worse than above outlined will watch the accomplishments of these associations with more than ordinary interest.

TOO MUCH WATER DECREASES ALFALFA YIELDS.

More water means less instead of more alfalfa, once a certain limit has been reached. This is the valuable lesson of a six-year field test just completed at the University Farm at Davis. It was shown that, contrary to accepted belief, a limit is soon reached above which the yield of alfalfa actually decreases with increasing amounts of irrigation water.

In these tests, quarter-acre checks were used, and each test was duplicated. Quantities of water varying from 12 to 60 inches were applied to the various checks. Two checks were left unirrigated. The average yield for six years from the unirrigated checks was 4.07 tons of hay per acre.

The largest average yield, 9.28 tons, was produced by applying 36 acre-inches of water per acre, in 4 nine-inch irrigations.

But the most economical yield was produced with 30 acre-inches of water per acre applied in four 7½-inch irrigations, 8.99 tons of alfalfa hay being produced. The average increase in yield of .29 tons per acre by using 36 instead of 30 inches in a season was not sufficient to pay for the increased cost in water and labor. Between nothing and 30 inches, the yields increased uniformly with the increased amounts of water applied.

A slight decrease in yield was shown from four 12-inch irrigations, while a decided decrease resulted from four 15-inch irrigations, which produced but 8.20 tons of hay per acre.

At the end of the six-year test a fair stand of alfalfa still remained on all checks excepting those receiving either no irrigation, 12 inches, or 60 inches per season. In the latter, not more than thirty per cent of the original stand remained.

HEALTHY CALVES DIE.

To the Editor: I have lost four calves this fall. They were from healthy cows and were very strong and lively when born. They suck the cows dry but soon get weak and unable to milk even from a bottle.—D. H., Madison.

[These calves are over-fed at birth. Cut down the ration ½ to ⅔.]

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Your Money SHOULD be made to earn its utmost for you.
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is conservative with this Bank, because of our low second floor rent and other economies in management.
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Boston wool sales in a week amounted to 4,000,000 pounds.

What Wisconsin Dairy Contest Did.

[Written for Pacific Rural Press.]

Since the announcement in this journal in our last issue that the University of California is to hold a dairy cow competition similar to the one conducted in Wisconsin, several years ago, subscribers have asked for fuller information concerning the contest and the scope and results obtained by the Wisconsin test.

Detailed instructions will be included in the circular which is now in the hands of the University printer, also the method by which the prizes will be distributed. These will be ready for free distribution in about two weeks. In the meantime we are giving a summary of the main facts brought out in the Wisconsin test which is furnished us by Prof. Woll.

He says: "Over 500 cows were entered in the competition, of which all but 58 were purebreds of the Jersey, Guernsey and Holstein breeds. They were owned by fifty-six different breeders and dairy farmers. About half of the owners had never had cows in their herds tested for production before, and among them were many new breeders who had only recently built up their dairy herds. The awards for monthly records of production, for which Hoard's Dairyman offered a special prize of $25 a month for the two years, were won by 24 cows owned by seventeen different breeders, the records ranging from 92.37 to 40.65 pounds of butter-fat toward the end of the lactation period. The average production of these cows was 72.3 pounds of butterfat, equivalent to about 85 pounds of commercial butter or nearly 3 pounds for each day of the month. Complete yearly records of production were obtained for 395 cows, viz., for 158 Holsteins; 157 Guernseys and 80 Jerseys. As records for two full years were secured for three Jersey cows, the number of yearly records obtained aggregated 398. The highest of these was that of the Holstein cow, Caroline Paul Parthenia, 77784, producing nearly 23,000 lbs. of milk; 2800 lbs. of solids and 888.2 lbs. of butter-fat during the record year. The largest production of ten cows in a herd was about 16,000 lbs. of milk; 2,000 lbs. solids and 589.7 lbs. of butter-fat. One of the important points that the records secured in the competition brought out was that the large cows within each breed were, as a general rule, heavy eaters and large producers; they yielded larger net returns and a more economical dairy production so far as feed consumption is concerned, than that of the smaller cows with a lower capacity for feed consumption and dairy production. The highest producing cow in the competition yielded over 300 per cent more butter fat, her feed cost 168 per cent more, and she produced 675 per cent higher net returns, than the lowest producing cow, and still the latter cow 'was not to be sneezed at.' She was a good deal better cow than the average dairy cow in this or any other state in the Union, being credited with a production of 218.7 lbs. butter-fat for the year. which is not far from 50 per cent above the average yearly production of cows in the state.

"The enormous difference in the production and profitableness of different cows was, therefore, brought out very strongly by the results of the competition, and naturally set many farmers to thinking and to considering in which class their own cows were, with the inevitable result that improvement and greater profits from the herd followed.

"The educational value of the competition was, for this reason, of the highest importance, not only to Wisconsin dairy farmers, but to all who followed the records made in the competition during its progress and the discussions to which these gave rise. Many new breeders were led through it to take up the work of official testing and gradually became centers for the dissemination of knowledge of modern management of dairy herds in their respective communities. Through them, neighbors and friends in different parts of the state learned how to better feed and care for their cows and were thus able to materially increase the profits from their herds The publications of the large records made by the competition formed an incentive to others to try to do as well; the cumulative effect of the competition in this respect has doubtless been of even greater importance to the dairying industry of Wisconsin and other states than the immediate results of the competition.

"Finally, through the competition were obtained authenticated records of production of milk, solids and butter fat and the feed consumption of some 400 cows for an entire year under normal conditions of dairy management. These data as published form invaluable material for the study of questions relating to the management of dairy herds, including the breeding, feeding and dairy production of the modern dairy cow, and have been frequently used in the past by speakers and writers on dairy subjects."

SIMPLIFIED CORRAL CLEANING.

[Written for Pacific Rural Press.]

On the John Edwards dairy near Keyes, Stanislaus county, most of the heavy work of corral cleaning has been overcome by the erection of a manure-loading platform.

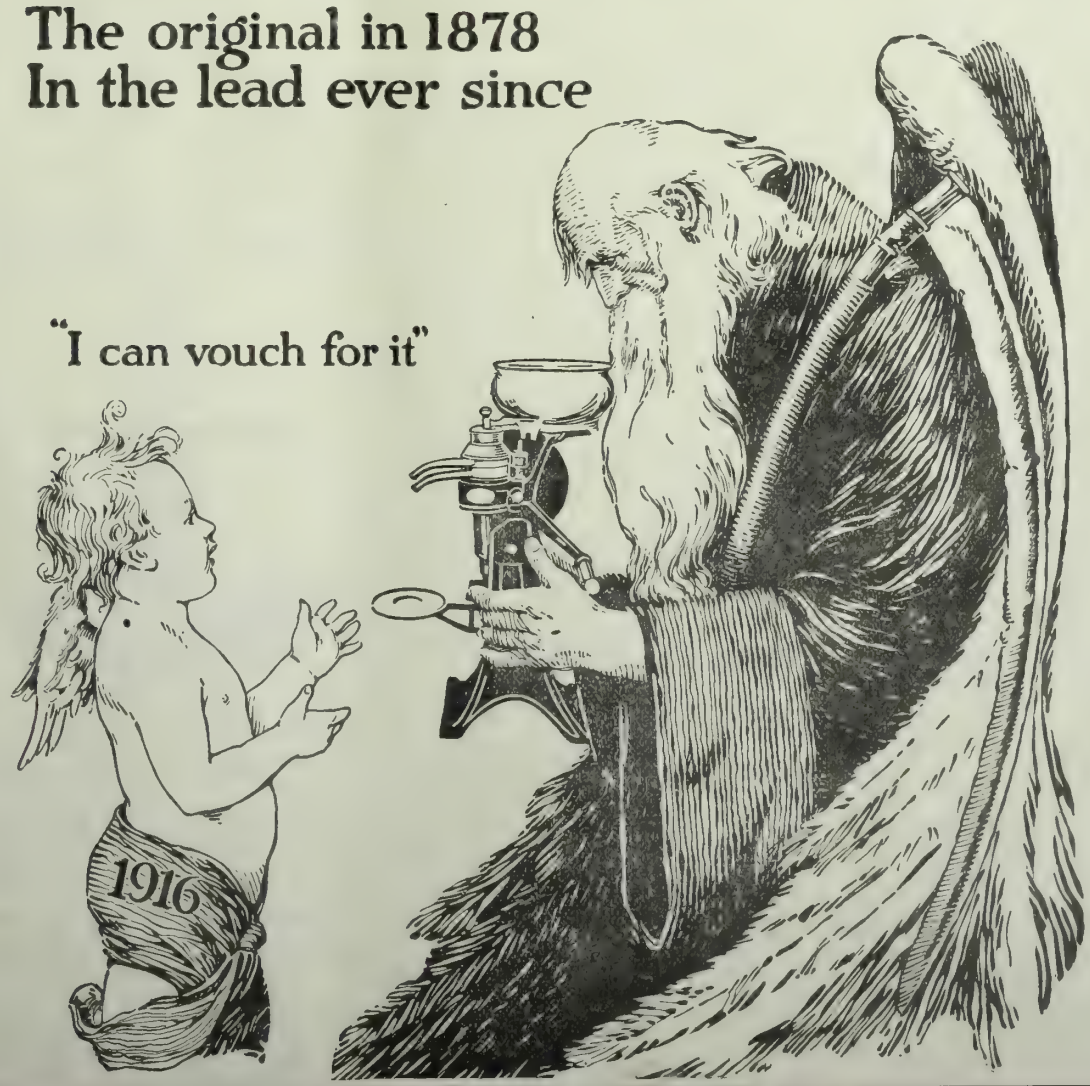
This platform is nine feet wide and has a base of 15 feet in length made of 2 by 4 framing lumber. It is six feet high in front and slopes down to the ground in the back, thus making an incline runway covered with 1x12 boards, laid lengthwise, and extending some six or seven feet beyond the frame work at the high point, being supported by an extension of the frame work of the platform. This extension, however, has an opening the width of the platform and about three feet across, about 18 inches from the end of the extension. A block and tackle equipped with a steel cable is fastened onto the high end of the platform. After plowing the corral and scraping the manure to the foot of the platform a team is hitched to one end of the steel cable and a scraperful of manure to the other. In this way the scraper is pulled to the top of the incline where it is dumped through the opening in the platform extension, into the manure spreader stationed beneath. This saves practically all of the pitching usually necessary and allows thorough cleaning in much less time. The platform can be built with a small amount of rough lumber and by putting it on runners it can be hauled to any point in the corral.

DE LAVAL

CREAM SEPARATORS

The original in 1878
In the lead ever since

"I can vouch for it"



With the Live Stock Men.

DAIRYING.

J. S. More of Manteca erected and filled a 100-ton silo last fall.

Mr. Delameter of Salida has added three registered Jerseys to his herd.

John Breschini of San Ardo has leased his dairy ranch to a Swissman and will move to Salinas.

E. N. Mulick sold the Holstein Pearl Reka Ormsby for $250. She is related to the world record Duchess Skylark Ormsby.

A new creamery is finished at Lund in the White River Valley, Nevada. The product will be sold in Ely and the mining camps.

F. T. Wulff of Modesto has eight cows with their first calves, that are yielding 1¼ pounds of butter-fat per day, having freshened last fall.

More than 75,000 short weight milk bottles were confiscated in Alameda county last year by the State Sealer of Weights and Measures.

M. H. Tichenor of Carnation Dairy Farms and E. C. Peck of Modesto are boosting the Oakdale section for dairying.

C. H. Schmidt of Selma has just installed four Guernseys and five Jerseys as a diversified farming project with his peach orchard.

Stockton is still trying to pass a very stringent city milk law, but they want it to conform with the State law which goes into effect next Oct.

The California Central Creamery at Ferndale shipped two carloads of butter Dec. 22 to the Brooklyn navy yard. This is part of a large contract.

The Nevada Experiment Station recently bought the young Holstein bull Dutch John Korndyke from B. D. Scott of Lemoore, to head the station purebred herd.

Dairymen of the Kerman district recently formed a cow-testing association, 400 cows being signed up right after a meeting addressed by E. C. Voorhies of University Farm.

Miss Isabelle Sartori of Petaluma milked 11 pounds from a nervous cow in three minutes. The cow stood on a platform in the presence of a large crowd of Christmas merrymakers.

Frank Hamm of the Coffin ranch of Modesto is well pleased with his six grade Holsteins and the purebred Ollie Johanna Sir Fayne the 5th, all of which were bought at the Exposition.

A typhoid patient worked in a dairy supplying Berkeley and Richmond. The Berkeley supply was pasteurized; the other was not Twelve customers in Richmond took typhoid; none in Berkeley.

A. B. Humphrey of Mayhews will be ready to move into his new dairy plant at Escalon in a few days, all the buildings are new and arranged to save time. Sharples milking machines are being installed.

The Challenge Cream and Butter Co. of Los Angeles which sells butter for the Riverdale Co-operative Creamery and the Dairymen's Co-operative of Tulare expects its 5 year contract to be renewed at the annual meeting Jan. 16.

The University Butter Scoring contest in which entries from 21 creameries were scored in San Francisco Dec. 21 showed the Sunset Creamery, Loleta, scoring 94½, the Santa Rosa Creamery 93½ and 17 others 90 or above. J. E. Thorp of Stockton scored 90.

H. E. Cornwall has recently completed four 7-day Holstein tests. A four-year-old made 17.76 pounds of butter from 403 pounds of milk. A junior two-year-old made 11.31 pounds butter; a senior yearling made 9.42 pounds butter two months after calving. Abbie De Kol of Eastbank 2nd, junior four-year-old, made 20.56 pounds butter from 468.8 pounds milk.

The average of the highest 50 Guernsey records in the year 1913-14 is 715.7 lbs. fat, with one cow producing 1073.41 lbs. fat. The year 1914-15 disclosed another cow which produced 1098.18 lbs. fat while the average of the highest 50 is 742 lbs., a gain of 26 lbs. Several of the cows in the first mentioned year have daughters in the highest 50 of 1914-15.

SWINE.

The John McArthur Co. of Shasta county recently shipped 5 cars of hogs to San Francisco at 6½ cents.

E. E. Gore of Medford, Ore., took a carload of hogs from Medford, Ore., Dec. 22 to the Portland Stock Yards.

Pasturing alfalfa with hogs during the alfalfa weevil's egg-laying season is said to check that pest.

Del Dayo Stock Farm of Sacramento has filled nine orders for registered Berkshires since November 1st.

Five deaths have resulted in three weeks in Portland from trichinosis contracted by eating improperly cooked sausage.

Van Hook and Son of Dos Palos pronounce fine chopped alfalfa, soaked, and rolled barley a feed hard to equal for growing hogs.

Hog cholera has been practically eradicated from southern Stanislaus county by inoculating exposed animals, according to Farm Adviser C. M. Connor.

The Portland Livestock Reporter gives the following prices for hogs for the weeks ending Jan. 2: 1911, $8.05; 1912, $6; 1913, $7.05; 1914, $7.60; 1915, $7.

Secretary J. I. Thompson of the California Swine Breeders' Ass'n reports that consignments are coming rapidly for the swine sale January 27 at Sacramento.

Hog prices at Portland Union Stock Yards advanced five cents in the week ending Dec. 21, over any price of the previous week. Most of the sales were at $6.05 to $6.10.

Consul General E. D. Winslow of Copenhagen reports that that city is consuming about 25,000 pounds of American salted pork daily. A price limit of 19 cents per pound is imposed. Denmark is the most famous bacon-producing country.

O. L. Linn of Modesto writes that he received last week five bred Poland-China gilts from Iowa, one a first prize winner at the State Fair, one a first and one a second at the county fair, and 2 others. They come from Isaac Overton. J. W. Pfander and Sons, and Williams Bros. and will become the foundation of another fine purebred herd in Cal.

BEEF CATTLE AND MULES.

Six cars of mules have been taken to Livermore valley pastures from Meridian.

Three cars of beet-pulp-fed cattle sold recently in Portland Union Stock yards at $7.50.

About 300 cattle, 12 human beings, and numberless dogs have been bitten in Nevada by rabid coyotes.

A government mule buyer just purchased a car of mules from a State highway contractor in Yuba county.

The John McArthur Co. of Shasta county recently shipped 18 cars of cattle to San Francisco. Cows brought 5 cents, steers 6 cents.

Two hundred fat steers were shipped by the Porterville Alfalfa Co. Dec. 20 to San Francisco. The natives averaged over 1200 pounds They still have 275 head fattening at Poplar.

H. L. Murphy of Perkins wrote from Nevada that R. M. Dunlop and himself were on their way with five cars of registered tuberculin tested Shorthorn and Hereford cattle, expecting to reach Sacramento about Christmas. The shipment includes 25 Shorthorn cows and heifers and 18 bulls one to 2½ years old.

Edgar Allen Forbes, secretary of the California Development Board, has been appointed secretary to Harris Weinstock, State Market Director.

P. O. Box 679 P. O. Box 1117.

H. B. THORNBERRY

Dealer in Registered and Pedigreed

Jacks and Jennets and Gaited Kentucky Saddle Horses.

Largest importer in the United States. Stock sold under the very best possible guarantees, and with terms to suit purchasers.

STOCKTON CAL. LOS ANGELES, CAL.

Classified Advertisements.

MISCELLANEOUS.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

APPLES!—Buy direct from producer. Newtowns, 90c; Missouri Pippins, $1.00; Bulk pack, 4 and 4½ tiers equal proportion. No 2 grade for cooking, 65c. Edad A. Hall, Watsonville, Cal.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.

SAVE MONEY ON YOUR PUMPING PLANT—We are reducing our stock of Gas Engines, Oil Engines, Centrifugal Pumps, Friction Clutch Pulleys, etc., and can name you very low prices indeed. Write us at once. Commercial Iron Works, 481-497 Fifth St., San Francisco, Cal.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

SOMETHING NEW—Buy your Tea and Coffee from the Importers. Always fresh. Write for list. THE WM. J. SCHROTH CO., 112B Market St., San Francisco.

ASK FOR SNOW'S GRAFTING WAX—If your grocer does not have it, send to D. A. Snow, R. 3, Box 255, San Jose, Cal.

FOR SALE—Baled alfalfa hay in carload lots. Write V. L. Wiser, Gridley, Cal.

WANTED.

WANTED—About sixty young men and women to enter the WESTERN NORMAL on January 1, 1916, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We save you time and money. For information address, WESTERN NORMAL, J. R. HUMPHRIES, Principal, Stockton, Cal., Box 704.

MOGUL TRACTOR—45 H. P. with Saunders disc plows. Cuts ten feet. Used one season. Has plowed but 1100 acres. Fine condition. Will demonstrate. Have no use for the outfit, so will sell at half cost and give terms; or exchange for horses, mules or cattle. Address W. H. Hord, 704 Market St., San Francisco.

YOUNG MAN WANTS POSITION on poultry ranch. Student of University Farm. Two years' experience. Understands handling of dairy cows, or fruit trees and gardening in connection. Best recommendations and references. Write W. C. Parkhurst, Dixon, Cal.

WANTED—A sober, energetic young dairyman. Must be good milker. To take charge of dairy. Opportunity for advancement. Give experience and wages expected. Box 12, Pacific Rural Press.

LAND FOR SALE.

ACRE CHICKEN RANCH FOR RENT—Sure living for couple. Attractive bungalow, gas, electric, fruit trees. Equipped for 400 chickens. Good furniture. Some stock. Incubators at sacrifice. Five minutes car. 295 Page St., San Jose.

FOR RENT—300 acres of alfalfa land. Apply to J. H. Glide, care West Sacramento Co., Sacramento, Cal.

NEW YEAR'S PRESENT FOR YOU—Send at once for New Blue Booklet, describing many opportunities YOU have this new year of obtaining SCHOOL, STATE, INDIAN, GOVERNMENT LANDS at very nominal prices. What will help YOU more this new year than getting land at about $3 an acre, which you can sell for many dollars an acre; or improve for home later? YOU know that land is getting much scarcer each year. Use some of YOUR 9 rights while they are worth $1,000 each. After land is all taken, YOUR rights will not be worth 1c each. Year after year, we helped many. Shall we help YOU? Our services, lists in 1916, until 1917, $5. County sectional map showing GOVERNMENT LAND, in any county, $2.50. State map showing 600,000 acres of SCHOOL LAND plainly marked, $2.50. Personal checks accepted. Order NOW. Get benefit of new year's service. JOSEPH CLARK, Manager, CALIFORNIA STATE LAND INFORMATION BUREAU, 1511 K Street, Sacramento.

CALIFORNIA LAND—Money-making little farms, high class, low priced properties in all counties. Call or write the oldest land office in California; we will save you 25 to 50 per cent C. M. WOOSTER CO., 303 Phelan Building, S. F. Catalogue free.

WANTED GOOD FARM, or unimproved land from owner H. L. Downing, 145 Palace Bldg., Minneapolis, Minn.

WANTED TO RENT for term of years, about 40 acres, with house and barn; other improvements—alfalfa preferred. Box 16, Rural Press.

TREES AND NURSERY STOCK.

WALNUT TREES — Late blight-resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California black root, as the California Black root is to the English root —Eureka, Franquette, Mayette, Neff's Pro lific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

TRIBBLE NURSERIES, ELK GROVE, CAL.—Grafted walnuts and grafted paper-shell pecans. Exclusive propagators of Tribble, Mayette, Kerr Parisienne, Gladys Improved Franquette, 19 other walnut varieties. Budded stock of almonds, prunes, Bartlett pear on resistant roots and other fruit trees and plants. New list ready.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

WALNUT TREES—Eureka and El Monte varieties a specialty; also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

EUREKA WALNUTS are the best grafted on native black roots. You'll be surprised at our prices. Write today—tomorrow never comes. Geyer Bros.' Walnut Nursery, 214 S. Almason St., Alhambra, Cal.

FRANQUETTE AND MAYETTE grafted on California Black. Sizes 3 to 10 feet. Prices reasonable. Special discount on large orders. Sunset Nursery, 525 W. San Carlos St., San Jose, Cal.

FOR SALE—Two and three-year-old Mission Olives, propagated from my own trees—no mistake about variety. Also Thompson Seedless Vines. W. A. Hayne, Box 461, Marysville.

TEPARY SEED BEANS—1915 grown, fancy, recleaned. 6c lb. Order now. Limited supply. Geo. A. Gibson, R. 4, Box 101, Lodi, Cal.

WAGNER'S CRIMSON GIANT WINTER RHUBARB—Subdivided plants. $15 per 1000; $2 per 100. G. E. Shelford, Healdsburg.

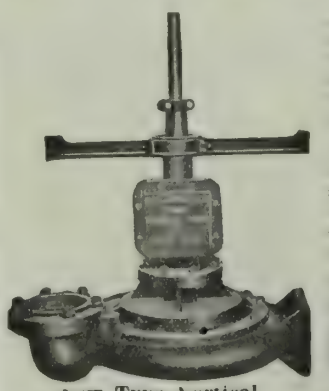
ETTERSBURG STRAWBERRIES — Plants: dozen 25c; 100, $1.50; 1000, $10. Delivered. E. Welty, Ripon, Cal.

BARTLETT PEAR TREES—$10 per hundred. N. M Cunningham, Red Bluff, Cal.

SPINELESS CACTUS for seed, $5 per ton. G. E. Fillbrook, Lakeside, Cal.

PRUNE TREES—12 cents. Walnuts, 30c. Cash Nurseries, Sebastopol, Cal.

The KROGH Vertical Pumps



New Type Vertical.

Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film; absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts means less friction and greater efficiency.

Get our Bulletin No. 78 before deciding on a pump.

KROGH MNFG. CO.

SAN FRANCISCO. LOS ANGELES.

When Grain is High **Feed DIGESTER TANKAGE**

Whether intended for show or market, the hog attains perfect condition and more quickly and economically if his ration includes some DIGESTER TANKAGE. The growing pigs need DIGESTER TANKAGE as a bone and muscle builder. Write for free pamphlet on hog-feeding.

WESTERN MEAT COMPANY,

Animal Food Dept., 704 Townsend St., San Francisco, Cal.

DIVIDEND NOTICE.

THE GERMAN SAVINGS AND LOAN SOCIETY
(The German Bank)
526 California Street.

For the half year ending December 31, 1915, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, payable on and after Monday, January 3, 1916. Dividends not called for are added to the deposit account and earn dividends from January 1, 1916.

GEORGE TOURNY, Manager.

GET STARTED RIGHT
Registered Duroc Jerseys.
$10 each PIGS $10 each
are money makers.

What's the use of raising "Scrub Hogs" when purebreds may be had at this price? Also grow faster. Send today.

NEW ENGLAND CALIFORNIA CORPORATION.
RIPON. CALIF.

SHEEP.

Sheap shearing in New Zealand has advanced from $4.86 per 100 head to $5.46.

All lines of sheep were advanced Dec. 20 at Portland Union Stock Yards and choice lambs were selling at $7.25 to $7.60, wethers at $6.50, and ewes at $5.75.

The New Zealand wool clip is estimated at 575,000 bales, 15,000 more than 1914. Home mills take 20,000 bales, leaving 555,000 for export.

Herbert Johns of Butte county is negotiating for a Shasta county ranch on which he expects to raise 400 acres alfalfa to feed sheep in winter.

Competition from Australian wool is expected to be less next year, especially the cheap grades. The London market shows a shortage of good class wools.

E. J. Johnson of Enterprise, Ore., took three cars of sheep to Portland last week selling lambs at $7.60, ewes at $5.75, and yearlings at $6.75.

The American Cheviot Sheep Society will hold its annual meeting at Hartwick, N. Y., Jan. 15. Election of officers by mail vote. Early registration of lambs is urged.

Record prices were reached at the first New Zealand wool sale for the season, which was held at Christchurch on November 11. There were 5,548 bales offered of the different classes and grades, with Southdown ewe and half-bred wools at the head at 20 pence (40 cents) per pound in several cases, Corriedale hoggets at 19¼ pence (38½ cents). Little wool brought less than 15 pence (30 cents). The advance over last year's prices ranged from 4 cents for the lower grades to 7 cents for some of the better classes. Much of this wool was purchased by American firms.

HORSES.

Wayne Dinsmore of the Percheron society writes: Have just received a cablegram from President Aveline of the Percheron Society of France, exact translation of which is as follows: "Exportation of two hundred stallions, foaled in 1912 or earlier, authorized."

The following rules have been enforced in securing consignments for the Second Annual Consignment Sale of draft horses to be held at Davis, February 2, by the California Draft Horse Breders' Ass'n: Stallions 3 years or under may be guaranteed or not at the option of the seller; for stallions over 3 years evidence must be furnished that the horse is a breeder. In case of mares of breeding age, a statement must be made as to the date of birth of last foal. Stallions offered for sale must comply with the State Stallion Registration Law as to soundness. A competent veterinarian will be on hand to make inspections.

Oregon, California, and Nevada recently joined in asking aid of the U. S. Dept. Agr. in stamping out rabies of coyotes and dogs in the States mentioned.

COW HAS SCOURING SPELLS.

To the Editor: There are times when my cow scours badly, does not give as much milk as usual, and seems to be stiff in the mornings She has been milking 10 months and is six months along with her second calf. Stable is dry. She gets all the alfalfa hay she can eat and some crushed barley at night.—P. F. P., Fresno.

[Cut out half the alfalfa hay and substitute oat hay. Give six 30-grain tablets sulpho-carbonates compound twice daily.]

LIVESTOCK DIRECTORY.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

BREEDER OF REGISTERED HOLSTEINS—E. E. Freeman, Route B, Modesto, Cal.

FRANK MEACHAM, Petaluma, California.—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Purebred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, addresss J. B. Agee, Napa, Cal.

SUNNYBROOK RANCH, Willits, Cal.—Breeders Registered Holstein stock. Young bulls for sale sired by Ruby Gem Cavary Lad. Prices reasonable.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

TWO REGISTERED HOLSTEIN BULLS out of A. R. O. dams. Sired by King Mead. Ready for service. J. H. [illegible] Co., Woodland, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

REGISTERED HOLSTEINS — A ten-month-old bull, $125, one five months for $100, and bull and heifer twins for $100. K. W. Abbott, Milpitas, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd, W. F. Mitchell, Visalia.

THREE REGISTERED AYRSHIRE BULLS—Serviceable age. Dams heavy producers. $150 to $200 each. J. W. Hanner, Patterson, Cal.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop., P. O. Box P.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class, thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

FOR SALE—The registered Guernsey bull Rival's Prince No. 26162. Pedigree upon request. E. L. Skidmore, Route C, Tulare, Cal.

TWO REGISTERED HOLSTEIN BULLS old enough for service. Very light in color. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

REGISTERED HOLSTEIN BULLS — Serviceable age. From finest strains. Panama-Pacific Dairy. Sutter Creek, Cal.

HOLSTEIN-FRIESIAN CATTLE and Berkshire Hogs. H. B. Goecken, Breeder, Goecken Heights, Livermore, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows Rancho Dos Rios, R. 2, Modesto

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander and Kellogg, Suisun, Cal

AYRSHIRES—Registered; all ages. E. R. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls from tested cows for sale.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY BULLS from register of merit cows. D. F. Conant, R. "B" Modesto

BREEDERS OF A. R. O. Holstein Freisian cattle exclusively. Dirk Dairy Farm, Lemoore.

CREAM CUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

PALENDALE HERD of Registered Holsteins. Young bulls for sale. J. A. Pelanda, Modesto, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Son, Chino, Cal.

BREEDER of Registered Holstein Cattle. Ernest Otto McClure, R. 2, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEIN BULLS for sale. Write Dr. Stetson, Napa, Cal.

REGISTERED HOLSTEINS—Golden West Herd. D. & H. Rowles, Modesto.

JERSEY BULL—8 months old. A bargain. O. J. Ames, Oakdale Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

BEEF CATTLE

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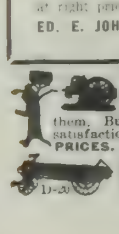
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HOGS PER ACRE ALFALFA.

To the Editor: How many hogs can one expect to sell from an acre of alfalfa producing 8 tons per season. How many from 80 acres if all the alfalfa is fed to them together with barley or corn to balance the ration.—J. W. D., Redding.

[Answered by Prof. J. I. Thompson, University Farm.]

[When grain is fed to hogs in addition to alfalfa pasture, it seems reasonable to expect about 500 pounds of pork per acre to be produced that should be credited to the alfalfa, when the yield is about the average. Alfalfa that will yield around 8 tons should produce in the neighborhood of 650 pounds of pork per acre.

An acre should carry about 2500 pounds of pork at one time. This would mean about 12 200-pound hogs. Eighty acres on the average would carry in the neighborhood of 800 pigs and the brood sows necessary to produce them. Of course, it would necessitate very good care and management to get desirable results from an area handled entirely in this way.]

PIGS IN BARN.

Perhaps you can't build a hog shed now but have barn room unused. Henry Webb of Madera has almost ideal conditions for his sows and pigs by keeping them in 14 different pens built around the inside of the hay barn with cheap panels. "It is surprising how quick you can do the work when they are fixed that way," says he.

Mutton Sheep on Small Farms.

[By R. E. Reynolds, Ore. Agr. College.]

EWES NEED EXERCISE.

A good example of what a difference exercise will make in producing strong, healthy lambs was to be seen last winter in two flocks of ewes owned by the College. One flock was kept on a hill farm where they had the run of a large pasture on rolling, well-drained land. These ewes had an old barn, open on two sides, for shelter and where they were fed oat and vetch hay once a day. The other flock of ewes were kept at the College on rather flat, wet land, with no pasture at all and no exercise other than what they got in small lots. They had to be fed all feed eaten. These ewes kept fatter than those on the hill-pasture, but in the spring they did not lamb nearly as high a per cent of lambs. Nor were their lambs as strong and vigorous as the others, and a large number of them required considerable care and attention at birth. The lamb crop of the ewes on the hill pasture where they were out and had plenty of exercise was not only larger and better than those from the confined ewes but was also produced at much less cost.

Sheep barns or sheds need not be expensive so long as they are on a high, well-drained piece of ground and free from drafts of air. In fact, very expensive and close barns are often detrimental, for they are hard to keep properly ventilated, they get too warm, and the sheep are much more apt to catch cold when kept in an overheated barn or shed.

All doors and gates should be made wide, for sheep when frightened all try to go through at once, often jamming ewes against the sides of the door or gate and causing abortion. Keep plenty of salt before the sheep at all times.

If panels are not already a part of the sheep equipment, provide a few of them, for they always come in handy and are a great help at lambing time. With a little care and attention the lamb crop in the spring can often be materially increased, and in the small flock the breeder should strive to produce as many twins as possible, for with a little extra care and attention, a ewe will raise a pair of twins practically as well as only one lamb.

ANTELOPE VALLEY NOTES.

"Since I did not study animal industry while at the University, and since I am now in the hog business, I am looking for authoritative information all the time. Each week the Press is read thoroughly at each one of my ranches and especially the articles on hogs. Enclosed is my check for a 'California Hog Book,'" writes Donald Graham of Lancaster, under date of Nov. 12.

"During the last summer I put two purebred Duroc-Jersey boars and forty grade sows on my alfalfa ranch. We have had fair success so far; we expect to do better from now on, for we are going to put up a closed house and have things more conveniently arranged. I am strong for the hog business and hope to make a big success of it. We are so fixed that we can raise our own grain for fattening.

Several people are beginning to raise good hogs here. Most of them have purebred boars and grade sows; one man is raising purebred Berkshires. I believe that many more will be raising hogs a year from now because of the fine alfalfa produced, the quantity of grains, and the feterita, etc., that can be raised easily and well. That we are close to Los Angeles is a big factor.

"With the hog business beginning well, the dairy business coming to the front, and the orchard business proved, we have a fine chance in this valley, which in time will surprise the wise ones.

"During the past two months the alfalfa men have been in their glory with hay $12.00 and more f. o. b. Lancaster. Now they are getting $15.00.

"A recent rain of .35 to .5 inches has made the grain farmer feel good. It is said that many thousands of acres will be farmed for grain this year which have not been plowed for 15 years. Most of the grain farming in the valley is done in the west end 30 to 50 miles from the railroad. I heard that the Tejon Ranch had leased a lot of pasture land for grain. Of course these fellows do not get any such yields as the people in the northern valleys do, but they seem to live. Some men have done some extensive pear and almond planting in the elevated parts of the valley.

"Just now I am having a large well put in to supply water for my pear orchard which will be three years old in March. My well is to be 16 inches in diameter to 150 feet; from there to 600 feet it is to be 10 inches in diameter."



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The Bull is a dandy, straight, nicely marked, being half white. He is just what you are looking for and is worth twice what I am asking.

Write, or better, come and see him.

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Veterinary Queries and Replies.

[Answered by Dr. H. B. Wintringham, Petaluma.]

Correspondents desiring a reply by mail should send money order for $1.00. No charge is made when questions are answered through this department.

STARVATION FOR CHOLERA.

To the Editor: In the latest Rural Press R. D. S. inquires what to do for white scours in calves. I will give my experience with this plague.

I had a registered heifer calf which began to scour badly on the third day—white scours I'd call it. Scoured for about a day then began to pass large quantities of mucous. As I lost a calf from this same cow last year, I at once began heroic treatment of this one, the principle of which is starvation. Remember that a good strong calf can live for several days without a bit of feed, so do not fear to shut down on the scouring calf. First I gave an ounce of castor oil with 20 drops of turpentine in a pint of boiled milk; 24 hours later began feeding once a day 1 pint boiled milk with 2 raw eggs, and once daily a pint of well cooked oatmeal gruel, strained, with 2 raw eggs; and always a tablet of sulphocarbolates in each feed. The castor oil and turpentine gets rid of the mucus, though I had to resort to it three times in a week; and always after using it delayed feeding for 24 hours. This was a good strong calf and I had her on this short ration a little over 2 weeks, before increasing her feed, which has always been boiled milk. This was six weeks ago and now I have as nice a calf as one may find anywhere. The sulphocarbolates are good but they won't stop the mucus and as long as mucus is thrown off, the stomach can't digest a thing. Right at present these tablets are nearly impossible to obtain, selling at $60 per thousand, but I happened to remember that a neighbor had spoken of having a lot so I got some of him. There were none in our town.

Merced. E. W. Doane.

[The treatment outlined above is the best one can use, though the dose of sulpho-carbolates is too small; and larger doses will bring quicker result. These tablets can and should be bought at retail for not more than $30 per thousand. In my practice have used many and various treatments and experience has shown that Abbott's Sulpho-corbolates come as near being a specific for this trouble as anything we now have. Use two to three tablets two or three times a day as needed (30 grain tablets). Where calves are very valuable and will stand the expense, vaccination at birth is the treatment par excellence.]

HOGS PARALYZED.

To the Editor: Some of my hogs get paralyzed in one hind quarter and lose control of it. Have been feeding skim milk and horse beans Is methylene blue a good remedy for abortion?—Sub., Decoto.

[Cut out the use of horse beans in the feeding of these pigs. Give each two to four ounces of Epsom salts depending on their size. Follow this with 15 grain doses potassium iodide twice a day for two weeks. Methylene Blue is not a sure cure for abortion and is too expensive at present to experiment with.]

COWS DON'T BREED.

To the Editor: Some of my cows do not get with calf, though they are served at frequent intervals. I have three young purebred bulls which I keep separate from the cows and I also keep the cows up twelve hours after service.—A. P., King City.

[An examination would be necessary to accurately determine your trouble, but try the following, which in any case would be indicated: Douch these animals out daily with one gallon 1 to 1000 solution of potassium permanganate for one week; then use two ounces cooking soda in one gallon of water for a douch for another week. You have very probably a catarrhal condition of the vagina which this may overcome.]

HOLE UNDER JAW.

To the Editor: My mare has a hole under her jaw from which matter has been running two months.—E. E., Linne.

[This is a fistula or opening into the mouth. It should be treated by a veterinarian, who will be guided by his examination of the opening.]

COWS PASS BLOOD.

To the Editor: I have a cow and heifer both with the same trouble. About a day after they are in heat they pass blood, whether they have been to a bull or not.—A. R. G., Garrison, Tex.

[Use the same treatment as outlined for A. P., King City, in this issue.]

DOES NOT COME IN HEAT.

To the Editor: A cow had a calf in June and has not come in heat since. She is in good condition.—L. V. P., Escalon.

[This animal retained a part of her afterbirth, and there is a chance that she will always remain sterile. Give her two pounds of Epsom salts dissolved in a gallon of water at one dose. Follow this up with fluid extract of nux vomica in one-dram doses twice a day for one week.]

BUCK'S HEAD TURNED.

To the Editor: Our New Zealand buck had canker of the ear. Peroxide seemed to heal the canker, but suddenly his head fell over to one side, one eye bulges out, and he rolls over in trying to walk. He won't eat anything but mush and milk and weeds, but is fat.—J. M. B., Lathrop.

[The canker was not treated soon enough and has attacked the inner ear. You had better destroy this animal.]

RECENT RINGBONE.

To the Editor: My old mare got a ringbone since last June. The lump is about two inches in diameter. Applied horse blister and later Gombault's Caustic Balsam with no results. Limps slightly in trotting.—T. K., Lincoln.

[Rub in tincture of iodine with a toothbrush over the swelling every day until blistered, then wait a day or two and begin again; continue this treatment for about six weeks or two months.]

CALVES HAVE SCOURS.

To the Editor: Many in this neighborhood are losing young calves with what appears to be more than ordinary scours. I lost four last year and two this winter. I used every precaution in cleaning and disinfecting stall. I lost a calf a day ago. Used niter, liquid rubard, and magnesia. Four calves born in the field are doing fine.—O. H. R., Turlock.

[Paint the navels of all newborn calves as soon after birth as possible with tincture of iodine. Make this a habit as part of your routine work; and if the trouble shows up after this cut the ration of the calf in half immediately and give two or three sulpho-carbolates 30 grain tablets three times a day in water or milk.]

FIRST ANNUAL AUCTION SALE

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PURE BRED HOGS

under the auspices of the

California Swine Breeders' Association

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State Fair Grounds

SACRAMENTO, JANUARY 27, 1916

100 head of pure-bred hogs of various breeds will be sold. These represent the TOPS of some of the best herds to be found in California. All hogs sold will be registered and be GUARANTEED BREEDERS by the consignors.

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GRANDSONS OF TILLY ALCARTRA

At Prices within Reach of Every Breeder and Dairyman.



A Grandson of Tilly Alcartra.

We have several splendid grandsons of this now famous cow which we can deliver to you at prices which will suit the pocketbooks of every dairyman wishing to improve the quality of his herd, whether it be a grade or pure-bred herd. These bulls are sired by our herd bull, Prince Alcartra Korndyke and out of A. R. O. cows, and are the only living grandsons of a cow having a record of over 30,000 pounds of milk in a year. Such an opportunity for increasing production has never been offered DAIRYMEN AND BREEDERS in California, price and quality considered. Buy one of these bulls and solve your low production problem. Write

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SHORTHORN CATTLE

Shropshire and Merino Sheep

FOR SALE, SINGLE OR CARLOAD LOTS



KING LANCASTER,

Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.

THEY HAVE GRAND CHAMPIONS BEHIND THEM.

Registered Berkshires

We offer for sale to clear out our stock of this year the following registered Berkshire Hogs in prime condition:

20 Boars and 24 Gilts farrowed March, April, May and June, 1915, all sired by Royal Pointer 2d, First Prize Senior Yearling Boar at P. P. I. E. PRICE, until Jan. 1, 1916, $40 each.

Number of well-bred young Sows, farrowed 1914, bred to Royal Pointer 2d. PRICE, $50 each.

7 Boars, farrowed October and December, 1914, by Hopland Premier, which, owing to lack of care at proper season, are smaller than should be. PRICE, $25.

HOPLAND STOCK FARM,

HOPLAND, CALIF.

Apply San Francisco Office, 1210 Flood Building.

Poultry Questions Answered.

[By Geo. H. Croley, President Federated Poultry Association of California.]

GOOD HENS MOLT QUICKLY.

To the Editor: How can I handle my hens to obtain a short and satisfactory molt? At one time I thought I knew a little about this matter, but the past year have read so many opinions that appeared in the poultry papers I am now thoroughly bewildered.—C. J., Santa Rosa.

[Eggs and feathers are both made from the food that is digested by the hen. The hen that has the capacity to consume and assimilate large quantities of feed is able to produce many eggs, while the hen that does not or cannot consume and digest the same amount of feed must naturally, under parallel conditions of care and attention, lay fewer eggs. The same rule applies to molting hens in this way: The hen that has the capacity to consume and digest abundant feed is able to quickly build up a new coat of feathers while the one with inferior capacity must take a longer time. In laying contests the record making hens often lay and molt at the same time. As a general rule, however, the heavy layer molts quickly and very late in the season; often sheds her entire plumage within a week or two leaving her covered with nothing but pin feathers or feathers that are only partly formed. Therefore it would seem that in order to possess a flock of hens that will molt satisfactorily it is necessary to keep only those that are great producers of eggs.]

PHEASANT RAISING.

To the Editor: Please furnish information regarding pheasant raising, their care, proper feed, etc.—B. C., Winters.

[It is seldom that a successful breeder of poultry or pigeons experiences any serious difficulty in raising pheasants. Many of the most extensive breeders rear their baby pheasants on dry mixed infant chick feed and depend on poultry scratch feed for the chief article of food for grown birds. We know of one successful breeder who prefers the ready-mixed pigeon feed. All of these are generally sold by feed dealers. Pheasants require green feed, grit, shell, and charcoal as well as ground bone. Bone is as necessary for growing pheasants as it is for young turkeys. We can supply a small booklet entitled Pheasant Culture that contains information valuable to beginners for 25 cents postpaid.]

POULTRY AND ORCHARD.

To the Editor: I intend starting a poultry plant in conjunction with a young orchard and wish information on the arrangement, dimensions, and design of pens and houses, also the number of birds it is advisable to keep in one pen. Can you recommend some standard work that will cover these points? Will you also give me some idea of the quantity of feed a chicken should have?—E. B. B., Orosi.

[Without considerable detailed informtaion as to the soil, condition of the land, etc., it is not practical to give specific advice on these subjects in this department where space is limited. We recommend our correspondent to read "California Poultry Practice" which is published by the Pacific Rural Press and in which, among many other matters of interest to beginners, a number of houses are described and illustrated.

The amount of feed a laying hen will consume in a year depends on the number of eggs she lays. Approximately 75 pounds of feed is required by a hen laying from 120 to 150 eggs per year.]

POULTRY NEWS NOTES.

[Written for Pacific Rural Press by Geo. H. Croley.]

The largest single shipment of turkeys ever made from the Imperial Valley was forwarded on December 17th. The shipment consisted of nearly 4,000 birds and were forwarded in four cars. Each car contained 80 coops with an average of about 12 turkeys to each coop.

The Stanislaus Poultry and Pet Stock Association held its annual meeting and election of officers recently at Modesto. E. H. Green was re-elected president of the body for a second term. Other officers chosen are: Vice-president, E. O. Trask; reasurer, L. J. High; secretary, J. D. Yates; assistant secretary, Ed. Whitmore.

The Pomona Valley Poultry Breeders' Ass'n voted to participate in the proposed summer school of poultry husbandry which it is anticipated will be held next June in Riverside.

The Santa Ana Chamber of Commerce donated to the Orange County Fanciers' Association as special prizes, trophy cups valued at $50. This is a recently formed association which has absorbed the Orange County Bantam and Aviary Club. C. A. Greenleaf of Santa Ana is president and Mrs. J. C. Parks of Orange is secretary.

The Tulare Co-operative Poultry Association reports an increase for November of about $300 over the total business of November, 1914.

During the first ten months of 1915 Kings County exported $60,000 worth of poultry, day-old chicks and eggs for hatching. The shipments of fowls and eggs were sent westward as far as Japan and East as far as New York, while baby chicks went to Oregon, Nevada, and Arizona.

TURKEY HENS PER TOM.

To the Editor: I wish to keep 20 hen turkeys the coming season. How many toms should I have? Is a young tom or an old one preferable for young hens?—Sub., Patterson.

Ans'd by A M Hart, Clements .....

[My experience shows that if the tom is strong and vigorous, he is sufficient for the 20 hens; otherwise, use two. One tom is generally mated with 15 hens. Use young toms with old hens and yearling toms with young hens.]

LIME OR PITCH FOR RATS.

To the Editor: Tell your correspondent to put air-slaked lime in the holes and runways. Rats' feet are damp, lime sticks to them. The feet smart and the rat licks his feet. His tongue smarts and he takes himself to new quarters. Fresh pine pitch will have the same desired effect. I have tried both with good results Jno. R. Longacre.

Fresno.

A deer skull and antlers imbedded in a tree were recently cut out and fixed up for a table by an Oakland man. It was found in Humboldt Co.



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Free Book "Chickens from Shell to Market" on application to Coulson Co. Petaluma Cal.

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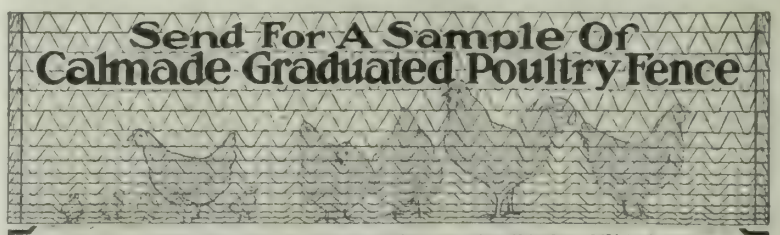
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Send For A Sample Of Calmade Graduated Poultry Fence



10 inches graduated in mesh from ½ inch to 1⅜ inches then 20 inches of 2¼ inch mesh, topped by 4½ inch mesh for the height of the fence.

The Fence Without a Sky Line

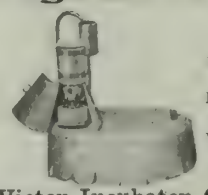
It is the most economical as well as the most practical of all poultry fences. It costs no more to buy than the old style poultry netting and costs much less to put up.

It is the only fence made with a bottom mesh smaller than one inch. It will turn the smallest chickens. Because of the straight line, continuous weave of "CALMADE GRADUATED" Fence, baby chicks won't hang in it, large fowls can't climb it.

"CALMADE GRADUATED" Fence will not slip at the joints nor unravel when cut. Uniform in weave and width. It unrolls flat as a board—it is easily put up and stretches without bulge, kink or bend on posts 16 feet apart. Learn all about these advantages and let your next fence be a "CALMADE GRADUATED." Write at once for free samples of wire used, free illustrated folder and name of nearest dealer.

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Standard Bred S. C. White Leghorn Cockerels, selected for Breeders Four months old, 12 per dozen; Yearling Hens, $12 per dozen.

Standard Bred White Plymouth Rock, Fishel and Owen Farm Strains Direct. Hens one and two years old $18 to $24 per dozen. Four to five months' old pullets, $18 per dozen. Selected Cockerels and Cock Birds, $5 each and up.

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The Best Game in a Thousand Years

Attractive---active---amusing---fascinating for young and old. Puts a check to checkers---2-3-4 play for the same pay. GAME complete with booklet "How to Play CORONA" postpaid. 25c, 50c, $1.

The Corona Co. 1054 MORTON AVE. LOS ANGELES, CAL.

Farm Poultry for Profit.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

PREPARING FOR HATCHING.

Preparedness is a good word, and it got quite a send-off the past few months by the former President T. R. of "strenuous" fame. Teddy has a vocabulary that expresses his feelings and this preparedness can be used in many places to good effect.

For poultry work we certainly need to be prepared ahead of time. If we are thinking of hatching we should first of all know about the eggs. Are we using our own? Then we must know and prepare weeks ahead for the proper condition of the hens, the male birds, and know how they are being fed, exercised, etc.

Caring for the Eggs.—Eggs that are to be hatched should never be laid on the side, until they go in the incubator or nest; they lie that way long enough. Put in a cool place where the temperature is not likely to be lower than 50 or higher than 70. Place in clean fillers in a dry airy place and keep covered. Some place them in bran, but they do very well if kept dry in the fillers. Dampness is not good for them, any more than changes of temperature. If it is handy to turn the case over, so that the eggs rest one day on the large end and next day on the small end it may be a little improvement, but I have done both ways and never noticed the difference. A good strong germ is not easily killed, but if the germs are weak, "handle with care"; if strong they will hold their own with proper handling.

Don't keep the eggs too long, and always remember that while eggs will hatch after being kept three weeks, you will get a bigger hatch and stronger chicks from eggs one week or under.

Circumstances sometimes force us to hold eggs over, but the fact to bear in mind is that the fresher the eggs, the stronger the chicks, all other things being equal.

Disinfected Incubators.—Now for the incubator. If you cleaned it thoroughly when you last used it and it has been in a clean, dry place it will need but a little spraying with creolin and water, a tablespoonful to a quart of rather hot water, and see that all parts get some. If the incubator has been laid away dirty, doors open and damp and dust in the air, it may be that mice have made it their home as fitting company for the germs and other gay fellows that are holding carnival, just waiting for you to light that lamp that means "hatching time for their broods, but death to yours." If this is the case, I will consider myself a poor teacher. But in case it is, open up the doors, take out all the trays, drawers, smoke pipes, and everything movable and examine them for mouse nests, spider nests, etc., then spray with the creolin and water, leave it to dry a day or two, then spray again if it does not smell right.

Clean your lamp burner, put in a fresh supply of good oil; never try to incubate with cheap oil. Some incubators will run with it, but the fumes are likely to get in your egg chamber and damage the hatch. Put a fresh, clean wick in the lamp and start it up, let it burn and run several days in case there is any smell, then spray again, and by the time that is done, not before, your incubator it fit for the eggs. There are more eggs ruined by dirty incubators than anyone knows of and it could all be avoided.

HOW TO RAISE CHICKS.

To begin with, we will take Black Minorcas. The chicks always come out black and white. Some people think because they have white on them they are not purebred, but that is a mistake. Also a great many people say they like Black Minorcas, but the chicks are so hard to raise that they do not buy them. Now I have raised a great many Black Minorca chicks and I cannot agree with these people.

But they have one weakness, and that is rain. Keep Minorcas dry and they will be as hardy as any chicks under the sun. Get them wet and they droop and wilt.

Now when one is working in the dark, as it were, one wonders why it is that one chick will not stand the same conditions that another will, but when we look at it in the right light we find it is merely a matter of temeprament. Human beings have not got anything on bird or animal life, for all have temperament.

We aim to keep Minorca chicks out of the rain until two months old, then they will stand anything that comes their way. Give plenty of good, wholesome feed, and milk if you have it, to make bone. Then you will have good, strong, rangy pullets that will lay you premium eggs from start to finish. No gambling about size or weight of Minorca eggs, or the number they lay; they are there with the goods.

Poultry Breeders Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word

ROOFDEN CHICKS are hatching every week. When do you want yours? White Leghorns that are worth while, by hundred or thousand. Black Minorcas, beauties, great layers of big eggs, and a hardy strain. Rhode Island Reds, the breed for meat and winter eggs. We can supply you with prices that are right. Ask us. Circular free Roofden Poultry Ranch and Hatchery, Campbell, Cal.

ALL KINDS OF BREEDING and laying hens, roosters and pullets. Petaluma incubators, new and used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minorcas, Buff, White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards, 2550 San Pablo Ave., Oakland, Cal. Closed Sundays.

WE LEAD IN CAPACITY—THE SANTA CLARA VALLEY HATCHERY AND POULTRY RANCH—We can serve you with the best the Valley can afford, 8 varieties of baby chicks. White leghorns in 1000 lots a specialty Your correspondence solicited. Information cheerfully given. Route 6, box 336C, San Jose, Cal.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

BABY CHICKS—All sturdy youngsters from good stock and hatched right. Rhode Island Reds. Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. Lay most when prices highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trapnested and bred for heavy laying. Eggs, chicks stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

WHITE PLUMAGE POULTRY FARM and Hatchery. Sells day-old chicks from healthy, vigorous breeders. White Leghorns at $10 per 100, $90 per 1000. Barred Rocks and Rhode Island Reds at $15 per 100. We sell the Victor Incubator and Brooder. Circulars free. H. A. Schlotthauer, Exeter, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

MAHAJO WHITE ROCKS—Incubator Chicks, $25 per hundred. Hatching Eggs $10 per hundred. The best all-purpose fowl for farms and the most profitable one. Lay well and consistently; best for capons and broilers. Beautiful snow white plumage. Gentle dispositions. Colonize them in your orchard and reap double profits. Send for catalogue. At Panama-Pacific Poultry Show were awarded sweepstake on Cock (295 Egg type), as best utility bird in show—200 Birds competing. Mahajo Farm, Box 597, Sacramento, Cal

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 398, Los Gatos, Cal.

MODEL POULTRY FARM—White Leghorn Specialists We are now booking orders for Hatching Eggs, Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired Heavy Winter Layers. W. C. Smith, Prop., Corning Cal.

CHICKS—HATCHING EGGS—Settings, 100's, 1,000's—from our thoroughbred heavy-laying Rhode Island Reds and White Leghorns Prices reasonable. Hatched right in our $60,000.00 Hatchery at PEBBLESIDE POULTRY FARM, Sunnyvale, California.

BROWN LEGHORN, WHITE LEGHORN day-old chicks that are well-hatched and strong, from healthy vigorous breeders. SAN JOSE HATCHERY, 373 Meridian Road San Jose, Cal. "Chicks well hatched are half-raised."

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POULTRY FOR SALE Indian Runners. Prize stock. Baby ducks, $18, 100. Hatching eggs, 75c doz. Choice White and Buff Orpington cockerels, 10 months, $3. Nutman, 295 Page St., San Jose.

WHITE ROCK BABY CHICKS from good winter layers. Booking orders now. Early hatched chicks make early Fall layers. Few Hoganized cocks for sale. Mrs. J. B. Tupper, Ceres, Cal.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

BARRED ROCK COCKERELS—$2.50 each. Am booking orders for Rhode Island Red and Barred Rock chicks for February, 15c each. G. L. Hawley, Madera, Cal.

HATCHING EGGS from Hoganized S. C. W. Leghorn two-year-old hens, $1 per setting, $5 per 100 Also breeding hens, $1 each. Allendorf Egg Ranch Kerman Cal

PERFECTION FIRELESS BROODERS—There is none better. Simple, inexpensive, easy to operate. Free trial. Ask for particulars. H. R. Teal, Willits, Cal.

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WHITE LEGHORN BABY CHICKS that are hatched right, from good stock. Order now for spring delivery Mrs. G. Logan, Morgan Hill, Cal.

BUFF ORPINGTON COCKERELS—Fancy and Utility. Good in type and color, weighing 9 to 11 pounds. Mrs. C. M. Smythe, R. 3, Stockton

ORPINGTONS: BUFF AND WHITE—Black Minorcas and Carneaux pigeons. Cockerels ready for service. Susan Swaysgood, R. 2, Pomona, Cal.

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RHODE ISLAND RED BABY CHICKS and Eggs. Heavy laying strain. Send for circular. Rosedale Ranch, R. 1, Hayward, Cal.

BLACK MINORCA, R. I. Red, Buff Orpington Cockerels. Eggs for hatching. Mrs. R. A. Holdridge, P. O. Box 282, Dixon, Cal.

TRAPNESTED LEGHORNS—White and Buff Stock. Eggs, chickens. Arthur R. Schroeder, Box 179R, Mountain View Cal.

TRAPNESTED S. C. RHODE ISLAND REDS—Eggs and Fine Breeding Cocks. Wm. Larm, 3915 39th Ave., Oakland, Cal.

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BLACK MINORCAS—Cockerels. Reasonble. Chester Fosgate, Quito Road, Campbell, Cal.

WHITE RHODE ISLAND COCKERELS—$1.50 each. A W. Munm, Route 5, Sacramento.

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LEADING RABBITRY IN AMERICA—Flemish Giants and New Zealands. Cut your living expenses. Catalogue free. Empire Rabbitry, Empire, Cal.

BELGIAN HARES—Young stock for sale. Hurd Bros. St. Helena, Cal.

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MAMMOTH BRONZE TURKEYS—Imported from across the continent, Lowell, Mass. Ancestry sired by 45-lb. Tom and 28-lb. hens; prize winners of Boston show and Madison Square Garden Show, New York. For particulars apply to Mrs. Chas. Dugan, Bishop, Inyo Co., Cal.

MAHAJO MUSCOVY DUCKS—$5.00 per trio. Every farm should have a few—beautiful, quiet, gentle; good layers of extra large eggs; splendid for table; drakes weigh ten pounds. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

MAMMOTH BRONZE TURKEYS—THE BEST IN THE WEST—Extra special prices. Further information cheerfully given. Write now to secure best birds. Geo. A. Smith, Corcoran, Cal.

HART'S BRONZE TURKEYS—Vigorous young stock Also large yearling hens, $5 each. Eggs in season. Circulars free Albert M Hart Clements, Cal

SEVEN YOUNG TURKEY HENS, One Gobbler—Mammoth Bronze selected stock, $25 f. o. b. for lot. S. C. Reed, Acampo, Cal.

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The Home Circle Page of the Pacific Rural Press

MRS. BEST'S BULLETIN.

My dear Friends:

While chatting with you of the city's displays and shopping, please remember that my one wish is to be interesting. That is why I report the frivolous as well as the practical. If there were no variety of things, there would be no such thing as Taste, and there would be no thrill in deciding what we like, and it would be a dull old life. So I babble of everything as I come to it, and while it is still novel. For as Shakespeare says:

"The rose is fairest when 'tis budding new."

Well, here are some things that appear to be, more or less, "budding new."

I am waiting for a good rainy day and the first enterprising fashionable to appear in the new oiled silk rain coat. It is so light and transparent that the texture and color of the gown can be seen through it. At first glance one must resemble a deep sea fisherman. There is no question, however, that the coat will turn any rain that ever fell, or any spray that ever blew.

A great welcome is being given the wool caps to match sweaters. These caps are especially adapted for seasonable wear by schoolgirls, while for hikes or automobile rides they are a boon generally: and cheap.

Fur keeps to the fore (I claim to be guiltless of any groping toward a pun). It is best described as "nifty," the effect of it around shoetops, hats, collars, sleeves and skirts. The shoetop use of it is possible because of the high skirts being worn.

Going back to raincoats for a moment, there are some very natty ones in gay-colored rubber or "gossamer" cloth that are reasonable in price, and new in cut.

The gray suede glove, which is very serviceable, especially at this time of year, is in favor again. It is dressy always.

There's a laugh for the children in Charlie Chaplin jumping jacks (15c) being sold on the sidewalks They are made of lithographed cardboard, and the eyes move with the arms and legs.

The beau market is being heavily bombarded this winter by the confectionaries with art candy boxes. On the tops of them are handpainted, sometimes very elaborate, works of art. Often the boxes are priced at twice the cost of the best candy they can hold.

A dressing table tray and set of iridescent-glazed chinaware at $5 was a novelty to catch the roving eye.

When I see those rather mischievous silk stockings with the dark feet and flesh-colored tops, or other light colored tops, I admit that they will give a startling effect. There is no doubt of it.

A new walking coat that gives an atmosphere of decided tone is of dull green, wash leather. Moreover, it should last forever. In the East it would be in favor as a skating jacket.

A new and snappy-appearing boot for misses comes in two shades of tan, one color for the upper as a whole, and the other for the toes and reinforcement.

Combing jackets of various kinds of toweling continue to receive attention, and the price seems to vary with the expense of the embroidering on them.

In closing I will say that a Celtic lady friend of mine with twinkling eye has just wished me a "Happy New Year and may your combings be less." Wishing the same to all,

I am faithfully,

ROSABELLA BEST.

(Note—Readers wishing information from Mrs. Best, care of the Rural Press, will receive a reply if they enclose a stamped addressed envelope.)

SPANISH BEEF STEW.

(This Week's Preferred Recipe.)

In this California dish, popular wherever it is known, a most satisfying culinary result is achieved. Cut 1½ pounds of cross rib beef (an economical and very valuable part) into small pieces. Have a few ounces of suet, and also cut this up and fry it so that you will render about 4 tablespoonfuls of fat out of it; take this hot fat and brown or sear the meat in it, using the stewpan you are going to cook the meat in; at the same time cut up and fry an onion with it. Now sprinkle four tablespoonfuls of flour into the stewpan; add 1 pint of dry kidney beans that have been soaked in water over night, a 5c can of tomato sauce, 1-3 clove of garlic, and cover all with three pints of water. Cook three hours slowly. For this stew boiled rice is a good side dish.

A MOTHERS' PROGRAM.

Sometimes at a meeting of mothers' clubs in the schools there is some difficulty in fixing upon just the right kind of program to make the session what it should be. Here is one program that went very well:

Instrumental duet
Report reading
Vocal duet.
Address, "The Morals of Children"
A travel talk
Vocal duet.

Another meeting was devoted to music and an informal discussion, the subjects being "What Failures Do Parents Find in Schools?" and "What Failures Do Schools Find in Parents?" This makes it almost a debate, as there is plenty of room for argument on both sides, and not unprofitable argument at that.

Where the parents are being entertained by the children, the program that follows may furnish some hints: song, recitations, calisthenic exhibition, song, French vineyard dance by girls, recitation, duet, chorus, recitations, song, pantomime, piano duet, chorus.

A fine way of securing co-operation between the pupils and parents and teachers is to stimulate interest by presenting a handsome pennant to the class bringing out the most parents to a Mothers' Club affair.

THIS WEEK'S BEST HOUSEHOLD HELP.

To provide children a breakfast they won't become tired of—give them chocolate when they become tired of milk. It is as cheap as milk and they will like it as long as you can give it to them. Use the prepared ground chocolate, 1 level teaspoonful of chocolate to each cup of milk, adding also a pinch of salt and 1-3 teaspoonful of sugar to each. Put this on the stove, let it come to the boiling point and serve.

Chocolate is also a much cheaper and more nourishing breakfast drink for adults than coffee.

PEACEABLE HISTORY.

The California State Board of Education will give prominence to peace, rather than prominence to war in California text books hereafter. In the history of the fifth and sixth grades, now being prepared, the Board demanded more about the accomplishments of Thomas A. Edison and Goethals, and not so much about the fighting ability of General Grant.

A COUGH RELIEF.

It is the season of the year when coughs and colds are encountered. A good home-made cough relief is made by taking three tablespoonfuls of whole flaxseed and one pint of seeded raisins, chop the raisins and mix them with the flaxseed. Add three pints of water and cook down to a quart. Add the juice of a large lemon to the mixture and sweeten to taste. The children will take this cough remedy without any coaxing, once they try it.

Officer!—May—Carpets are curious things, mamma. Although they are bought by the yard, they are worn out by the feet.—Chicago Herald.

MEET THE LITTLE PIG THAT STAYED AT HOME!

Since this picture arrived in the office there has been by common choice a new name selected for it: **"The Little Pig That Stayed at Home."** For here, behold it, with everybody else in the Pig family gone away, receiving from its kind owner the consolation earned by lingering devotedly in the old homestead. A bright little pig, too, for a month old—since it understands the bottle as well as a human baby a dozen months old. Anyone that had a little pig like this, as pretty and as precocious, would feed it from a bottle, too, and let it stay at home as long as it cared.



"Helping Mother Out."
(From Fair Oaks Ranch, Willits, Cal.)

DOMESTIC SCIENCE WITH A VENGEANCE.

The "ring of iron" round Germany has tried the efficiency of that efficient nation as never before. So far it has survived and its emergency education of its people in household science and economy has done part of the wonder.

In Berlin much of this education has been through the Central Committee of the Housewives' Association, which besides conducting a permanent exhibition of the hundreds of substitutes for ordinary luxuries and necessities, also gives lessons in their use; and courses in buying, mending, cooking, diet, hygiene, etc.

Some of the economies discovered are: a sort of celluloid underwear that can be washed without going to the laundry; composition cooking vessels instead of copper; twine of paper instead of cotton; an artificial rubber instead of the real thing, for baby bottle nipples, diapers, etc.; iron pipes gilded instead of brass curtain rods, paper collars, cuffs, handkerchiefs and tablecloths.

DON'T SLIGHT THE MILL.

Some people treat teeth as if they had been provided them through an oversight. They eat without regard to chewing what they eat.

If they have any thoughts about this it is likely that they suppose they are saving wear and tear on their teeth and cheating the dentist. What they are doing, though, is making friends with the doctor. They are much like owners of a mill through which they pass the grain without grinding, and then swallow it as if it had been made digestible by the mere virtue of passing through.

Chew your food well. Unchewed food makes a horse sick, and it will make a man sick or a child sick. Besides, the digestive organs for all the struggle they make can extract the nutriment from but a small portion of the bulk of what is eaten, and loss results thereby. Your brain and body is kept up to its highest efficiency by the food which you digest, but the food can not do this if it merely parades, so to speak, through the alimentary canal.

The opposite mistake is made when food too fine forms the whole menu. The mechanical part of chewing is not all—there must be chewing for the sake of mixing the saliva. So it were best if every meal had some coarse food with it that required the services of the mill. In that way, the fine food and the coarse are properly made ready for digestion by the teeth and saliva.

FIGHTING A PEST.

The twenty-five million prairie dogs that inhabit the pasture ranges of New Mexico and Arizona destroy enough grass to support a million cows or five million sheep. Therefore the government, acting on an appeal by the stockmen, has employed men to wage a systematic warfare of extermination upon the little creatures. But it will be a long war, for the enemy is widely distributed and deeply entrenched.

WHEN MANDY STARTS TO WASH.

When Mandy sets th' b'iler on,
An' hustles up th' fire,
An' starts a-stirrin' up of starch
An' h'ists her sleeves up higher,
W'y, then you know th' war is on,
It ain't no time to josh.
Th' on'y thing to do is—git,
When Mandy starts to wash.

Cold beans an' bread an' coffee's all
I git to eat that day,
An' 'tain't no use to stay eround
An' git in Mandy's way
Fer then she'll set me hard at work
A-rinsin' out—ker-splosh!
Ye can't stay round th' house an' shirk
When Mandy starts to wash.

An' so I kinder hem eround
'At my terbacker's out,
Fer down at Job's (th' corner store)
Th' boys all set about
A-lookin' jest as sheepish-like
An 'chawing crackers—Gosh!
I ain't the on'y shiftless one
When Mandy starts to wash.

'Nen I go amblin' down th' road,
A-feelin' sneaky-like,
To jine in with th' other boys
'At's sorter out on strike;
A feller can't help feelin' mean
'S long as he can't josh,
Th' on'y thing ter do is—git
When Mandy starts to wash.
—Lippincott's.

MRS. JINKS STARTS A LAWN.

By F. Fairfield.

When Jim and I settled down, retired-like, in a bran new home, the first we'd ever had of our own, the builder left us with a front yard full of kindling, plaster, dry bunches of weed, pieces of tar paper, tin, wire and a sense of desolation. Right then I said we'd have a lawn. It'd look better.

There was a Jap came riding by on a bicycle and I hailed him. I says, "I want a lawn that will last me a life time. How much will it cost?"

He grinned, and said, "Thirty-five cents hour."

"That would bankrupt me," says I, "inside of a month." But then I remembered it meant work by the hour, not lawn by the hour. If he didn't take a lifetime to make it, the Jap could get a lawn finished inside of ten or twelve dollars. "Go to it," I said, "but you want to look sharp, or your first hour will be your last 35 cents."

Did you ever see a Jap use a rake? He doesn't use it to rake with—not the way I see People do. He coaxes it over the clods as if apologizing for the rake pushing between them. There's nothing violent about it. He goes at it mincingly. He'll stay on one spot until the ground becomes about the consistency of brown sugar. He "plays" it with the rake. I watched, and I know. It reminded me of combing a baby's hair. This one did it that way, but of course it was after he'd picked all the sticks and stones and barrel hoops off the lot, and had spaded it up. I'm speaking of the second day, I am. When he got nearly through raking I said if he intended to give it any more finishing touches I'd fetch him out a camel's-hair brush to do it with. But he didn't understand me.

I ought to have stated that there was about two loads of stale, dark, rusty-looking, dry manure turned over into it when it was being spaded, although I'm sure we could have afforded the fresh article.

He went and got some grass seed, too, and pounded it into the ground until the ground was pretty hard—just after he'd fined it so nicely! He sprinkled it and said he'd be back after the grass began growing and the bill for the manure and seed would be about $9. I hadn't thought about paying for extras. I supposed he was furnishing all that. So I paid him for his time and told him not to come back, for he might take a notion to apply gold leaf to the lawn and I wouldn't know how much that'd come to until too late.

When he'd gone, and I'd paid the bill for the extras, there was a man came with a wheelbarrow full of regular manure, and I stopped him and bought it and had him put it all over the top of the lawn like I'd seen in some places.

There was a lovely little rain soon, and you could just see that lawn rise up out of the ground. Every day it looked prettier to me. It also looked pretty to the dogs of the neighborhood, and the big ones would sink up to their ankles in it. It's funny, but I never saw a dog in our yard until it was cleaned up and carpety. I suppose they all felt like Queen Elizabeth walking on Sir Walter Raleigh's cloak of velvet and gloried in it. Some of them liked it so well that they romped in it.

When most of it was about two inches high I could see we were going to have about eleven varieties of grass. "Anything to escape monotony," says I. But my brother visited us and he knows grass. Seeing my lawn, it was his cue to point out which was mustard and which was dandelion, and which was dock, and which was wild carrot and which was tar weed and which was thistle, milkweed, wild oats and so on. He said it was from the manure that had been put on top—it was too new and the seeds hadn't rotted. The grass, he said, would have a hard time struggling through if I didn't pull out the weeds.

Well, that's what I did between rains—pull weeds. I figure that each weed had to be pulled three times, since as fast as I'd pull it another would pop up in its place. I was sorry I ever started doing that, but my brother told me it was best unless I was trying for an arboretum. An arboretum is a plantation of all kinds of trees and shrubs, and hardly more than one of each.

Finally I got the lawn looking free of rare and exotic vegetation; also looking sparsely upholstered like a Mexican dog. I think there was between four and five blades of Australian rye grass and one authentic little patch of white Dutch clover.

Jim, my husband, came out one day and asked if he could help. He'd been passive. He hadn't let the lawn get his goat. A man who's spent his whole life at sea and in boarding houses doesn't take a lawn seriously. But he stood there stuffing tobacco in his pipe and asked if he could help me.

"Yes," I said, "go get the buttonhole scissors and trim the edge of this lawn, and then put a glass tumbler over this sprout. I think it's another blade of grass."

PICTURES.

The Home Circle editor will consider publishing odd pictures of farm pets if the pictures are good. Send with a stamped and addressed envelope for reply.



"John"—

"We are almost out of chocolate. Get a 3-lb. can of Ghirardelli's Ground Chocolate. Don't buy the bulk kind."

And John "obeyed orders" cheerfully, for of all the members of the household, John, the "boss," likes his breakfast cup of Ghirardelli's the most.

He knows what a delicious, sustaining beverage it is, what wonderful cakes, puddings and cookies his wife makes with its aid. He also knows that it gives the highest food value for the man who works hard, for the woman who must always be well, for children on the grow.

Order from Your Grocer Today

Ghirardelli's
The Only
Ground Chocolate

In ½-lb., 1-lb. and 3-lb. hermetically sealed cans.
There's a double economy in buying the 3-lb. can.

D. GHIRARDELLI CO.
Since 1852 San Francisco



"Let 'er rain"

Whatever the weather *outside*, a good oil heater makes *sunshine within.*



Perfection Oil Heater

Inexpensive to operate—easily carried from room to room. Smokeless and odorless. Dealers everywhere. *For best results use Pearl Oil.*

Standard Oil Company
(California)

The Markets.

San Francisco, Dec. 29, 1915.

WHEAT.

The recent advance in primary markets has caused some response here this week, northern bluestem and the better grades of red wheat being slightly higher. Local business, however, has been extremely dull through the holidays.

Cal. Club, ctl.	$1.70 @1.72½
Northern Bluestem.	1.80 @1.82½
Northern Club	1.72½ @1.75
Northern Red	1.65 @1.80

BARLEY.

Spot barley has eased off a little, with some sales below the figures quoted, but there has not been enough business to warrant a reduction in the quotations, most offerings being steadily held. Future business also is dull, with prices nominal.

Shipping, ctl.	$1.30@1.35
Choice Feed, ctl.	1.30@1.32½

OATS.

Business has been limited to small jobbing sales of feed, both demand and spot supply being light. Red feed is rather easy, as some off-grade stock is coming in and is hard to dispose of.

Red Feed	$1.30@1.35
Red Seed	1.45@1.65
White	1.35@1.40

CORN.

Eastern yellow has been marked up a little, following a stiffening in primary markets, and any California yellow that is ready for market should bring about the same figures. Other varieties are in very good demand for feeding in the country, but trading here has not been active for the past fortnight.

Eastern yellow, ctl.	$1.70@1.75
Milo Maize	1.35@1.40
Kaffir	1.65@1.70
Egyptian	1.25@1.55

BEANS.

Business is very quiet on all grades at present, and while a revival is expected early in the month it is impossible to make predictions. There is a sufficiently confident feeling among holders, however, to keep prices very firm, and large whites and limas are held at a slight advance. Horse beans in marketable shape are very scarce, and prices have stiffened greatly.

(On wharf, San Francisco.)

Bayos, per ctl	$5.00@5.10
Blackeyes	3.50@3.60
Cranberry Beans	5.10@5 20
Horse Beans	3.25@3.50
Small whites (south)	5.60@5.70
Large Whites	5.60@5.75
Pinks	4.25@4.30
Limas (south)	4.60@4.70
Red Kidney	6.50@6.75
Mexican Reds	4.50@4.65

SEEDS.

Prices are steadily maintained as before. The demand has been somewhat less active this week, and it is believed that the principal movement in most lines is over for the present.

Alfalfa, per lb	18 @19 c
Melilotus Alba	30 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	4¼ @ 4½c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Sudan Grass	40 c

HAY.

A little more hay has come in during the last week, but shipments are still much lighter than a few weeks ago. There is a heavy demand for stock hay in the country, as a great deal of feeding is being done, and little of this grade is appearing here. There is some local demand, and the result is an advance in the price here. Most of the offerings are of medium grades, and with only a moderate demand through the holidays, prices are unchanged. Alfalfa shows less firmness, with better supplies. Dealers predict a better demand here in the near future, and the large movement to country points has greatly reduced the supply.

No. 1 Wheat	$12.00@15.00
No. 2	10.00@11.50
Tame Oats	10.00@16.50
Wild Oats	8.00@11.50
Alfalfa	10.00@14.00
Stock Hay	6.00@ 9.00
Straw, per bale	.25@ .40

FEEDSTUFFS.

Prices on all lines stand as last quoted. Local trading has been subject to the customary holiday curtailment, but there is a good consuming demand through the country, and more activity here is expected before long.

(Wholesale prices per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$20.50@21.50
Alfalfa Meal, per ton.	18.00@20.00
Alfalfa Molasses Meal per ton	21.00@22.00
Bran, per ton	25.00@26.00
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00@25.00
Cracked Corn	38.00@39.00
Middlings	32.00@33.00
Rolled Barley	26.50@27.50
Rolled Oats	29.50@31.00

VEGETABLES.

The market for all lines of garden produce has been exceptionally dull since the holiday, and while some improvement is expected toward the end of the week, prices so far have been rather inclined to easiness. Offerings in many lines, however, are limited, with much of the stock coming from the south, so quotations show no great change. Rhubarb has come in rather slowly the last few days, and cleans up well at the old figures. Southern peas and beans are also steady, with limited supplies. Tomatoes receive little attention, and 90c is about the best figure at present. Celery and lettuce are doing fairly well.

Sprouts, lb	3@ 4 c
Rhubarb, box	$1.00@1.25
Peas, southern, lb.	.08@ .10
String Beans	.08@ .12
Lima Beans	.08@ .10
Peppers, bell, lb	.05@ .06
Tomatoes, L. A., crate	.75@ .90
Eggplant, lb	.05@ .07
Celery, crate	2.25@2.50
Artichokes, doz.	.50@1.00
Lettuce, small, crate	1.00@1.25

POTATOES AND ONIONS.

Both potatoes and onions from the Delta district are beginning to clean up, and prices show a corresponding firmness. Potatoes from outside points, however, are in ample supply. Sweets are higher, with diminishing stocks, and onions are beginning to come in from Oregon at higher prices.

(On Wharf.)

Oregon Burbanks	$1.25@1.50
Salinas Burbanks	1.85@1.90
Delta Burbanks	.85@1.25
Sweet Potatoes, ctl.	1.30@1.50
Onions, Delta, ctl.	.75@1.00
Oregon	1.00@1.50
Garlic, per lb	10@12½c

POULTRY.

Large arrivals of turkeys expected for the holiday failed to show up, and the market advanced to extreme figures before the close. Since then the usual reaction has been noted in all lines of poultry, lack of demand causing a drop in prices of broilers and fryers, as well as turkeys. The latter, however are in some demand for New Year, and hold up fairly well.

Turkeys, dressed, young	24@28c
Old	20@22c
Live Turkeys, old, lb	18@20c
do, young	19@21c
Broilers, 15 lbs to doz. and less, lb	30c
do, over 15 lbs. to doz.	23@25c
Fryers	21@22c
Hens, extra, per lb	16@17c
Small	15@16c
Smooth Young Roosters, per lb.	17@19c
Squabs, per doz	2.00@4.00
Geese, per pair	2.25@3.00
Ducks, young, lb	15@16c
Old	13@14c
Belgian Hares	9@10c

BUTTER.

A fair holiday demand and shipping requirements stiffened the market up a little toward the close of last week, and while there was a slight reaction Monday, heavy sales since then have cleaned up current offerings and caused an advance on all grades.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	27	27	—	26	28	28
Prime Firsts	25	26	—	25	26½	27
Firsts	24	24	—	24	25½	25½

EGGS.

The market continues to show abrupt fluctuations, as arrivals vary greatly from day to day, while extras move slowly at the higher figures. Offerings were quite liberal before the holiday, and prices showed some reduction in spite of the extra demand. Since then sales have been only moderate, while arrivals are quite large for this time of year.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	40½	38	—	39	36½	34½
Sel. Pullets	31½	29½	—	29	29	27½

CHEESE.

Y. A.'s keep all the firmness noted last week, offerings being light, while flats are moving slowly and show another decline. Monterey cheese also has reacted from the recent advance.

Y. A.'s fancy	17 c
Fancy Calif. flats, per lb.	14½c
Calif. Cheddar flats, per lb.	Nominal
Monterey Cheese	17@18c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	28	28	28	—	28	28
Eggs	38	37	35	—	35	35

DECIDUOUS FRUITS.

Pears are cleaned up, and persimmons nearly so. Only a few cranberries are left, and with a fair demand they are firmly held. Apples are steady at unchanged prices, the local demand being rather less active than last week, though there is some shipping inquiry and the market is in fair condition.

Cranberries, Eastern bbl.	$11.50@12.50
Oregon, box	3.50@ 3.75
Apples, Newtown	.75@ 1.25
Pearmain	1.00@ 1.25
Oregon Spitzenbergs	1.50@2.50
Lady Apples, box	2.00@ 2.25
Persimmons, box	.75@ 1.25

DRIED FRUITS.

There is little feature in any department of the dried fruit market at present, the only quotable change being a slight narrowing of the range on apricots, in the direction of higher prices. As this fruit is almost entirely cleaned up, the change is of little interest to most growers. Apples receive little attention. In other lines, though little trading is to be expected until after the inventory season, there appears to be a better demand than usual for this time of year. The trade throughout the country is believed to have little stock, as early purchases were light, and holiday consuming demands turned out well. It is accordingly believed that, when inventories are finished and the actual paucity of supplies is fully appreciated, there will be a renewed demand from domestic buyers. Figs are in good demand, with light offerings of foreign stock, and large prunes are much in demand. Peaches are getting fairly well cleaned up, and there will no doubt be considerable demand by spring. The New York Journal of Commerce says:

"The light buying which has featured the market for several days continues, with purchasers in practically all quarters displaying very little interest in the general situation.

"It is the general opinion among the New York brokers that the future California prune market will exhibit a much better feeling after the turn of the year, when buyers are expected to begin purchasing once more. In anticipation of this movement the larger packers have refused to dispose of any of their stocks at low prices."

Apples	6½ @7½ c
Apricots, per lb.	9 @12 c
Figs, white	5 @6 c
Black	3½c
Calimyrna	8 @10 c
Prunes	4¾ @6 c
Peaches	4½ @6 c
Pears	4 @7 c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6¾ c
Thompson Seedless, No 1, 16 oz	7¾ c
Sultanas, 16 oz.	7¼c
Loose Muscatels	5½ @6¾ c
London Layers, 3crown, 20-lb. box	1.25
Imperial Clusters, 6-crown, 20-lb. box	2.50
Bulk, layers, 50 lb. box	2.75

CITRUS FRUITS.

In spite of a slight reduction in the price of California navel oranges on the eastern markets, the returns are very good and the larger part of the crop shipped before Christmas has brought better prices than has obtained for the same period for several seasons past. On the New York auction, Monday, Dec. 27th. California navels averaged from $1.75 to $3.15 per box. Lemons sold for $2.55 to $3.80 On the same day the Boston market averaged higher than the above prices, while Chicago averaged $2.55 to $3.25 for navels, and $3.50 to $4.25 per box for lemons.

Up to Dec. 27th there had been shipped from southern California 1005 cars of oranges and 781 cars of lemons; from Tulare county 3370 cars oranges and 55 of lemons; from northern California 512 cars of oranges.

Oranges have been in very good demand locally all week, with the retail trade stocking up freely, and prices in general are well maintained, though only fancy lots will bring the top figures. Seedling grapefruit also is slightly easier, with ample supplies, though there is quite a good call.

(Wholesale prices, San Francisco)

Oranges, Navels	$1.50@2.75
Tangerines	1.50@2.00
Grapefruit, new crop	2.00@2.50
Lemons, box	1.50@3.75
Lemonettes, box	1.50@1.75

HONEY.

Water white grades are in strong demand, and any available supplies should find ready sale at good prices. Of other than fancy grades, however, the local trade has rather more than enough for current needs, and

Special Live Stock Market Report.

The market here has been decidedly dull the past week on account of the holidays, consumption of beef reaching the lowest mark for many years. There are quite a few cattle being offered now, attributed to the scarcity of hay in some parts of Nevada and the usual offerings from the feed lots at this time of the year. While a few cattle may be bought reasonably, there seems to be no reason for cattle owners to be at all uneasy about the market as cattle are bound to be more or less scarce in March and April. Supplies piled up in the yards this week on account of the short consumption but packers are not apt to kill heavy enough to further break the already weak market.

Sheep and lambs are showing a little more strength, but nothing like the livestock market justifies. Stubble lambs are practically all cleaned up now and except for the supply in Nevada and California feed lots. Packers will have to look to Utah and Idaho for their lambs.

Hog receipts eased up some both here and in the Eastern market. An advance of 30 cents was recorded the first two days this week on the Chicago markets and receipts were smaller. Offerings of light hogs on the local market fell off and an eighth-cent raise is noted on 150 to 225 pounders as a result. Hogs under 150 pounds are not desired and last week's price remains unchanged. Packers who are killing for immediate consumption are not paying the raised prices, but are on the contrary shaving last week's quotations from ¼ to ⅜ cents. Receipts are always short during the holidays and buyers are uncertain whether the present light offerings will continue after the first of the year or not. If they do prices will be marked up, but if they start heavy again, prices may suffer somewhat. In view of the price of grain and the prospects for a decided improvement in the February and March market farmers should be able to realize a nice profit by holding the light weights in the home feed lots for the present.

WOOL.

Prices remain the same as last week with plenty being offered by city holders, but none being bought. Wire reports from Boston say, "Look for good activity after January 1, particularly in good, clear wool."

with no particular demand for shipment such stock is hard to dispose of.

Water White, comb	13@16 c
Amber	7@12 c
Water White, extracted	7@ 8 c
Light Amber	3@ 4 c
Dark	2@ 2½c

NUTS.

The Almond Exchange closes the year with its stock fairly well sold out, and a demand rather better than was expected at this season. Offerings in other quarters also are of no greater importance, and everything should be easily cleaned up in the spring. California walnuts are closely cleaned up, and importers report heavy sales of Manchurian nuts, some of which are of attractive quality.

(Prices f. o. b. San Francisco.)

Almonds (1915):	
Nonpareil	15 c
IXL	13½c
Ne Plus Ultra	13 c
Drakes	11 c
Languedocs	11 c
Walnuts(1915):	
Budded, per lb.	17½c
No. 1	14 c
No. 2	11 c
Jumbo	17 c

LIVE STOCK.

A slight change of classification is noted on hogs, but values stand about as before, 5¾c being still the top on light stock. Large, heavy hogs, though not wanted by the butchers, are readily taken by packers.

Steers, No. 1	6¾ @7 c
No. 2	6¼ @6½c
Cows and Heifers, No. 1	5¾ @6 c
No. 2	5¼ @5½c
Bulls and stags	4 @5½c
Calves, light	8½ @9 c
Medium	7½ @8 c
Heavy	6½ @7½c
Hogs, grain-fed:	
100 to 150 lbs.	5¾c
150 to 240 lbs	6⅜c
240 to 300 lbs.	6 c
Prime Wethers	6¼ @6½c
Ewes	5 @5¼c
Full Wool Lambs	8 @8½c
Fall Shorn Lambs	7½ @8 c

DRESSED MEATS.

Steers	9¾ @10½c
Veals, large	12½ @13 c
Small	13 @14 c
Prime Wethers	11½ @12 c
Ewes	13 @14 c
Hogs	9½ @10 c

WOOL.

Buyers still take little interest, and there has been practically no movement in the country of late. Reports from Oregon estimate the quantity remaining in that State at not over 500,000 lbs., which is firmly held for higher figures than have yet been offered. Advances are reported in most foreign markets.

(Prices paid in the country.)

Sacramento Valley, lb.	16 @17 c
Southern, year's staple	13½ @14½c
Six months	12 @13 c
San Joaquin (defective)	9 @10 c
Northern, free	10 @15 c
S'thern Mountain, free	11 @12 c
Tehama Co., free	12 @14 c

HORSES.

The local market presents practically nothing of interest this week, continued offerings of used stock by drayage firms retiring, etc, giving rather a depressed air to the market. There is a demand here, however, for attractive delivery horses, as well as for heavier stock of the more popular types, and a good many country buyers are coming in.

(Approximate values at San Francisco; based on auction sales.)

Drafters, 1700 lbs. and up	$200@225
Drafters, 1550 to 1650	150@200
Chunks, 1350 to 1500 lbs.	150@175
Wagon horses, 1050 to 1350 lbs.	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@ 75
Farm Workers	50@100

GROCERIES.

China rice has advanced and other imported grades are firm. Condensed milk of all brands are firmly held at the recent advance. Canned tomatoes are strong, with an upward tendency, and lard substitutes are expected to advance. Many lines of soap are advancing. Flour is very firm, with a large export business. Sugar is unchanged, but quite firm. (Wholesale prices, San Francisco.)

Flour, Family Extras, per bbl.	$6.00@6.40
Sugar, granulated, per lb:	
Cane	6.65c
Beet	6.45c

Ground Carbonate of LIME

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E. J. Chubbuck Co., Dept. B San Francisco, Cal.

WEEKLY BUTTER AVERAGES.
Cents per pound for Extras.

Week Ending	San Francisco 1914	San Francisco 1915	Los Angeles 1914	Los Angeles 1915
Jan. 2	31.12	28.60		
" 9	30.91	25.33	29.80	26.00
" 16	28.13	27.50	28.08	26.83
" 23	27.91	30.66	29.33	30.66
" 30	31.66	28.66	31.00	28.00
Feb. 6	32.66	26.68	30.62	26.80
" 13	28.50	26.74	26.40	27.00
" 20	26.33	29.00	26.00	27.16
" 27	25.30	29.10	25.25	27.00
March 6	23.25	27.00	23.00	25.25
" 13	22.91	24.66	21.83	24.00
" 20	22.58	23.00	21.40	22.50
" 27	22.66	22.91	22.00	23.00
April 3	23.08	23.00	23.00	22.23
" 10	23.33	23.08	24.00	22.00
" 17	22.91	23.00	23.00	22.00
" 24	22.91	23.00	23.00	22.00
May 1	23.08	23.08	23.00	22.00
" 8	23.33	23.00	24.08	23.08
" 15	23.91	23.58	24.00	23.00
" 22	24.08	23.58	24.50	23.00
" 29	24.08	23.50	24.66	23.00
June 5	24.00	23.90	25.00	23.00
" 12	24.00	24.08	25.00	23.85
" 19	24.08	25.16	25.00	26.00
" 26	24.00	25.50	25.00	26.16
July 3	24.00	25.83	25.00	26.16
" 10	24.50	26.21	25.00	26.00
" 17	25.66	26.58	25.83	26.00
" 24	28.66	25.41	29.20	25.50
" 31	23.83	27.00	24.40	26.00
August 7	25.16	27.00	23.90	26.00
" 14	26.16	27.00	23.83	26.00
" 21	28.33	27.50	26.66	26.00
" 28	29.40	28.00	28.00	26.00
Sept. 4	31.50	28.00	28.83	26.00
" 11	31.87	28.00	28.66	26.00
" 18	30.50	27.00	27.40	26.00
" 25	29.58	26.50	26.16	26.00
Oct. 2	28.41	25.91	27.50	26.00
" 9	29.00	26.91	30.60	26.00
" 16	30.10	27.00	31.00	26.00
" 23	31.66	27.00	31.00	26.00
" 30	30.41	27.00	30.00	26.00
Nov. 6	30.20	26.55	30.16	26.00
" 13	30.42	28.11	32.66	26.33
" 20	33.16	29.59	35.80	28.66
" 27	33.10	28.90	35.25	28.80
Dec. 4	31.08	27.41	30.83	26.50
" 11	30.41	27.33	30.00	23.83
" 18	45.41	43.08	38.33	36.00
" 26	29.42	26.40	30.00	28.00

WEEKLY EGG AVERAGES.
Cents per dozen for Extras.

Week Ending	San Francisco 1914	San Francisco 1915	Los Angeles 1914	Los Angeles 1915
Jan. 2	47.00	38.50	46.50	42.00
" 9	44.33	32.66	39.41	35.16
" 16	41.33	31.00	42.00	30.33
" 23	36.66	30.50	38.00	30.00
" 30	35.66	28.16	37.00	26.66
Feb. 6	35.50	23.33	37.00	23.75
" 13	27.40	23.00	26.66	25.10
" 20	22.16	23.60	22.00	23.58
" 27	20.80	21.40	19.60	20.80
March 6	20.83	20.50	20.00	19.00
" 13	21.00	20.66	20.00	19.00
" 20	20.66	21.00	20.00	19.66
" 27	19.50	20.83	20.00	18.50
" 17	21.66	22.00	21.83	23.08
" 24	22.00	21.80	21.83	22.25
May 1	23.50	26.16	23.50	22.00
" 8	23.00	23.33	23.33	22.00
" 15	23.00	23.16	23.83	22.00
" 22	22.50	23.75	23.00	21.91
" 29	22.60	23.08	23.00	21.83
June 5	23.50	22.50	23.60	20.70
" 12	25.00	22.00	25.00	21.00
" 19	24.66	22.00	25.83	20.00
" 26	24.50	23.33	26.66	23.83
July 3	24.00	23.83	25.66	22.50
" 10	26.16	25.50	25.60	25.00
" 17	27.66	24.83	27.00	24.66
" 24	28.66	25.41	29.20	25.50
" 31	28.60	25.80	29.40	25.80
August 7	30.22	30.50	30.60	28.00
" 14	33.00	31.16	33.60	28.66
" 21	34.22	31.25	34.20	30.16
" 28	34.50	30.58	33.80	29.16
Sept. 4	36.00	30.08	34.20	30.16
" 11	38.50	34.33	35.20	31.66
" 18	40.50	37.08	35.00	33.37
" 11	38.50	34.33	35.20	31.66
" 25	42.50	38.66	35.50	34.66
Oct. 2	40.83	40.08	36.00	37.33
" 9	41.66	40.08	39.00	38.00
" 16	46.30	45.50	48.80	40.00
" 23	49.66	48.08	43.16	42.00
" 30	51.25	48.58	42.00	42.83
Nov. 6	51.70	51.08	40.00	43.00
" 13	49.50	54.25	41.60	45.33
" 20	47.66	53.83	47.33	45.00
" 27	47.40	52.90	45.60	43.40
Dec. 4	44.25	43.91	42.66	40.16
" 11	40.08	41.16	38.33	37.33
" 18	29.33	27.83	30.00	28.00
" 25	52.83	40.80	43.60	36.60

The Panama-California International Exposition filed articles of incorporation Dec. 22.

Publishers' Department

Two hundred and sixty-four new subscribers were added to our list the past week, which rounded out the year in good shape. For 1916 we expect better gains in our subscription list than we made in 1915.

Some orders are already coming in for our new book "Second Thousand Answered Questions in California Agriculture." The first volume of this work met with a large sale and the second volume should also, as all of the questions and replies are entirely different. The new book will be ready for distribution next week. Price $1.50 postpaid, with a special offer to our subscribers.

"Ornamental and Fruit Trees" is the title of a new semi-centennial edition descriptive catalogue by the California Nursery Company, of Niles. The book contains over 100 pages, handsomely illustrated, and is largely devoted to description of ornamental plants. It is worthy of a place on your shelves and can be had for 25c per copy.

The Fancher Creek Nurseries of Fresno have just issued their new price catalogue for 1915-16, which they will send upon request. The book is well illustrated, gives description and prices of fruit trees, ornamentals and flowers. Send for it.

Have you a copy of "California Garden-Flowers" handy to refer to in your garden work? This book by Prof. E. J. Wickson is the standard, and will be sent postpaid for $1.50 per copy.

AGRICULTURAL REVIEW.

(Continued from page 11.)

The Farmers' Union Co-operative Assn. of Fallon, Nev., is to put up a 50x100 corrugated iron warehouse to store their wholesale purchases.

A reduction in freight rates on paddy has been asked by the Pacific Rice Growers' Association; and it is hoped that in the future it will take the same rate as other grains.

It is claimed that 100,000 sacks of rice are stored in the four Gridley warehouses, which is the largest crop ever harvested in that section, its valuation being placed at $250,000.

Half a dozen vessels between American and Oriental ports are to be put into operation by the newly incorporated Pacific and Eastern Steamship Co.

The U. S. Senate passed the bill to transfer the U. S. government exhibits from San Francisco to San Diego. It has been reported favorably in the House.

The Petaluma Grange elected A. F. Barber, master; J. J. Bergstedt, overseer; Mrs. D. M. Winans, steward; Mrs. C. D. Grover, chaplain; J. C. Smith, treasurer; Mrs. J. G. Smith, secretary.

The Chino ranch of San Bernardino county is reported to include 13,625 acres alfalfa, 5,055 barley for hay, 4920 sugar beets, 4635 barley for grain, 210 tomatoes.



IDEAL TRACTOR

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IN AN actual demonstration at Linwood, Cal., an Ideal Tractor plowed a 32-acre field in competition with 2 five-horse teams, and easily demonstrated the superiority of the tractor. Not only was the work done faster, but in much better shape. The test was made by the Webb Brothers in plowing 64 acres of unbroken soil.

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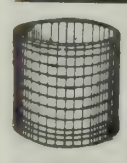
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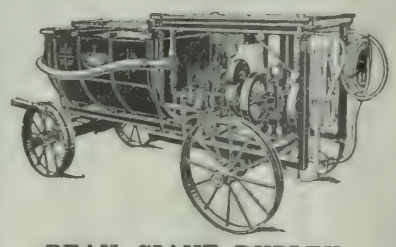
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C. H. Shinn of Fresno county, in writing of "California Garden Flowers," says: "But Professor Wickson, toiling slowly, methodically, for a lifetime, has given us in "California Fruits," "California Vegetables," and other books to which list the present volume belongs, as safe, complete trustworthy a review of the entire field as is possible now and here. His name is written across our horticulture, and it is no small literary achievement for him to have done this with his many years of work at the university and as editor of the Pacific Rural Press."

The San Francisco Bulletin says: "'California Garden Flowers' is the best book of its kind ever published. Prof. Wickson's book concerns flower-growing in this particular state, while the great majority of books are general in their scope and the information they contain is of little benefit to local readers. It is a thoroughly practical book for California gardeners, in which every phase of the subject is discussed in detail."

If you are particularly interested in bulb plants, or roses or lawns, soils, fertilizers, or if you have bacterial or insect troubles, "California Garden Flowers" will assist you. The book contains nearly 300 pages of closely printed text, besides numerous illustrations, is handsomely bound in cloth and will be sent postpaid for $1.50 per copy.

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525 Market St., San Francisco

Vol. XCI—No. 2. Forty-sixth Year.

THE PACIFIC RURAL PRESS

SAN FRANCISCO JANUARY 8, 1916. LOS ANGELES

California State Library 7-1-

Picking Oranges for Profit.

G. Harold Powell has been quoted as saying that citrus growers of California lost $50,000 a week for a period last spring due to decay of the fruit. Blue or green mold cannot affect uninjured fruit.

[Written for Pacific Rural Press.]

IN THE chain of events which results in the display of molded citrus fruits for sale on Erie Pier in New York City and the other eastern markets, the first and one of the most important is the picking.

Blue mold, which is the most universal of several rots on account of which a double reduction in price is exacted by eastern buyers, is absolutely powerless on an orange with unbroken skin.

Blue mold spores are so pervasive of citrus districts, especially the packing houses and the washing machines, that a fruit with a scratched skin stands small show of escape.

Fruits at the auction markets are stacked in "lots" on the floor, containing all of one kind, size, etc., from one shipper in a pile. The top boxes of the pile are uncovered to expose the fruit to inspection previous to the daily auction. If two fruits on the exposed layer are affected with blue mold, the number of layers will be multiplied by two to figure on the spoiled fruits. This figure is then doubled to figure on the probable loss in sorting, repacking, etc.



These beautiful oranges are practically immune from decay, but a scratch on the skin in picking, hauling, or packing invites the universal blue mold.

It behooves the grower, then, to avoid all this loss by insisting on careful handling all the way through. Many of the California Fruit Growers' Exchange locals hire gangs of pickers for all orchards under their control, and all fruit shipped from their packing houses must have been picked by their own men, not by the individual growers nor by their men.

The pickers themselves are selected first for trustworthiness, and a foreman is placed in charge of each gang to prevent careless handling. If the foreman has nothing else to do, he can keep a pretty good record for soundness of fruit picked by his gang. Where there are several pickers, the foreman ought not to pick at all. In either case it is a good preventive of careless work to insist on each lug box being marked as having been picked by certain ones. Then blame can be located.

It has been found inadvisable to hire pickers by the box in many associations where this has been tried. The "picker's per box" idea is clearer in the picker's mind than the "grower's per box." Hurry generates carelessness, which generates blue mold, which generates red ink.

But a conscientious man will be awful slow picking unless he has proper tools.

A careful man may injure oranges if he must clip them with scissors. The best clippers we have seen were in use in two orchards near Pomona and Upland. They are described elsewhere. Without special effort, such clippers could not injure the fruit, especially oranges. The curved, blunt-cornered scissors we saw in one Sacramento county orchard would scratch an orange if drawn quickly along its surface. The Oriental labor was pulling and clip-

(Continued on page 33.)

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W. H. SCHRADER - Advertising Manager
D. L. SCHRADER - Subscription Manager
R. E. HODGES - - Assistant Editor
J. C. LOOMIS - Assistant Editor

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., January 4, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	2.16	14.15	17.76	54	30
Red Bluff	2.52	11.92	10.56	46	30
Sacramento	3.10	8.28	7.48	54	28
San Francisco	4.46	11.84	8.80	58	36
San Jose	3.32	7.94	6.56	60	22
Fresno	1.46	4.51	3.81	64	24
Independence	2.40	2.73	3.77	44	—
San Luis Obispo	4.76	8.66	6.48	62	32
Los Angeles	2.40	5.58	5.56	60	38
San Diego	1.08	3.28	3.37	64	42

THE WEEK

We were surely looking through our prophetic eye when we remarked in this place last week that the seasonal rainfall had reached the normal at most places, for the claim was not quite justified by the record. However, the prophetic eye must have been onto its job—proof whereof may be found in the storm-area higher up in this column, drops from which are blotting this writing, dry and conventional as its nature is. Whether this wide, forceful and old-fashioned storm comes to us through the reminiscent prescription of Grandfather Rhinehart, the "Oregon weather prophet," or is drawn down by the planetary poultices of Father Ricard of Santa Clara, who says it is due to "a triangular flirtation of Venus, Uranus and Mercury," matters very little—but of course the naughty words we quote are those of a Santa Clara reporter, and not of the cleric. Whencesoever it comes, the storm is here, copiously and continuously wet, and though more boisterous and destructive in some places than true weather pacifism would prescribe, it must be reflected that we usually have to take our great producing storms that way, and nothing is worse than not to have them. It is fair to presume that all properly-opened soils will take this rain down to bottom moisture and thus insure cropping with such rainfall as is reasonably sure to come. And it will mean much larger aggregate cropping than if delayed two or three weeks, as often happens when the holidays glide through dry skies. Therefore we say that whether this rain comes from our planet alone, or from all the planets in conjunction, care not we, so glad it is that it has come at all.

Freedom for Luther Burbank.

According to detailed announcements in the daily papers, Luther Burbank rises from the trenches in which millionating promoters tried to enclose him, and sues in the courts for money owing him, for the recovery of his name from contract engagements and for freedom. We do not know the details of the falling out in a business way and have no thought of unkindness toward those who made investments from which they hoped to realize great returns. We hope also that matters may be so arranged that such investors may at least come out even, for it harms the horticulture of the State to have even unwise investors gather loss and bitterness. But without invoking even our mildest prophetic powers, we could have told each and every one who entered the gilded undertaking of some years ago, to keep out of it, for the projection was predestined to business trouble for more reasons than are worth telling. In defense of the horticulture of the State, it must be said that the promotion was by those who knew naught of it. It was a creature of dreams, in which nearly every alleged fact was a misapprehension. But of course business enterprises often arise from much tribulation, and by adjusting themselves to facts learned by experience win out successfully. This we hope will be the future of those who put money into the company which has carried Mr. Burbank's name.

As for Mr. Burbank's suit for recovery of his contract money and his name, we can only say that he should never have parted with either of them. He is a good business man. There can be no doubt of that among those who knew the facts of his third of a century's financing of his own operations. He has the true New Englander's view of the worth of a dollar and of the obligations of a debtor, and he was always, even through much suffering and self-denial, sound and dependable in his financial relations. It was only when the millionators applied their torches to his imagination and assured him that he could work endlessly without financial worry, that he dreamed he could be a greater creator without standing also as cashier. Mr. Burbank has been the prey of literary and commercial dreamers for a decade or more—not one, but many of them. He is not over-credulous; in fact, he is very careful, perhaps even exacting—but he has had games put up to him which would deceive the very elect. Before blaming him for falling into a visionary net, one should know how many meshes he has broken through before they could be tightened around him. We hope he may escape unharmed from his present besetments. He is a song-bird of the wild; no cage should envelope him. Give us back the Burbank of a decade or more ago; let him make new plants and offer them to a world of propagators who may desire to use them in their work. Such things do best when all who wish can buy the rights to them. While Burbank has the management of his own affairs we have confidence in him.

Millions and Millionaires.

Although Burbanking business has not made millionaires up to date, as aforesaid, it is an interesting fact that California has a few—in fact, it is announced from Sacramento that California has 229 millionaires or multi-millionaires, ranking seventh among the States of the Union in this respect. California also has numerous near-millionaires. These figures were reached by counting five per cent as an average rate on investments and $50,000 as an average annual income of $1,000,000. Thus, the figures being taken from the reports of income for Uncle Sam's income tax, presumably, all you have to do to be counted a millionaire is to report an income of fifty thousand, which will only cost you $500, if we remember correctly, and thus you will contribute patriotically to Uncle Sam's preparedness and enroll yourself among the first 230 Californians—except that the law will not permit the officials to divulge your identity. And that seems to interfere with our plan to break into the ranks of millionaires because the realization of its opportunities depends upon publicity. As the law now is, you might patriotically pay $500 income tax if you wish, but you could not get a single day's more time on your grocery bill. Our plans for personal enrichment always seem to turn out some such way. But there are the millionaires for all that, and California has more of them than there are in any other of forty States. Besides California ranks fifth among the States in the number of incomes large enough for taxation. And so the poorest of us may still count himself rich because in good society—financially considered.

Several Kinds of Gold.

It is interesting to note that the yellow stuff which first made California rich still gives the State eminence in its own line. The Director of the Mint reports from Washington that gold valued at $98,891,100 was produced during 1915 in the United States. He announces also that California led in gold production with a value of $23,005,800, or nearly a quarter of all the gold mined in the United States. Colorado was a close second, with $22,191,200; Alaska third, with $16,626,700, and Nevada fourth, with $11,314,700. No other State produced more than $8,000,000. It is pleasant not to lose our leadership in gold, and thus still to realize, in a way, "the days of old; the days of gold; the days of '49." And this is true though we do much more in other yellow stuff than in gold. The orange crop of last year had a delivered value in the East of more than twice the gold produce of the State, and made a cash return to shippers of several millions more than the value of the gold product—and it probably costs as much to produce a million's worth of gold as of oranges. Then we have another rather yellow product that beats gold in value produced, and that is the dairy output, while yellow grain also goes a third beyond the gold mark. And so, with old things and new, we are still taking much that is golden from the soil—with the golden poppy waving over all of it.

The State as a Product Distributor.

Col. Weinstock, the State Market Director, is due to return from the East this week, and will probably soon make public a forecast of what he expects to do in the development of his work, as suggested by his examination into the sale of California products at the East. Press telegrams from Washington indicate that he may offer producers the chance to distribute their perishable products through the State agency which he will organize, if they so desire. It will be remembered that the law places the initiative with the producer, and naturally the market director can command nothing except as it is entrusted to him by the owner. It seems from the dispatches that Col. Weinstock does not shrink from distribution of whatever is thus entrusted to him by or-

ganized producers who have their handling systems properly developed. One dispatch says this:

"One of the weak spots in the Eastern marketing of California perishable farm products," said Weinstock, "is that some of the shippers are large individual growers, some are growers' co-operative societies, and some are shipping corporations, with the result that the distribution has been conflicting, uncontrollable and unscientific, causing frequent gluts and famines. The plan is to have the growers and shippers voluntarily consign their products for Eastern shipments to the Market Commission, which, under the marketing law of California, they may do. The Market Commission would then create a bureau of distribution, which would utilize its machinery, and the fullest daily telegraphic marketing information which would be at its command, to route and, wherever necessary, to divert shipments in such a manner as to give every market the fullest quota of supplies, and yet avoid needless gluts. Under such a system of distribution, directed and managed by the State, the present and future possible losses, through poor distribution, would be greatly minimized. The consumer would profit by being supplied steadily in place of being made a creature of these feasts and famines. Direction of shipments under the plan would be under the State Market Commission, which through a bureau of distribution would keep itself fully informed by telegraph as to prices and elements concerned in advantageous marketing."

Would It Be Restriction of Trade?

That is a question which cannot be determined in advance, for courts do not project their decisions; they wait until some one has done something and then they may damn or bless him. For this reason the telegraph says that, under the law, Attorney-General Gregory cannot express an opinion as to the legality of the scheme of distribution proposed by Col. Weinstock in advance of its inauguration, but it is understood "that such a monopoly formed by a State Government would be looked upon as having a status under the Sherman anti-trust law materially different from that of a similar enterprise privately promoted." It will probably be one of Col. Weinstock's early undertakings after his return to ascertain the attitude which existing shipping enterprises, private and co-operative, may assume toward his proposition. And of that more will come later.

Sulphuric Acid for Alkali.

It would be a good thing to make a market for the sulphuric acid, which is a by-product of copper smelting in this State, and the disposition of which has long been a problem. It would also be a very good thing to take the edge off the alkaline salts, which are too abundant in large areas of our interior-valley regions. If we remember, it was proposed long ago to treat the soil with dilute sulphuric acid, to neutralize the alkali as a cheaper and more energetic agent toward that end than gypsum or sulphate of lime. It is interesting to know that this recourse is now perhaps coming forth from a line of carefully planned experiments by Dr. C. B. Lipman and the other soil experts of the University experiment station, and their work seems to promise not only the transformation of black alkali into white, but also the disintegration of refractory masses of alkaline soil into more loamy character. The following is said to be a sketch of what happens:

The action of the sulphuric acid is threefold; it entirely neutralizes sodium carbonate, the corrosive "black alkali" salt; it shrinks the jelly-like, easily-swelled materials in the soil, known as "colloids," which are put into a very badly diffused and swollen condition by the washing out of the salt by the winter rains or by irrigation; it sets free some chlorine from the common salt, therefore changing all alkali that does remain into sodium sulphate. Not only sodium sulphate, but also calcium sulphate, magnesium sulphate, and other metallic sulphates are formed, and these have been found to have the power to prevent the poisonous action of the sodium sulphate and of other salts. Therefore, through changing the corrosive "black alkali" salt into sodium sulphates, driving off chlorine from the common salt, and making that into sodium sulphate, by shrinking the "colloids" and by producing calcium and magnesium sulphates, the soil can be changed into one containing only sulphates, and by the shrinkage of the colloids can be made much more pervious to air, and therefore a more favorable place for the necessary bacteria and fungi to live in, and to produce conditions and substances favoring the root action of higher plants.

These conclusions seem to be justified, not only by results with pot experiments in the greenhouse in Berkeley, but by field experiments in small plots at Kearney Park, near Fresno. The field experiments, used to confirm the pot experiments, are even more striking in their results than the laboratory work.

Queries and Replies.

Querists must give name and address.

Alfalfa or Sheep on Morning Glory.

To the Editor: I have been told that morning glory can be smothered out in an orchard by means of alfalfa. Also that if sheep are grazed on it it will be destroyed beyond all possibility of renewal.—Reader, San Francisco.

Alfalfa will put up a good fight on morning glory in a field where it can get all around and over it, but in the open cultivated strip in which the trees should stand, the morning glory will defy both the alfalfa and the cultivator. Ordinary pasturage by sheep will make the field look, for a time, clean of morning glory, but will not eradicate it. If sheep are corraled sufficiently long on a small area they will reduce it somewhat and hogs will do it better because they will root after the roots, but neither will kill out the plant. Morning glory is not so "easy" as that.

Almond Rust and Fall Pruning.

To the Editor: Did you not make a mistake in saying on page 3 of your last issue that you did not know what is meant by almond "rust" and on page 6 giving a description of the work of apricot "rust," which the writer says also affects the almond?—E. R., Oakland.

Why yes, we did: things do happen that way occasionally even in the best regulated families. The "rust" described on page 6 is what we generally call "prune rust," because that tree is most apt to catch it—especially in nurseries where the young trees are kept growing late in the season. This rust, which belongs to the same genus as the rust of grain. is not very frequent on bearing prune trees and usually occurs so late that its work on the dying leaves is generally held to be negligible. It is even less aggressive on apricots and almonds and is not counted much of a pest. Prof. Barrett, whose observations in Southern California are noted on page 6 of our last issue, thinks he has reason to credit the rust with much injury to new fall growth of apricots, etc., forced out by pruning in the summer or early autumn. This perhaps refers to trees kept active very late by irrigation. It does not apply to the great areas of these fruits in central and northern California, where "fall pruning" is not done until the tree has advanced so far in dormancy that new growth does not follow. When pruning is done early enough to force new growth, it is called summer pruning, which is often done with the apricot and does not incur rust in places where most apricots are grown. We referred to the red spider in connection with the question about rust because many associate this mite with a rustiness of the foliage and because the red spider does the almond a million times more injury than any rust fungus.

Nasturtiums as a Weed.

To the Editor: What danger, if any, is there of nasturtiums spreading. They seem to grow so freely that I rather fear their spreading too much and thus becoming a pest. Are they easily gotten rid of?—D. S., San Francisco.

Nasturtiums seed very freely and volunteer most joyously wherever the seed reaches, but their roots are shallow and not running. The seedlings can be pulled or hoed out, or even raked out of a light loam, so easily that we should count them a very mild pest even when they appear where they are not wanted. They may be a little troublesome perhaps, but not bad.

Digging out Borers.

To the Editor: Is now a good time to dig borers? If so, why? If not, why? When does the borer make his cocoon? Is it of value to whitewash the base and trunk of the trees after the borers are dug out? Would you just whitewash or would you put something else with it?—L. R., San Jose.

You do not say what kind of borers you are after—that is, the common flat-headed borer, which works chiefly in sunburn, or the crown borer, which does not wait for sunburn. However, with both, the digging should begin in the fall and continue during the winter, if necessary to closely examine and treat all trees. The more you can do of it in the fall the less injury the borers have a chance to do, because they die younger and in the case of young trees with the flat-headed borer, they may be stopped before the little stem is girdled and destroyed. In the case of the crown-borer it is also desirable to kill them young, for they continue growing and boring all through the fall and winter unless checked in their ruinous career. Therefore one should begin looking in the fall for the discolored spots on the young bark of newly planted trees which show that the borer is at work—and looking also for the exudation of gum and saw-dust which indicate the opening of the burrow of the crown-borer. It is toward spring when the worms of both borers stop eating and go into the pupa state or cocoon. For the flat-headed borer, after the larvae is reached by blade or crooked wire, the wound should be covered with whitewash or Bordeaux paste. For the crown borer after digging out, a band six inches wide of "asphaltum D" should be placed in the spring on the rough bark around the base of bearing trees, a little above and below the ground line. This will keep in the perfect insects which come from the cocoons which are at the openings of the burrows and it will keep out the newly hatching larvae from eggs which will be then laid on the tree near the ground by the insects which are not shut in by the asphaltum.

BIG SEED COMPANY IS DISTRIBUTING NEW CATALOG

Also Book Containing Valuable Garden and Field Information.

One of the largest seed houses in the West, the Aggeler & Musser Seed Co., of Sixth and Alameda Streets, Los Angeles, have just received the first edition of their new 1916 catalogue from the printer, and are beginning the distribution of the same. This is their 23rd annual catalogue and it surpasses all previous editions. It is said to be one of the most complete seed books published and contains answers to more than 1000 questions. It gives information regarding every kind and variety of plant grown in the Southwest, and is fully illustrated. Not only does it tell all about seeds, but gives full data concerning the correct tools and implements agriculturists should use in order to obtain the best results. Valuable hints on poultry, spraying and use of insecticides are also given.

In addition the distributors have issued a hand booklet entitled "The Garden Manual." It gives good, practical answers to questions which gardeners and ranchers have asked from time to time.

The Aggeler & Musser Seed Co. will gladly send their catalogue free and postpaid to anyone writing and requesting it.

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Newcastle, California.

Rice, 90 Sacks Per Acre.

[Written for Pacific Rural Press.]

Rice grown on sediment soil 5 or 6 inches deep overlying adobe, yielded 900 sacks on 10 acres, and matured so early that it took the silver cup at the Gridley Exposition 1914, for earliest and best Wateribune.

Sediment lying on an impervious stratum has several advantages. It works up into a fine seed bed early in the season. This 10 acres belongs to M. D. Woodruff of Butte county. The soil was so warm that it was planted without irrigation Mar. 21, the first in that district. Early planting is a necessity because of the long growing season required and the need of a dry harvest. One section this season has only 50 per cent of a crop because they couldn't get the water necessary at planting, until May 15 to 20.

The sediment, instead of baking and cracking as most rice land does after being planted, retained its moisture so well that the seed germinated fine and was 5 inches tall before it required water. The strong root system started in this period was a great factor in the yield, thinks Mr. Woodruff.

This 10 acres had been fall plowed, replowed in spring, harrowed, and 90 pounds of clean seed drilled 2 inches deep with a Van Brunt drill and spike-toothed immediately after drilled, to hold moisture. It came up in about 8 days, and was harrowed lightly then, against all advice. It did look rough, but it took the prize, later. It was flooded Apr. 17, nearly a month after planting. This was simply to keep the surface moist and was at once drained off. When it dried a little the whole field was irrigated; and part of it received another irrigation. The aim was to just keep the land in good moist growing condition. All was submerged June 5 enough to cover the ground and water was kept on the rest of the season. Inflow was regulated to compensate seepage and evaporation, except in mid-August and in September, when cold spells necessitated increased depth of water for protection of plants. When the rice was 12 to 15 inches tall, before it began to head, the watergrass was pulled.

About Oct. 5 the water was drained off, requiring about 10 days to dry enough for the binder. With firm ground, the Deering binder pulled by four horses would have averaged 7 acres per day. The grain and straw were so heavy that it took 3 men to keep up with the binder, shocking the bundles. After a few rounds a rain came which stopped harvesting for a week and required 5 horses when work started again. About ¾ inch of rain fell on the shocks before threshing.

The straw and grain were a bit green and moist when threshed Nov. 8; so that when piled solid in the warehouse 22 sacks high, it heated a little and was some damaged. Some grains from which the husk had been broken in threshing showed a slight tinge of greenish mold. This spoilage could have been avoided by delaying threshing for a few days or by "criss-crossing" the grain in warehouse. "Criss-crossing" means that the sacks are stacked on edge and with alternating layers facing a quarter way around. This leaves air space between the sacks for ventilation, but costs more for storage. The greenest of this lot was criss-crossed and came through all right.

If the shocks, each of which contained 8 or 10 bundles, had been capped, the grain would not have become so wet. But the main object of capping, according to Mr. Woodruff, is to prevent "sun-cracking." This is a defect which does not affect the husk, but causes the grains to break in the milling. It also occurs on those rare occasions when the crop is left standing too long after it ripens, as happened to one man in that district one season.

Mr. Woodruff had never raised rice before; but had studied the reasons for various improved farming practices and was so enabled to apply his knowledge to new conditions.

CHERRY VARIETIES.

Only very early cherries in early districts are very profitable to plant for shipping, because plums and apricots soom compete for the consumers' appetite. Later varieties of cherries are good for canning. Among early districts, Vaca valley and the Sacramento river compete for the honors of shipping the first cherries. Sometimes one beats the others by questionable practices such as ringing the limbs, but in straight commercial growing the earliest varieties to ripen naturally are the best for shipping. Among these are the Burbank, Purple Guigne, Black Tartarian, Rockport, and Chapman, according to H. A. Bassford of Vaca valley. Royal Annes are the standard for canning because they are firm after processing and do not color the syrup. The dark colored ones are more satisfactory for shipping because pressure in shipping boxes does not discolor them so noticeably as it does the light-colored varieties.

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FOR CALIFORNIA SOILS

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Bacteria for Available Potash.

[By Prof. C. B. Lipman, Berkeley.]

One of the most striking facts brought out by our investigations in soil bacteriology is the relation of soil bacteria to the production of carbonic acid gas in the soil. Several investigators have definitely proved that when soil is sterilized, carbonic acid gas is not produced there, which simply means that we are dependent for that material there entirely upon the living organisms. Since, also, it has even been claimed that fertility in soils is a function of the carbonic acid gas content, we can readily conceive the importance to soil fertility of the soil bacteria from that standpoint alone.

This carbonic acid gas is produced through activities of the soil bacteria in breaking down organic matter and oxidizing the carbon thereof and through their own respiration processes. It is produced in enormous quantities. Its importance in the soil lies not only in acting with water as the source of energy for certain of the auto-trophic soil bacteria, which produce organic matter from inorganic substances only, but also as the most important solvent of the soil minerals which we have. Carbon dioxide in such large quantities dissolved in the soil water makes a weak acid which undoubtedly carries out some of the most profound changes in the solution of potash or phosphoric acid otherwise insoluble in the soil. From the standpoint merely of production of carbon dioxide, soil bacteria are of the greatest practical importance and we can enhance their activities in this direction also and have a practical control of them there, by supplying not only the proper air, moisture, and temperature conditions above indicated, but more particularly by supplying a large quantity of organic matter and an adequate quantity of lime, since the latter enhances the rapid decay of all organic materials in the soil.

MARKETING BRANDED POTATOES.

[Written for Pacific Rural Press.]

What seems to be a winning venture at marketing fancy potatoes in Potatoland is the system worked by the Boa Vista ranch of Eldorado county in Sacramento. They grew 35 acres of potatoes last year. The mountain potatoes have better quality than those grown on the River; and it is the aim of Chas. Schaeppi and E. H. Phreaner of this mountain ranch to get 2000 customers in Sacramento who demand their brand consistently through the year and will pay extra for the better potatoes. The idea is to supply a steady market the year around rather than to hold for speculative prices.

Wholesalers in San Francisco are treating them all right, Mr. Phreaner says, but retailers everywhere, even in his home town, put the kibosh on Boa Vista potatoes when demanded by consumers, by substituting other kinds, often without informing the customer, sometimes saying that cheaper potatoes are as good.

Since the only value of a brand is to establish a reputation and demand, the substitution of inferior potatoes makes the added cost of growing, grading, and branding a total loss.

Being unable to control the use of their brand in retailers' hands, two young men have been stationed in Sacramento whose business it is to solicit orders and see that customers are satisfied. When the supply bought for any household is due to run out and a repeat order is not forthcoming, a letter is sent asking why. If the letter is not answered, a personal visit shows if there has been anything wrong. If so, they make it right.

Quality is guaranteed and obtained, first by close study of cultural details, growing big crops at big cost as noted in a recent issue, giving plenty of water and fertilizer; planting thick so the tops shade the ground to prevent black streaks inside which are thought to be due to overhot soil.

The crop when harvested is graded by machine into seven uniform sizes, passing two inspectors as each potato runs along a belt several feet long into the machine. They are culled rigidly and packed into branded sacks which are at once weighed, filling to 104 pounds gross, selling for 100 pounds. A pasteboard label showing size, variety, grade, name and location of the ranch is laid on top and the sack sewed ready to truck down to the railroad.

UNIVERSITY WILL DETERMINE YOUR SOIL ACIDITY.

The question, "When do soils need lime?" and the answer by Dr. Lipman in yours of the 20th of Nov. is very satisfactory as far as it goes, but with your permission I would be much obliged by an answer to a particular case which may apply to many.

I have an orchard, 30 years old, which on an average bears a crop of four tons of Bartlett pears, of good quality, to the acre without irrigation. For three years a cover crop of burr clover has been plowed under in spring and two years ago 16 tons of stable manure per acre was applied. The soil is rather heavy and shows a slight acid condition. It is a sediment from mining debris of the red soil of the country mixed with a light colored decayed porphyry and is about 5 feet deep to a bed rock of grano-diorite.

Now I have a bulletin of the U. S. Department of Agriculture No. 77 which says on page 11 that the pear is liable to be injured by liming **under certain conditions** which it does not specify. Would you kindly supply the omission by stating the conditions referred to?—J. P. D., Placerville.

[Answered by Prof. C. B. Lipman, Berkeley.]

So far as I know, the evidence as to possible harmful effects of lime on pears is meager, if at all worth considering. I am unable to say what the words "under certain conditions" used by the author referred to actually mean. If Mr. Dunlop really has an acid condition in his soil, he can safely go ahead with the application of lime this fall without any fear of bad consequences. He speaks, however, of the fact that his soil "shows a slight acid condition." I should advise him to be certain that his soil has an acid condition before he applies the lime. If he desires, we shall be glad to make a test for him if he will send us samples collected in accordance with the directions given in a circular, which will be sent to anyone interested.

Dr. E. J. Allen is planting 40 acres of his farm near Applegate to pears. He already has 40 acres of older pear trees on the place.

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Our Great Phosphate Reserve

A grave problem for the farmer is to discover the needs of his depleted or unfavorably proportioned soil. Its greatest need may be phosphoric acid, one of the three substances that are most necessary in maintaining fertility, the other two being nitrogen and potash. Phosphoric acid for use in fertilizers has been supplied for many years in part by the phosphates of Florida and Tennessee and from islands in the Pacific ocean. These deposits can not always supply the demand, and therefore the recent discovery that the Rocky mountains contain the largest known area of phosphate rock in the world is of vital interest to future generations, if not to the present one.

Albert Richter claims to be the original discoverer of the western phosphate deposits, because he recognized rock phosphate in Cache county, Utah, in 1889, and located claims on it. These phosphate deposits are said to have been independently discovered in 1897 by R. A. Bidock in Rich county, Utah, in old diggings in black rock that he mistook for gold prospects. A large sample analyzed in 1899, however, proved to be high-grade phosphate rock. In 1908, on recommendation of the Geological Survey, the Secretary of the Interior withdrew from entry 4,500,000 acres of land in Idaho, Utah and Wyoming, believed to be valuable for phosphate, and this phosphate withdrawal was continued by the President under the act of June 25, 1910. In 1909 and succeeding years these phosphate deposits were systematically examined by the United States Geological Survey, and in 1910 phosphate rock was discovered in Montana, near Melrose, by Geologist H. S. Gale. On January 1, 1915, the total area of phosphate lands in Montana, Utah, and Wyoming withdrawn from entry was 2,713,155 acres. This phosphate reserve is larger than any similar area in the United States. It is, indeed, the largest area of phosphate rock yet recognized in the world.—United States Geological Survey.

CHEAP AGRICULTURAL LIME.

Waste lime from beet sugar factories has been pointed out as cheap and efficient for soil improvement by P. L. Hibbard of the University of California.

"Sugar factories," says Mr. Hibbard, "use large quantities of lime in purifying beet juice. During the process the quicklime is changed back to carbonate, the same chemically as it was in the original limestone. But its appearance is very different. The waste lime is discharged from the factory as a sort of mud. This lime is, by weight, nearly half water and contains impurities from the beet juice which were originally derived from the soil. Some of these are valuable as plant foods. A ton of the waste lime may sometimes contain as much as a dollar's worth of these plant foods, in addition to the lime, which is its chief value. On account of the large amount of water in it, the waste lime will contain only half to two-thirds as much pure lime as a good limestone, or one-fourth to one-third as much quicklime. But it is very finely divided, hence it mixes easily with the soil and acts more quickly than ground limestone, which is relatively much coarser.

"Though it has some plant food value this material is useful chiefly as a corrective for acid soils and for making heavy soils work easier. It must be distinctly understood that not all soils are improved by lime. Persons interested may obtain from the Experiment Station at Berkeley, Circular 111 on The Use of Lime and Gypsum on California Soils.

"The chief expense for this waste lime will probably be for freight and hauling. After it has dried enough to crumble easily and spread well, it should be one of the best forms in which to apply lime to a soil needing such amendment."

HAY BEFORE BEAN CROPS.

[Written for Pacific Rural Press.]

By planting oats on 10 acres in December, 1914, S. C. Peck of Stanislaus county was able to get a good crop of grain hay and a crop of blackeye beans from the same land in 1915, the latter going about 15 sacks to the acre.

The hay was cut about the first week in June. After hay harvesting the land was irrigated by flooding and after plowing again, planted to beans June 25 to July 15.

Mr. Peck never cultivates beans with a cultivator after planting, but keeps a mulch on the surface with a weed cutter which he uses enough to keep the weeds down between the rows. Enough hoeing is done in the row to keep the larger weeds down there. He harvested his beans last year the latter part of September and the first part of October.

Altogether Mr. Peck raised 85 acres of beans in 1915, the other 75 acres having been planted in May and harvested about the same time that those on the hay land were. Part of his ranch is sub-irrigated and from his experience he thinks that while there is a heavier growth of vines on that kind of land than on his other, there is no material difference in the yield of beans.

On the sandy soil which is characteristic of his section, Mr. Peck gets a better yield on land that has formerly been in alfalfa, also on land which has been planted to beans for several years previously.

Seventy tons of headed milo maize was picked from 30 acres on the Ana Mac Ranch two miles southeast of Delano. A grain crop was first taken from the land. It cost $7.75 to raise and pick an acre of corn. The itemized figures are as follows: plowing, $1.50; cultivating, 75c; irrigating three times, $3; picking, $2.50. The cultivating was done after the first irrigation. Next season the corn will be harrowed after the first irrigation and cultivated after the second.

California Garden Flowers

Trees, Shrubs and Vines

By E. J. Wickson. A. M.

The newest, most comprehensive book on California gardening. You need this book every day in your garden work. Every part of growing flowers is given attention and you will be richer and happier by having a copy at your elbow when you need it.

C. H. Shinn of Fresno county, in writing of "California Garden Flowers," says: "But Professor Wickson, toiling slowly, methodically, for a lifetime, has given us in "California Fruits," "California Vegetables," and other books to which list the present volume belongs, as safe, complete trustworthy a review of the entire field as is possible now and here. His name is written across our horticulture, and it is no small literary achievement for him to have done this with his many years of work at the university and as editor of the Pacific Rural Press."

The San Francisco Bulletin says: "'California Garden Flowers' is the best book of its kind ever published. Prof. Wickson's book concerns flower-growing in this particular state, while the great majority of books are general in their scope and the information they contain is of little benefit to local readers. It is a thoroughly practical book for California gardeners, in which every phase of the subject is discussed in detail."

If you are particularly interested in bulb plants, or roses or lawns, soils, fertilizers, or if you have bacterial or insect troubles, "California Garden Flowers" will assist you. The book contains nearly 300 pages of closely printed text, besides numerous illustrations, is handsomely bound in cloth and will be sent postpaid for $1.50 per copy.

Address

Pacific Rural Press
525 Market St., San Francisco

Foothill Plum Varieties Described.

Clymans—Probably not advisable to plant.

Tragedy—Good seller, but does not bear well in all locations.

Santa Rosa—A good plum in most respects. Trees require careful and proper pruning and crop requires thinning.

Climax—A standard Japanese variety but liable to crack, especially if moisture supply is not evenly maintained. A heavy bearer and the crop should be thinned.

Vacaville—A new plum resembling the Tragedy. Will probably be a good seller, but not yet sufficiently tried out. Promising.

Formosa—Fine size, but very fragile, delicate skin and easily bruised; hardy and bloom not easily frosted.

Maynard—A fine plum, but not a good bearer.

Burbank—Fair seller, sure, heavy yielder, carries well.

Diamond—A profitable variety at present. Does not live long enough on peach stock in all soils. Better chance of success if grafted in branches. Myrobalan roots preferable.

Wickson—Valuable on account of large size and good shipper. Will bear regularly if not allowed to overbear.

Purple Duane—This variety should be tried out. Quite promising.

Grand Duke—The peer of shipping plums. Can be dried and sold for large size dried prunes. Very popular plum in Eastern market if landed ahead of Idaho Italian plums. Good in early sections of the county.

Giant—A good seller if properly grown and thinned. Liable to overbear. Pale pink color is not favored, but if good size will bring fair price.

Gros and Hungarian—Magnificent plums, but shy bearers in some sections.

German Prune — Fair bearer and good seller, but not grown to any extent in the county. Deserves a tryout.

Kelsey Japan—Regular bearer in some sections if not allowed to overbear; susceptible to peach-moth damage unless sprayed. Do not plant in frosty situations.

Gaviota—A new variety; not yet tried out. Probably good.—E. O. Amundsen, Placer County Farm Adviser.

PEACH VARIETIES IN PLACER COUNTY.

Alexander or Mayflower — Shy bearer, but may give early money.

Briggs Red May—Fair bearer; early.

Triumph—First reasonably good shipper among early varieties. If thinned will be of good size and attractive to Eastern buyers.

Early Crawford—Staple variety; light bearer when young.

Late Crawford—One of the finest quality; often comes into Eastern markets between heavy supplies. Not always good bearer.

Elberta—Standard variety; good bearer, but comes in with Eastern peaches.

Orange and McDevitt Cling—Standard mid-summer shipping clings and must be handled like eggs in the picking and packing to insure arrival in Eastern markets in sound condition to bring good prices. Extremely high color and of fine appearance.

Lovell—Sometimes profitable for local trade.

Salway—Probably not advisable to plant.

Tuscan—Standard canning variety.

Phillips Cling—Standard canning variety.

Levy Cling—Standard canning variety.

J. H. Hale—Claimed to be an improvement on the Elberta, ripening about the same time.—E. O. Amundsen, Placer County Farm Adviser.

FEDERAL LICENSE FOR WAREHOUSES.

Whereas, Quotations to show general market conditions can only be based upon uniform grades of farm products;

Whereas, Grain, cotton and other farm products should be made the most convertible of assets;

Whereas, The universal negotiability of warehouse receipts depends upon a system of uniform grading and a properly bonded warehouse inspection; Therefore be it resolved:

First: That we commend the work of the Office of Markets, United States Department of Agriculture, in its effort to establish uniform standards and grades for farm products;

Second: That we recommend to Congress the passage of suitable legislation making permissive the establishment of state graders acting under federal license and regulation, and of a system of warehouses which may be licensed and inspected by the federal Office of Markets in order to most effectively insure uniformity in grades and widest negotiability of the warehouse receipt;

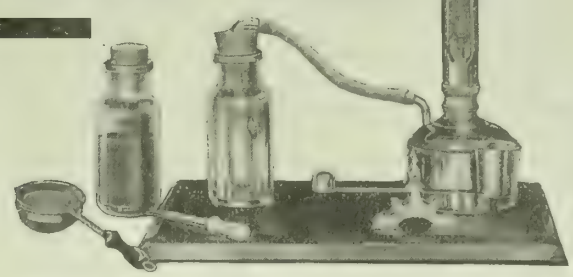
Third: That the State legislatures should pass such supplementary legislation as will insure the co-operation of all interests for obtaining uniform warehouse receipts and uniform grades, which statutes shall be sufficiently flexible to be in accord with all such federal action;

Fourth: That all federal inspected warehouses shall be required to register the amount of each graue of each product received and delivered;

Fifth: That in any given federally inspected warehouse no differences of rates be allowed for the same grade of any given farm product because of differences of amounts stored, or from other causes, and that no other form of discrimination shall be permitted. — From resolutions of National Ass'n of State Marketing Officials.

At a recent meeting of the rice committee of the Sacramento Valley Development Association, statements were made by experts on the dangers facing the rice industry in the State on account of wild grass pests. The following committee was appointed to inaugurate movements in their various localities against the spread of this pest: George E. Harvey, Biggs, chairman; Miss May Sexton, Sacramento, secretary; Emory Oliver, Sacramento; N. P. Searles, Woodland; W. H. Heileman, Willows; William Grant, Vacaville; B. F. Walton, Yuba City; W. A. Beard, Marysville, and W. K. Brown, Colusa.

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It Will Show You Accurately:

1. Whether a soil is in the right chemical and physical condition.
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3. How much Lime is needed per acre to counteract the acidity
4. What quantity of Carbonates (Lime and Magnesia) a soil contains. It will indicate quantities, both in "percentage" and "in tons per plowed acre." From this you will see whether a soil is lacking in them or has plenty of them.
5. Whether disclosure of Carbonates is Alkali or Lime.
6. Whether a soil is lacking in Humus. It will show you whether a soil contains 1 per cent or more, ½ per cent, or none.
7. Whether a soil is in need of a green manure crop.
8. It will demonstrate the probability as to whether a soil will respond to applications of chemical fertilizers or not.

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429 Davis Street, San Francisco.

Walnut Growers' Association.

[Written for Pacific Rural Press by C. Thorpe, Mgr. California Walnut Growers' Ass'n.]

The California Walnut Growers' Association is the marketing organization of the large percentage of the walnut industry in California. The business of the Association is conducted strictly on no-profit, co-operative lines. The Association has no capital stock, operating on the membership principle. The principal walnut districts of Southern California are located in a territory about 175 miles in length and 20 miles in breadth, along the Coast line from Goleta, in Santa Barbara county, to San Juan Capistrano in San Diego county. The districts being so scattered, there have necessarily sprung into existence quite a number of local walnut growers' associations in each of the principal producing walnut sections located in the territory above outlined.

Membership in these local associations costs $3.00 to $5.00 an acre, which is used toward purchasing a site conveniently located on a railroad siding, and building and equipping a walnut packing house. The walnut graders and cleaning equipment in these packing houses are as nearly uniform as possible, the California Walnut Growers' Association having developed certain restrictions on grading methods, etc.

These local associations have the privilege of becoming members of the California Walnut Growers' Ass'n; and when they do so, one of their members is elected as a director of the California Walnut Growers' Association; thus the central association is simply made up and owned by the various local walnut growers' associations.

By purchasing supplies for the sacking and bleaching of the walnuts of its members, the Association saves them many thousands of dollars annually, and through the perfection of its sales department is also enabled to make a very great saving in the selling expense, the volume of business handled having reduced the selling cost to approximately 3 per cent. Through our sales department we have opened up much territory which formerly was controlled entirely by importers of foreign walnuts, and through our insistence on high quality and uniformity in grading methods, we have been able to give the trade an article of dependable quality. Our system of distribution enables us to keep every market of the country in a supply of walnuts during the heavy consuming period, thus insuring the maximum consumption which was formerly impossible when some markets were glutted early while others were kept entirely bare of a reasonably early supply.

EUREKA WALNUTS.

[By Dr. L. D. Batchelor, Citrus Experiment Station, Riverside.]

The Eureka is being extensively propagated, largely to fill the increasing demands of the central California planters. This variety seems well adapted to the lower San Joaquin Valley, although the original tree is located in Fullerton, Orange county. The tree is a very rapid, vigorous grower of an upright habit, and reaches a profitable bearing age considerably later than the Placentia. Judging from the original tree and the oldest groves, the Eureka may be expected to be a medium to heavy producer as the trees mature. The nuts are large, fairly uniform, elongated, and of medium smoothness. The shell is medium to thick and well sealed. The nut will stand any reasonable handling during harvesting and processing without cracking open. The kernel is a light cream color, of medium plumpness and is easily cracked out whole. During some seasons the kernels are inclined to fill poorly through one quarter of the nut. The quality of the Eureka is excellent and should eventually become established as a very popular commercial variety.

The dense, large foliage protects the nuts against sunburn to a large degree, and perforation is seldom or never experienced by this variety. Its lateness in coming into bloom seems to enable it to avoid much of the blight infection the majority of seasons. The harvest follows soon after the Placentia and earlier than the Franquette or Mayette. Taking all points into consideration, the Eureka seems to be one of the most promising varieties for the northern inland sections.

STRAWBERRIES TOO WELL CARED FOR.

[Written for Pacific Rural Press.]

Five double rows of Ettersburg strawberries 80 feet long with plants 24 to 30 inches apart were set by C. R. McBride, formerly of Solano county, from a dozen plants received from Pacific Rural Press the previous winter. When seen, the spring after the long rows were set, they showed large plants with heavy dark green foliage, not heavily set with berries.

The plants had not died down in winter. The runners had been clipped and had grown a foot long again before ripening season. The berries, some of which were ripening, were over one inch in diameter every way, and were held free of the ground, but under the heavy foliage so they did not sunburn. Perhaps this was also the reason that some did not color well. They had a flavor of their own, very attractive, though not liked by some people.

The reason for their light bearing was the good care they received. Between the double rows was a trench a foot wide for irrigation, and the ground had been heavily enriched. The combination of water and plant food was too great a temptation for this variety to make plants rather than fruit.

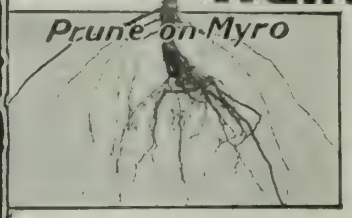
PEAR BLIGHT FIGHT.

Regarding the article "Pear Blight Fight Paid" in the issue of Dec. 18, E. A. Gammon writes that we were misinformed; that Mr. Reed never expostulated with him for cutting the blight so severely. Mr. Reed himself had told us that he did not do thorough work cutting out blight until the fall of 1914, owing to the rush of work and because he had not realized the full danger. It is well known to our readers that he did a most thorough job then, and that it paid him well.



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French, Imperial, Robe de Sargeant, Sugar and Standard on Myrobolan root; also on Peach root.

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Royal Ann, Black Tartarian, Bing, Early Chapman, Early Burbank and Lambert on Mazzard root; also on Mahaleb.

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All varieties grafted on Picholine root; also grown from cuttings.

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Beauty, Formosa, Climax, California Blue, Diamond, Wickson, Gaviota, Kelsey, Grand Duke, Hungarian and all other varieties — on Myrobolan, Peach and Almond root.

CLINGSTONE PEACHES
Our Improved Tuscan Cling, Improved Hauss, Phillips of true type; and also other standard varieties.

APRICOTS
Royal, Blenheim, Newcastle Early, and all varieties—on Myrobolan, Apricot and Peach root.

ALMONDS
All standard varieties on Almond and Peach root.

WALNUTS
Franquette and San Jose Mayette, cut by R. Wiltz, the pioneer Walnut expert, from specially selected trees of absolutely true type—the highest pedigree that can be given a Walnut. Write for samples of nuts from parent trees.

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This is an opportunity to get 10 fine trees of choicest varieties of fruit delivered freight prepaid for only $3.95. You can make your own selection or leave it to us and we will send you ten best grade 4-6 ft. deciduous fruit trees including one grafted walnut. Write for our list of combination offers for home planting and our free book on California fruits. Address Box A

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Good Culture Increases Orange Sweetness

As a result of the thousands of chemical tests which have been made of oranges in connection with the work of the Tulare County Protective association in determining the 8 to 1 test during the past two years, it can be definitely stated, according to the officials of the organization, that fruit from those orchards which are liberally and properly irrigated, liberally fertilized, properly pruned, and carefully cultivated, show fruit which will meet the government requirements early in the year, particularly if such work has been done for a term of years. On the other hand, neglect of an orchard for even a single year will result in tardy formation of sugar.

In almost all instances, on the other hand, when fruit colors at a very early date, the sugar content is low. It is said that there are a few orchards in this district on which fruit was in full color early in November and this fruit now tests as low as 6 to 1.

CLEAN CUT AT END OF ORANGE TAP ROOT.

[Written for Pacific Rural Press.]

Just before planting, the lower end of orange tap roots ought to be cut off just enough so the bark is tight to the wood all around the cut place, according to E. O. Giddings of Tulare county. Thus it will heal at the cut and send out new roots quickly both from the healing callous, thus getting a good deep root system, and also roots from points above on the tap root. If bark at the lower end of a tap root is left loose at planting the tree is very likely to die, as had one which we had taken from a neighbor's ranch with the root rotted. It is also true that all severed roots of transplanted trees generally should have a clean cut at planting.

ORANGE "BROWN SPOT."

[Written for Pacific Rural Press.]

The recent discovery by Prof. H. S. Fawcett of the citrus experiment station that "brown spot" of oranges could be produced by applying citric acid from other orange peelings, seemed to show that "brown spot" is not a disease. But it had not been found that such spots could be produced by so treating green oranges on the tree, until recently. Deputy State Horticultural Commissioner G. P. Weldon has in his office oranges on which typical "brown spot" was produced by applying citric acid to their rinds while green on the tree. A knife blade wet with the acid was rubbed lightly flatwise across the skin without breaking it in any way, and the spots developed.

PICKING ORANGES FOR PROFIT.

(Continued from page 25.)

ping the fruit in a desperate hurry to get done, and many long stems had to be cut off again. Many such were not cut again, but were tumbled into the lug boxes to scratch all which they touched.

Pulling oranges usually means squeezing them and this is about the same kind of injury to the fruit as was caused in the orchard mentioned above by dropping the oranges into the sacks—bump, thud, bruise, rot, red ink on that orange and some other orange must pay for the packing, hauling, freight, etc., on that one, so there are two on which no profit is made because one was bruised. This is not counting the injury to fruiting wood caused by pulling the oranges off.

Stepladders ought to be provided tall enough for the picker to reach the tops of trees—ladders with three legs only, so that the third leg may be set in among the branches without damage. Some growers prune open spaces from circumference to center to admit light and air for interior fruit. This facilitates picking.

Gloves are needed by all pickers to prevent fingernail injuries; and small mouthed canvas bags hung from the shoulder prevent throwing oranges in, with a thud. In one orchard, the bags were held partly open by crescent-shaped frames whose concave sides fitted against the body. When these are not too large, each orange must be carried to the mouth of the bag. The bottom of the bag may be opened to let the oranges roll gently into lug boxes. Each bag held about half a box. Since scratched skin makes a potential rotten orange or lemon, sticks and hard dirt are better left outside the field boxes. Likewise splinters and nails projecting into the box because of rough handling while empty, are fertile sources of injury.

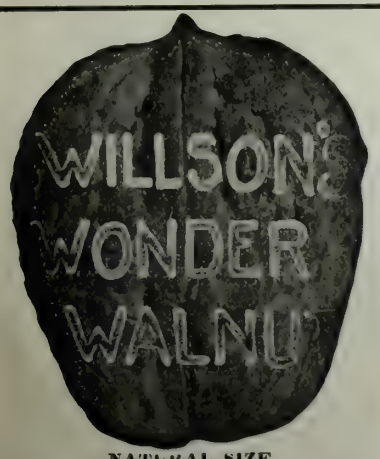
So again is the policy of filling boxes above the edges and stacking them up in wagons. The squeezing they get here opens them to infection, whereas the squeezing they get in nailing the lid of the packed box still leaves them protected by paper wrappers.

What to Pick—Aside from the 8 to 1 regulations of the California Fruit Growers' Exchange, there are assignments by the local packing house as to size and quality to be picked by any one man any one day. The Exchange advertises two brands, creating demand for them and higher prices. To get repeat orders on these brands strict regulations are enforced as to fruit packed under them.

To get the benefit of the second grade of these brands, the fruit must not be badly sunburned, nor very rough or coarse, must be free from insects and diseases, splits or other decay-producing injuries, must not be badly misshaped or colored, and none may be picked from the ground.

When fruit excluded by the rules from the advertised brands is picked, hauled to the packing house and sorted out, there is all that labor lost; when it isn't sorted out, there is much more lost not only on that shipment but in the reputation which sells many growers' fruit without inspection when common fruit doesn't sell for as much as freight charges.

Plans are being made by a committee of stockholders to separate the Winters and Suisun canneries which are owned by the same company.



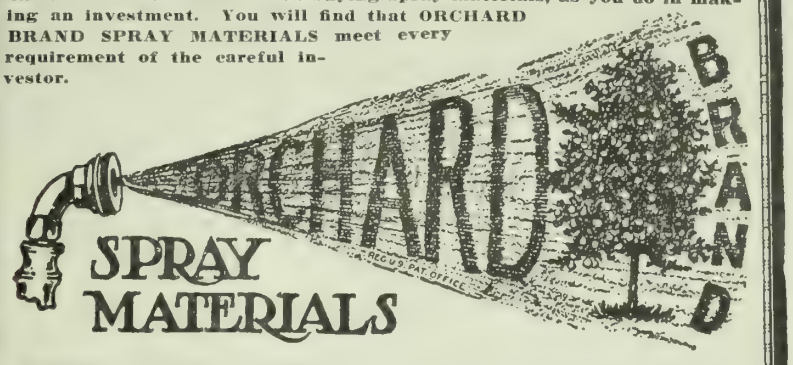
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Write us, giving age, variety and kind of trees, together with the pest you wish to control, and we will give you definite information regarding its most effective control.

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Alfalfa Plowed in Fall for Vines.

[Written for Pacific Rural Press.]

F. H. Wilson of Tulare county plowed up 18 acres of five-year alfalfa to plant Emperor grapes. He was glad he did it in November, for the alfalfa thrived on the plowed ground. It was plowed seven inches deep, according to W. M. McKersie who was in charge of the vineyards. Then late in February, he finished plowing it again, 10 or 11 inches deep. "It will take all summer to get the alfalfa out," said he.

As soon as the plowing was well worked down, he staked it out 7x12 feet and proceeded with his planting.

"Not one man in ten gets a good stand of grape cuttings, and it is hard to get resets the following year to grow well."

Perhaps that is why he insists on so much care in planting. One man was busy dipping the top ends of 12-inch split redwood sticks in whitewash. These were to be set beside the cuttings to show where they were three weeks later when the vegetation might hide them from view of the cultivators.

Trimming the Cuttings.—Another man was trimming the cuttings. They were 14 inches long and well rooted. All roots were clipped off close except those at the end. Deep-rooted vines were desired—so much that later on the dirt was plowed away close to the vines seven inches deep, the remaining dirt hoed away, and the new roots exposed were clipped off. They grew fast because the surface soil was warmer; but later on it would be dryer and roots in the surface soil would be a liability rather than an asset. Those that remained were cut to three inches.

The pruner also cut off practically all but one shoot from the top end. This one was cut back to one bud.

A hole big enough for both feet at once, and 15 to 16 inches deep was dug for each cutting. It was filled in with top dirt so the cutting would set 12 or 13 inches deep. About four inches of loose dirt, thrown on top of the roots was then tramped down and the hole filled with loose dirt that would not be packed. This vineyard was in addition to 54 acres of Emperors already in bearing.

REGULATION OF COMMISSION MERCHANTS.

Recognizing that the practices common in many of our terminal markets have caused a great deal of dissatisfaction among producers, and a consequent shattering of confidence even in the worthy agencies of distribution; Be it therefore

Resolved, That the National Association of Marketing Officials hereby places itself on record as favoring federal legislation for interstate shipments which will require commission merchants, and any other receivers of farm products on consignment, to keep a uniform system of accounts, giving each shipment a number in rotation, showing date and from whom received, date of sale, name of purchaser and price; a transcript of the entry sent promptly to shipper; all such records to be open at all times for examination by a shipper, or any state or federal market official. Be it further

Resolved, That for the proper administration of this legislation we favor the stationing of federal inspectors at all terminal markets.

INOCULATION FOR LEGUMES.

[By Prof. C. B. Lipman, University of Cal.]

One of the great practical achievements of soil bacteriology is the control of the soil organisms which have the power of fixing nitrogen from the atmosphere while growing in the nodules on the roots of leguminous plants. Our knowledge on this subject has been wholly given to the agricultural world through some of the most brilliant scientific work in the history of agriculture. From that we have learned to use pure cultures, and also soil already inoculated, to infect new soils with these valuable forms of bacteria. We have further learned through our investigations that the best method is the direct soil inoculation or the use of a suspension made up from a mixture of infected soil with clean water. Our inoculation experiments have been so far successful that 90 per cent of the trials have given successful results in inoculation; and even with the pure cultures, the Bureau of Plant Industry reports that for the last year 74 per cent of the trials have been successful. From our own practical standpoint, I should advise the inoculation of soils even where burr clover is found to grow wild, and where vetches and Canadian field peas will make a fairly good growth; because such inoculation by the soil suspension method which I have recommended can be done at no cost in a very short time and will make sure of more vigorous growth, other conditions being equal.

FROST OIL RESERVE.

[Written for Pacific Rural Press.]

Citrus growers who have provided smudge pots not large enough to burn through the longest probable freeze, may be in a hurry for fuel some time when the orchards are too soft for wagons or when burning pots would be in the way. It is then that 100-gallon storage tanks, stowed away under the trees, full of oil, as is done by the Pomona Land and Water Co. may save the orchard and certainly will save labor when rest is needed. G. P. Von Stein has added reserve besides 100 gallon tanks, by setting 5 gallon cans of oil about the orchard ready for use. He sets them under the trees in the springtime.

California grew and marketed the largest crop of walnuts in the history of the State, according to a report just received from C. Thorpe, secretary and manager of the Cal. Walnut Growers' Ass'n. The crop last year totaled 14,250 to 14,750 tons or 9,000 tons more than in 1914. The growers' organization handled 82 per cent more than in 1914. Less than two per cent of the crop is now in California.

Warden J. A. Johnston of San Quentin prison announces that he will have 4,000,000 grain bags to sell. The price was 9 cents until New Year's. New prices will be made soon.



He's Eating Up YOUR Money

DID you know the U. S. Government has shown that the ground squirrels on your place are collecting 34c from you every year for each acre of your cultivated land, in what they eat and destroy?

Furthermore, did you know that these little destroyers depreciate land values an average of $2.74 per acre? Can you afford to pay the toll? Stop it. Get rid of these pests that eat your crops, destroy your trees and vines, and spoil your land. It's easy and inexpensive to get rid of them with Kilmol.

Kilmol is a liquid chemical that both asphyxiates and poisons squirrels, gophers, etc.—Kilmol "will kill 'em all."

Waste balls are saturated with Kilmol. One is placed in each burrow, then ignited. The gas quickly penetrates to every part of the tunnel.

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SQUIRLGOPHENE
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It "gets" Mr. Squirrel or Mr. Gopher before he can escape. One application, costing less than one cent per burrow for Kilmol, invariably does the business—it's 100 per cent efficient. Results absolutely guaranteed or money refunded. Kilmol can also be used with U. S. Destructor—a machine invented by U. S. officials that forces Kilmol gas into burrows—Kilmol is used by Government, State and County officers.

Ask your local dealer for Kilmol and waste balls. The waste balls you get from him are better and cheaper than home-made. If he can't supply you communicate with me, giving his name. Also ask him about improved United States Government formula of poisoned barley.

Write for full information about squirrel and gopher destruction.

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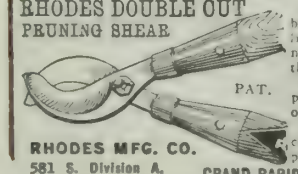
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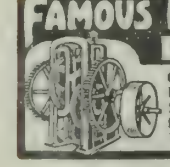
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READ THIS---

From Scientific American, Dec. 27, 1913.

RADIUM IN AGRICULTURE.

"According to recent experiments in Europe, it appears that Radium is instrumental in preventing diseases of plants, whence is likely to arise a new application of this interesting element in agriculture. For several years, workers in agronomic science have been experimenting with the effect of Radium upon vegetation by mixing Radio-active substances with usual fertilizers.. The numerous results obtained in this work show that most plants, either grain or flower, are remarkably stimulated and give a better yield, both in size and quality, this being often seen in the fine and healthy color of the green plants or leaves.

Under these conditions it is not surprising that the plants are in better condition to resist attacks from the various sources of disease such as cause so much damage to crops, especially diseases known as cryptogamic, which arise from spores or mold. It seems that Radium is to act as a preventive for such diseases as wheat rust, rotting of potatoes, grape vine mildew and many others, which cause such detriment to agriculture. Such results in the application of Radium in agriculture are likely to be far-reaching."

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$1.50 Postpaid, Pacific Rural Press.

Sulphur and Iron Bacteria Needed.

[By Prof. C. B. Lipman, Berkeley.]

While our common crop plants do not take up very large quantities of sulphur, a certain amount of that material is essential to the development of proteid material and therefore essential to plant and bacterial growth. Not only, therefore, is this material necessary in the soil for the development of the bacterial cells which are related to our ammonia, nitrate, and total nitrogen supply in the soil, but there are certain forms of bacteria which have as their function in the universe the control of the sulphur supply through its solution and through its oxidation and they are the so-called sulphur bacteria. Some of the recent investigations at the Wisconsin Agricultural Experiment Station would seem to indicate, moreover, that sulphur is an important element in the soil and may be lacking in soils, as potash and phosphoric acid may be, and therefore a supply of sulphur through gypsum, etc., may be as instrumental in increasing crops. Whether this, with further investigation, proves to be absolutely so remains for the future to show. We do know, however, that soil bacteria are intimately concerned with a supply of the sulphur in the universe and that there are some forms which have the power of breaking down sulphates and setting free sulphur in its elemental form; and other cell bodies which have the power of oxidizing this sulphur and producing other compounds which may be of use to plants.

So far as iron is concerned we have a similar relationship with the soil bacteria to that of sulphur. There are several forms of soil organisms which have the power of reducing iron from the sulphate of iron to the sulphides and some others which have the power of oxidizing iron to the ferric oxide form. These are very commonly found in the iron ore deposits and form very interesting subjects of investigation. Their practical value, so far, we can say but very little about. There can be but little doubt, however, that future investigation will show an intimate relationship between the chemical changes which iron undergoes in the soil and the bacterial activities there.

STATE WATER COMMISSION.

[From paper read by A. E. Chandler of the California Water Commission before the International Irrigation Congress, Sept. 15.]

Under the old California statutes no public offices had jurisdiction over appropriations. It was only necessary to post a notice, record it and to begin the work within a specified time and prosecute it with reasonable diligence to completion. It was this question of reasonable diligence in regard to which new legislation was most needed. Under the new statutes, as first adopted in Wyoming, a central office, generally the State Engineer (in California, the State Water Commission), has jurisdiction over all new appropriations. When it is found that an application will not conflict with existing rights and will not prove detrimental to the public welfare, it is approved by the central office and, in the approval, the time is fixed within which construction must begin, within which construction must be completed, and within which the water must be applied to beneficial use. The appropriator, therefore, knows before spending a dollar in construction, the exact time within which he must complete the several steps incident to his work.

In acting upon all applications where appropriations were made prior to the establishment of the Commission, the California Water Commission will favorably consider only those appropriations where work has been carried on in a businesslike way.

The law provides "that the water right granted by the State Water Commission can never be capitalized for either rate fixing purposes or for purposes of sale to a political unit.

Instead of allowing an appropriator to go ahead blindly and trust to luck that he will not be engaged in litigation, in cases where it is certain that no unappropriated water remains, he is not allowed to proceed.

It is in the interest of all that we should try in every way to cast off, so far as is lawful, the burden of riparian rights. The riparian doctrine is legally the one great obstacle in the way of the best development of our water projects.

WALNUT VARIETIES FOR LOWER SAN JOAQUIN.

[From paper by Dr. W. W. Fitzgerald, Stockton.]

The relation between quality of nuts and quantity produced by any variety should be carefully considered, especially as the demand is increasing for fancy stock.

Young trees often produce fair-sized nuts, but the size may decrease as the trees grow older. The weight of nuts varies widely in those of the same size. There is no doubt that dark-meated varieties will be less demanded as the lighter ones become more plentiful. Meats should practically fill the shells.

The varieties that do best in the lower San Joaquin valley are the Eureka, Franquette, Payne's Seedling, Meylan, Mayette, Parisienne, Concord, and Willson Wonder. The Placentia Perfection may prove itself a good nut for this locality.

DARK CORKY SPOTS ON PEAR LEAVES AND FRUIT.

To the Editor: What is the cause and cure for the black thickened corky spots of irregular size and shape that came mostly on pear leaves last fall a month or two early. Many of the limbs lost all their leaves last fall a month or two early. —Subscriber.

[A microscopic insect called pear-leaf blister mite does the work. It winters under the bud scales and begins laying eggs on the young leaves when the buds first unfold. This is the time to spray them with commercial lime-sulphur, 1 to 13, drenching all buds.—Editors.]

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Mechanical Power on the Farm.

[Written for Pacific Rural Press.]

DRIED PEACHES BY MACHINERY.

[By G. W. Harney, Marysville.]

It has occurred to me that formation of the newest of fruit associations—the Peach Growers' association—offers an opportunity to the manufacturers of farming machinery, especially tractors, to easily demonstrate that the production of dried peaches can be carried on almost entirely by machinery; the association will make prices stable and insure a steady market for the product, for the reason that dried peaches can be produced in quantities only in California by the economical sun-drying process. Sun-drying in the Eastern states is not practicable on account of summer rains and humid climate.

With the sales department organized and a market assured for the product large profits can be made by cutting down cost of production, and this can be done by machinery in the case of dried peaches more simply than with any other fruit product.

Would it not be possible to make a tractor do all the work on eighty acres of freestone peaches with the labor of five men? The tractor will do all the plowing, harrowing, rolling, hauling and pumping required. By putting a platform on the tractor for the men to stand on four men could do all the pruning. No ladders to move, no climbing up and down, no lost motion. A compressed air tank and a spray tank on a platform on top of the tractor, and two men could do all the work of spraying. Furthermore, there would be no delay in spraying, as the tractor could go on the ground at any time of the winter without miring.

The peaches, when ready to cut could be shaken from the trees to sheets, rolled into picking boxes and the boxes carried to the cutting shed on a carrier, tram or track system, operated by the tractor engine; then run through pitting and halving machines and delivered on trays on trucks, cup side up ready for the sulphur house; the tray full of sulphured peaches to be later run on tracks to the dry yard. The tractor at a central point would run the machinery—the tram-carrying system, pitter, etc.

Of course the whole plant would have to be arranged according to some definite system, and a crew trained. The trained men would receive a high wage and be housed in the best of style. If I ever plant another peach orchard, and I am seriously thinking of planting one to standard freestones with a view of producing dried peaches exclusively, I certainly will have it arranged so that all the work can be done by machinery, operated by trained men.

REDWOOD PIPE LONG USED.

To the Editor: Replying to yours of the 16th inst. regarding my experience with redwood stave pipe, would say that it is entirely satisfactory.

A six-inch line of this pipe was laid ten years ago and except for one or two leaks which were easily repaired, it has given good service, in spite of the fact that the pipe is empty five to six months of the year.

Another line which we started last spring and finished this fall contains 2200 feet of eight-inch pipe. Believing that this wooden pipe would last longer when filled all of the time, we have connected this line with the tank at the house. As this tank is supplied with water by a 1 h.p. Luitwieler pump, we do not have to start the large pump which supplies the 8-inch line with water, when we wish to fill the pipe. In fact, after we finish using the large plant we close the outlets to the eight-inch pipe except an air release valve at the upper end, and turn on the water from the tank which automatically keeps the line full.

Another suggestion which we think is of great importance is the insertion of air relief valves wherever there are pockets for air to gather. With the elimination of all air from a line, it would be a common thing to see redwood pipe which had been installed twenty years or more in as good condition as the day they were laid.

Woodlake. **Frederic Kitchener.**

WANTS BATTERYLESS ENGINE.

To the Editor: In the issue of Dec. 4 you describe an "Engine with No Batteries." Can the magneto of this engine be obtained separately and fitted to any make and break ignition? If so, where can it be had? —T. P. I., Sebastopol.

[Answered by De Laval Dairy Supply Co.]

[It will not work on other engines than the Alpha, because it is built in, and depends for its efficiency on its harmony with the rest of the engine—being geared and timed for the particular one on which it is used.]

BUYS SIX TRACTORS.

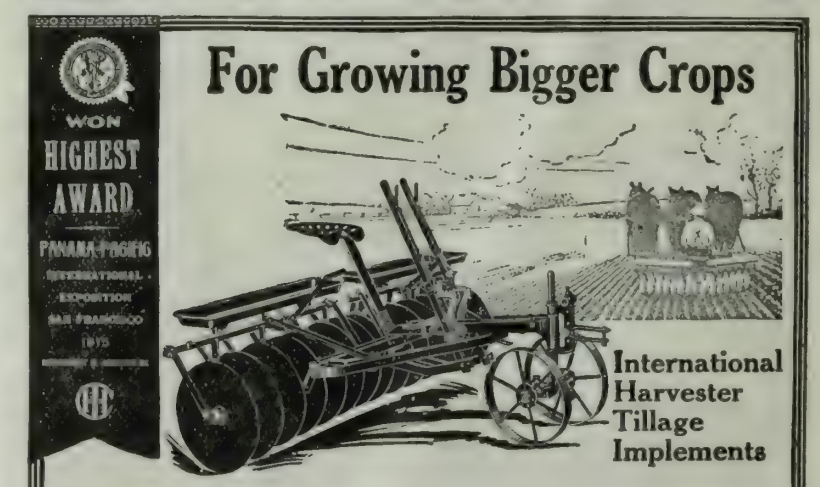
Some time ago a Caterpillar tractor without wheels to run on the ground, being guided by increasing or decreasing the speed of the track on one side or the other, was reported as being nearly ready to put on the market. The convenience of this type is such that Mrs. M. S. Bordges has recently ordered six of them to use on her ranch in Monterey county. One was tried out at first, checking land for irrigation. It did the work rapidly and was easily driven on the soft plowed ground.

POWDERED CHALK FOR LEAKY TIRES.

"Neverleak" sometimes spurts out of a tire and spoils a fellow's clothes. French powdered chalk made into almost gravy consistency with water and forced into a deflated tire does all that Neverleak would, according to A. S. Nott of Los Angeles county, and is easy to clean from clothes in case of accident. The air pump is filled with the semi-liquid mixture, which is then pumped into the tire.







HOW TO FIGURE TRACTOR HORSE POWER.

[Written for Pacific Rural Press by Wm. H. Kritzer.]

By referring to the illustration a person can quickly determine the approximate draw-bar horsepower of a traction engine.

The diagram is figured and drawn from the following formula as a basis, in which "H P" equals draw-bar horsepower. P equals draw-bar pull. S equals speed of tractor, in miles per hour. Thus, H. P. equals $\frac{P \times S \times 5{,}280 \text{ ft.}}{350 \times 60}$

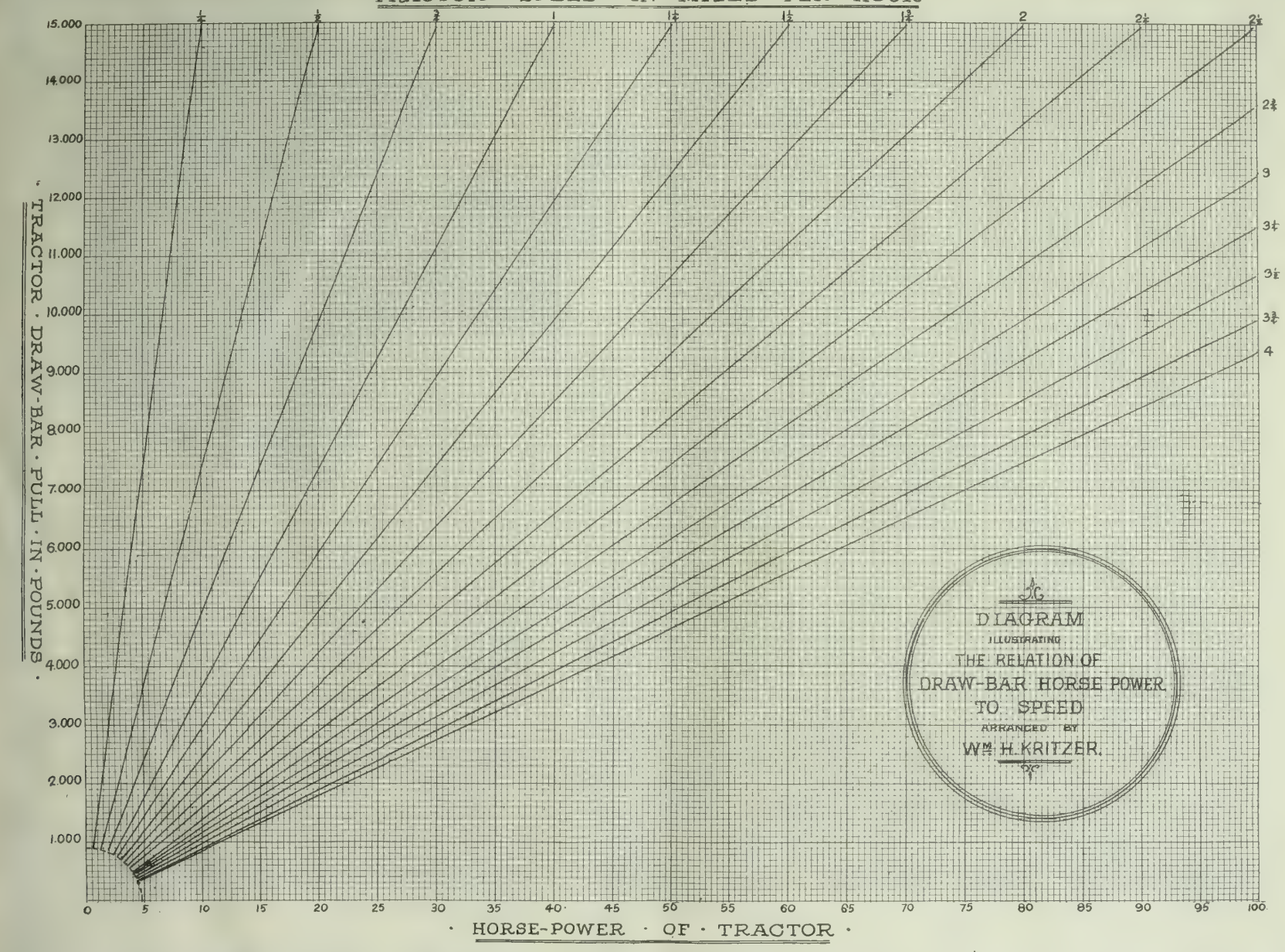
Example:—Given the horsepower of the engine or motor and the speed it travels in miles per hour, to find the draw-bar pull of the tractor, first, find the vertical line which corresponds to the horsepower rating of the engine or motor and follow that line up to where it crosses the sloping line which indicates the tractor speed in miles per hour. Then follow the intersecting horizontal line to the left, obtaining the draw-bar horsepower delivered.

Brake horsepower represents the power that a tractor can deliver at the pulley or fly wheel for belt work.

Draw-bar horsepower or "traction horsepower" represents the brake horsepower that a tractor can deliver at the draw-bar, when the tractive surface is comparatively level and solid.

A "horse equivalent horsepower rating" means the number of good work horses the tractor will displace, when running on a level and firm footing, the pulling power of a horse being commonly known by the term "draft" when compared with the draw-bar pull of a tractor.

[The chart may be used to find what horsepower tractor one wants to buy for his work. If the work equals a pull of so many pounds at a certain speed per hour, the corresponding horsepower engine can be easily located. If one has a tractor of known horsepower and wants to haul a load 4 miles per hour on a level road, he can figure how much of a load is possible.—Ed.]





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General Agricultural Review.

CITRUS AND SEMI-TROPICAL.

R. F. Fullington of San Martin, Santa Clara county, has purchased a few avocado trees which he will plant as an experiment on his ranch.

Some orange picking was reported at Corona, December 30, but it was not thought that the packing season would be in full blast before January 15.

Riverside's exhibit at the National Orange Show at San Bernardino next month will consist of a part of the Santa Fe Indian village which was shown at the Panama-Pacific Exposition at San Francisco.

Practically all of the navel orange crop of the Lindsay district of Tulare county has been shipped, there remaining but 50 cars on December 31 still to go. There were 1804 cars shipped from that place up to that time.

Notwithstanding low temperatures and in many instances snow, the citrus sections of the State seem to have escaped any damage the past week. Rains followed the snows in most instances which overcame severe freezing.

Reports from Florida are to the effect that fully one-half of the citrus crop of that State was moved before the first of the year 1916. The total shipments to the first of the year were 1607 carloads of grapefruit and 7558 carloads of oranges.

Estimates are being made that the orange crop of the Pomona district will amount to 3500 cars this year. It was thought early in the week that the first car would be shipped about January 10.

Reports from the east are to the effect that the trade there is very well pleased with the California oranges which have been received this year, one report saying that there is no comparison between the quality of early oranges this year and those of previous years.

We are advised by the Wallace Nurseries that the outlook for the sale of citrus trees the coming year is especially good. They are receiving inquiries already from prospective planters and this fact would indicate that there will be a heavy acreage planted this year. The high prices being received this year will no doubt influence many land owners in this respect.

DECIDUOUS FRUITS.

Tree planting was started last week in the vicinity of Newcastle, according to reports from that place.

C. K. Turner, Horticultural Commissioner of Placer county, reports brown apricot scale prevalent in Placer county this year. He is recommending the use of oil or distillate sprays.

The "Fruit Special" train which is to take all of the prominent fruit shippers, packers and handlers of fruit to the convention of Western Fruit Jobbers at Memphis, Tenn., will leave Sacramento January 11.

According to Geo. P. Weldon, assistant State Horticultural Commissioner, there is an urgent need of reliable statistics on fruit production in this State which cannot be secured under the present system.

The Cal. Development Board publishes railway statistics showing California's 1915 fruit production to be worth $90,000,000, fuel oil $52,000,000, hay and forage next, butter $20,000,000, gold $20,000,000.

Preparations are being made for a heavy planting of prune trees in Sonoma county this year, according to advices from there. Owners of vineyard land which is suitable for prunes are said to be buying prune trees in large numbers.

M. R. Struble, manager of the Penryn Fruit Growers' Ass'n reports 200 acres newly signed up for the 1916 season. They market through the California Fruit Exchange, a growers' organization, which now has 1600 members from Imperial to Shasta counties.

Plans for the final meeting of peach growers at Fresno January 12, at which time a permanent organization will be formed, officers elected and definite plans outlined for the work of the California Peach Association during the coming year, were well under way the first of this week.

According F. S. Jerome, president of the Watsonville Apple Distributors, there were approximately 5,000 carloads of apples grown in that section last year of which about 40 per cent went to the dryers, the balance being shipped out. The membership of that organization is given at about 500.

State Market Director Weinstock plans to help standardize dried fruit packs by establishing a standard. Fruit will be entitled to a State label when certified up to standard by State inspectors. The Market Commission proposes to endorse warehouse receipts of standard goods. These receipts may then be used in New York or elsewhere as collateral for loans up to 80 per cent of full value at 3½ per cent interest. The New York State Marketing Bureau will co-operate to find consumers for California products.

VINEYARD ITEMS.

A large acreage of Thompson Seedless grapes are being planted by farmers in the vicinity of Yuba City.

Several large tractors are at work tearing out the vineyards on the Stanford University ranch in Tehama county. The land is to be planted to alfalfa.

Pruning of hillside vineyards near Livermore Valley is now under way. Pruning of the vineyards in the valley is being delayed for fear the warmer soil will force the buds and increase frost danger.

Unless the Associated Raisin Company is able to sign up 15,000 additional acres by April 1, that company will change from a growers' co-operative selling agency to a mere packer, and return to the speculative system of raisin selling previously practiced. Such is the ultimatum given out last week by the directors of the association. The increased acreage in the past three years is responsible for the association only controlling 60 per cent of next year's crop, instead of 90 per cent heretofore. It is believed that the required acreage will be secured in a short time if all growers co-operate.

OLIVES AND NUTS.

The Almond Growers' Ass'n at Guinda, Yolo county, elected new officers last week. E. E. Curtis was elected president.

A large acreage of almonds will be planted near Orland this year. A. Smith will plant 100 acres and J. J. Flaherty and John Lackenmeyer will plant 45 acres.

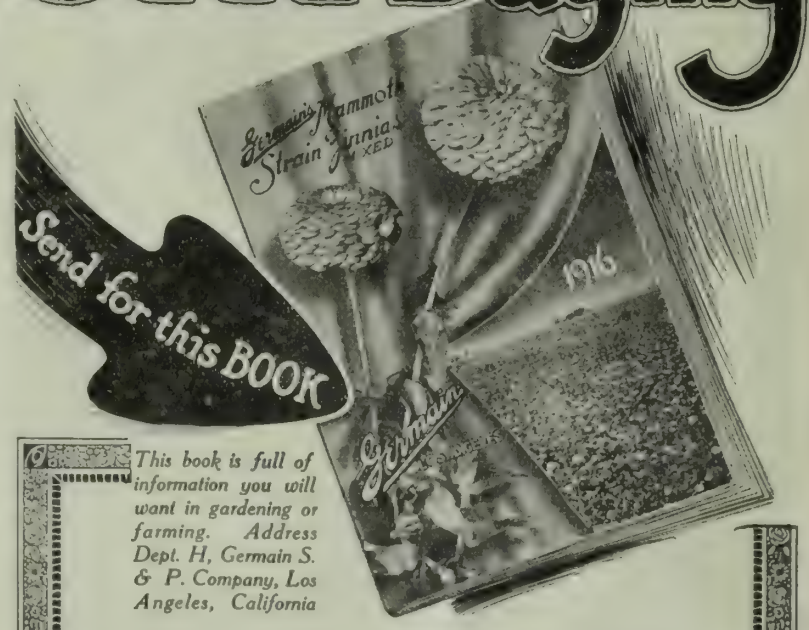
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Some of the larger olive packers of the State are complaining of the sale of home-packed olives on the ground that they are being thrown on the eastern market at ruinous prices to the trade in general.

A carload of 10-cent cans of ripe olives were shipped east this week by the Porterville cannery. There are 160 tons of olives in that cannery and 200 are expected before the end of the season.

There are 800 acres of bearing almonds in the district adjacent to Banning, Riverside county, and 300 acres more to begin bearing soon. This is one of the largest acreages of almonds in Southern California.

A report from Oroville states that the recent cold spell has caused the olives there to shrivel up so badly that no more packing will be done. It is estimated that half to two-thirds and in some instances 90 per cent of the crop was canned.

GENERAL NEWS.

The rice acreage at Wasco, Kern county, will amount to several thousand acres the coming season.

The Pacific Rice Growers' Ass'n report the sale of almost 10,000 sacks of Jap rice at $2 a cwt. on December 30.

A Los Angeles company is said to be planning to plant 160 acres of land to alfalfa in the Pixley district of Tulare county.

According to advices from Tulare county most of the grain land in the Lake region is already planted, the acreage being about normal.

A. E. Lindstrom of Orland is reported to be installing an underground irrigation system on his 40 acres of alfalfa and fruit land.

J. J. Rooney of Chico shipped two carloads of hops east last week. This is his first shipment of the season and is only a small part of his total holding.

There have been about 700 acres of sugar beets planted near Alpaugh this year and most of them are already up, according to advices from there.

A report from Yuba City states that there is a likelihood of the Alameda Sugar company planting their 20,000 acres of sugar beet land to rice the coming year.

It is estimated that there are still 100,000 sacks of beans in the Stockton warehouses. This is a much smaller amount than has been usual at this time in previous years.

Northern and Central California have had a poor honey season, chiefly due to adverse climatic conditions Butte county is an exception due, it is said, to the prevalence of star thistle.

Alfalfa hay is bringing $10 per ton baled, on the ranch, and $12 delivered at Yuba City. Several hundred tons of hay have already been shipped from that section at the above prices.

Alfalfa hay supplies are short in Imperial Valley this winter as in most other alfalfa growing districts. Reports from there say that the increase in livestock is the cause of the present shortage.

The Spreckels Sugar company received two carloads of sugar beet seed at Soledad, Monterey county, last week. The seed was passed on by J. H. Hichman, County Horticultural Commissioner of that county.

Bean growers in Ventura county who planted a catch crop on their bean land report a gain in the yield of beans of seven sacks to the acre. Potatoes were planted on the ground in the spring before the beans.

After conducting experiments on 12 different plots in Napa valley, H. J. Baade, county farm adviser, reports that unless a person has irrigation water it is not advisable to try to grow sweet clover in that section.

A carload of alfalfa seed was destroyed by Horticultural Commissioner Roullard of Fresno Co. last week. The shipment was seized some time ago and upon examination was found to contain both harmful weed seeds and insects.

Grain growers in the Oakdale district of Stanislaus county were busy before the last rain, preparing their ground and planting. They are expecting to plant a record-breaking acreage if weather conditions will allow them to.

The recent cold spell made the potato growers in the Delta district happy as it put the tubers in excellent condition for shipping. Digging is now well under way in that section and storage space in Stockton is rapidly being filled up.

A carload of beet seed was received at Manteca last week for the heavy planting of beets which is to be made in that vicinity the coming year. Satisfactory yields were secured there last year and an increased acreage is the consequence this year.

The Merced river corn crop is being moved to market at this time, there still being about 2,000 tons of the crop in growers' hands. The quality of the corn there is said to be especially good this year and growers are receiving $1.50 a hundred for it.

There are at the present time about 50,000 bales of hops in the hands of Sacramento valley hop-growers. Prices offered are eight to ten cents a pound. A meeting was held last week at Sacramento at which time steps were taken to form a hop growers' association.

An irrigation district containing about 22,000 acres has been formed in Lassen county and will be known as the Southern Lassen Irrigation District. There is much good land in that district which has been handicapped by lack of water heretofore.

About four tons of bell peppers, string beans, peas, tomatoes and eggplant are being shipped daily by the Orange County Vegetable Growers' Ass'n. It was expected that by the end of last week they would be making carload shipments of vegetables to the Chicago markets for the holiday trade.

CITRUS FRUIT GROWERS TO MEET.

The Forty-eighth State Fruit Growers' Convention Citrus Special will be held at San Bernardino, February 18th and 19th, 1916. The orange discussion will be led by C. C. Chapman who will speak especially of the possible value of a "brand." The discussion of the lemon will be in charge of C. C. Teague. A. D. Shamel has kindly consented to speak of the pomelo. Marketing will be discussed by our new Commissioner of Marketing, Colonel Harris Weinstock. Dr. G. Harold Powell will speak on the problems of the citrus industry. The citrus outlook of the north, Butte, Sacramento and Tulare counties, will be presented by Fred Mason, W. W. Hinsey and H. Webster, respectively. Soils and soil fertility will be discussed by the Messrs. H. J. Webber, I. G. McBeth and W. P. Kelley, three very able soil experts. The 8 to 1 orange test will be explained. Professor H. J. Quayle will give the latest on fighting scale insects. E. O. Essig and H. C. Bryant will give lantern talks on insects and birds, respectively. Col. Weinstock will repeat the address which he gave at Visalia, which elicited great praise.

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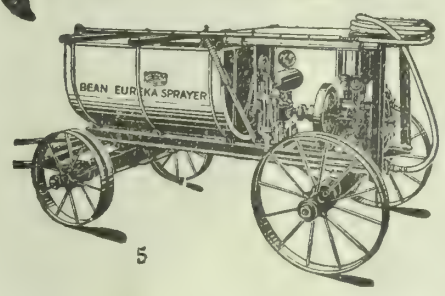
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SOUTH AMERICAN PRUNE MARKETS AWAIT US.

A prune market heretofore neglected by dealers is awaiting us in South America which cannot now get their accustomed European prunes. The following from the U. S. Dept. Agr. is interesting:

"There is apparently an opportunity for the American prune in South America. Approximately a quarter million dollars' worth of prunes are imported annually into South America under normal trade conditions. Of this, the United States, the largest prune-producing country of the world, supplies only about five per cent. Argentina's importations of prunes in 1912, the latest normal year, amounted to over $100,000, and those of Brazil to a like sum, though the exact figures for Brazil can not be stated. Uruguay is also a considerable importer of prunes, and all these countries have in the past drawn their importations from France and the Balkan States, which are next to the United States in rank of world producers of prunes. They have also drawn large quantities from Germany; and as the imports from all these European prune-supplying areas are now either cut off or greatly reduced, the opportunity is open to the American growers, who can reach the South American market from the Pacific Coast by way of the Panama Canal at much less expense than formerly. In the fiscal year 1913 the United States exported 118,000,000 pounds of prunes, valued at $6,656,000, of which only 196,000 pounds, valued at $14,000, went to South America."

TREES DIE MYSTERIOUSLY.

To the Editor: We have a small young prune orchard in Santa Cruz county hills which was originally in brush, was planted to fruit trees many years ago, and most of the old orchard died. It was reset to trees some of which have died already. We find a felty fungus in the roots. What kind of spray will help?—Sub.

[No spray will help. Several fungi might cause the "felt," but the chances are that your trouble is oak root fungus. If so, you ought to be seeing toadstools in clumps at this time of year growing from the ground around the trunks of infected trees. Digging carefully you would find "roots" of the fungus in the soil and infected roots. They have a white center with a brown cover. The fungus has a clean toadstool smell. Pears, black walnuts, figs, and cherries seem most resistant. No practical method of killing it has been worked out, though its spread can be stopped by digging a trench three or four feet deep around infected areas, filling it with dirt which does not contain diseased roots, and open the trench regularly every three years.—Editors.]

WALNUT ROOT STOCKS.

[From paper by Dr. W. W. Fitzgerald, Stockton, read at Visalia Fruit Growers' Convention.]

It is hazardous to grow walnuts where the watertable rises nearer the surface than eight feet. The California Black root will stand more moisture than the English, while the Eastern and the Royal Hybrid will stand a great amount. Southern California Black does not do well on heavy moist soil. Eastern Black is



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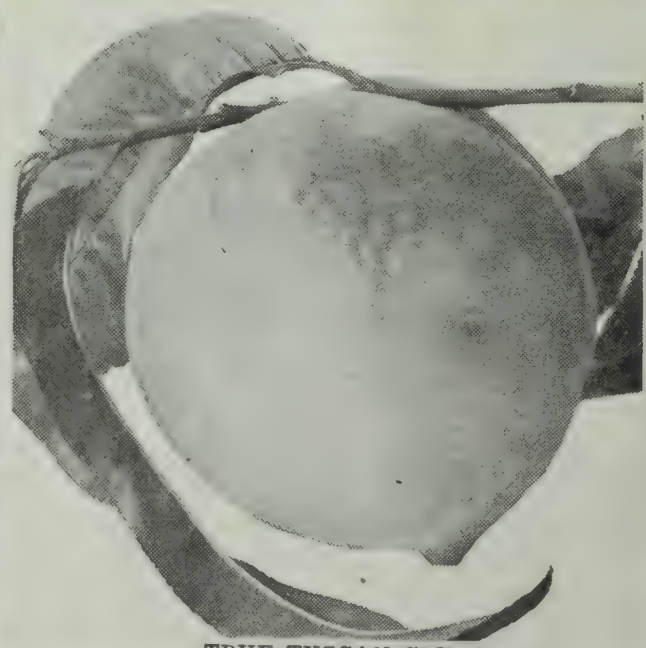
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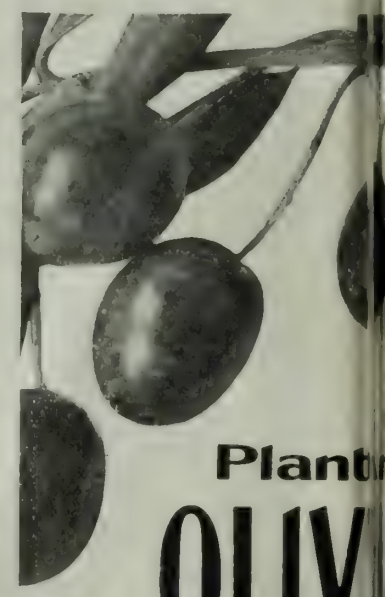
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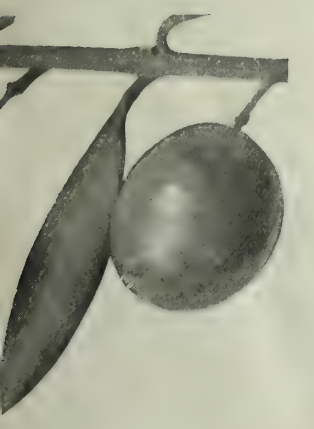
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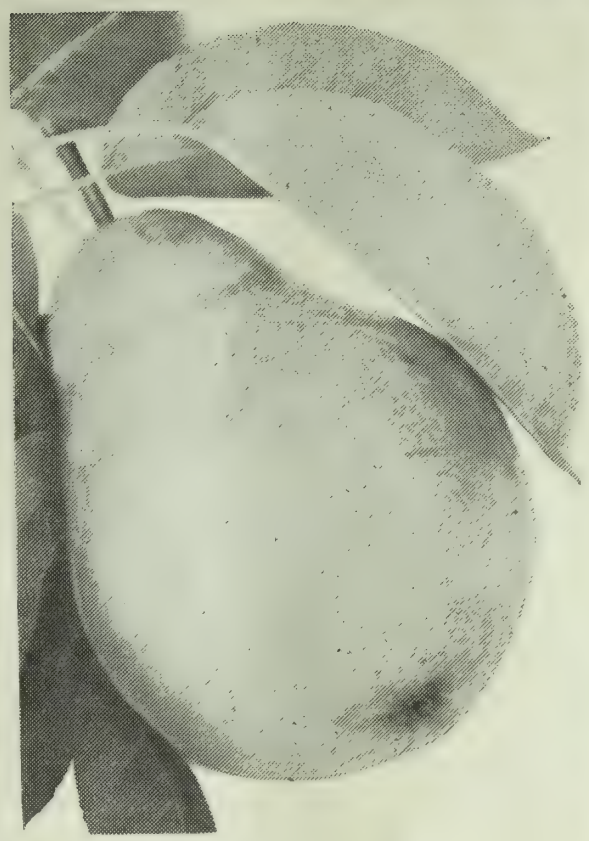
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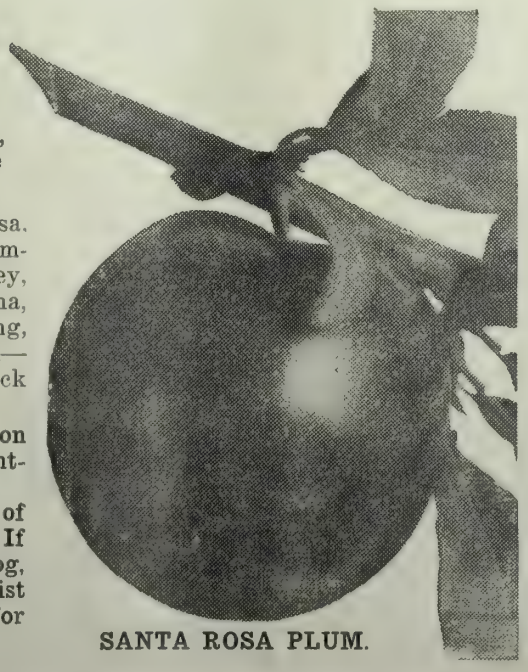
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too slow a grower. Paradox hybrid, a cross of English and California Black, has several weaknesses of its English parent. Royal Hybrid nuts used for root stocks should be only the first generation cross between California and Eastern black. Others may prove disappointing. First generation nuts produce trees which grow at least a third faster, produce a tree earlier and give larger crops due to the increased size and vigor of the tree. Their roots are the best all around stocks for English walnuts for the San Joaquin valley. They are practically immune from oak root fungus so far as known. The California Black is the most common root for California budded or grafted walnut trees.

INTERESTING NOTES ON RYE AND ORCHARD GRASSES.

[Written for Pacific Rural Press by Albert F. Etter.]

Commenting on the query of "W. W. M." of Dixon on rye grasses in a recent issue I would suggest that its ability to withstand submergence is limited if completely covered. However it will grow in the water for weeks if the tops are above water. Again, if cut below the surface of the water, it will drown in a few days. It will stand complete submergence for a much longer period in running water than in stagnant water, and in cool, than in warm, weather.

As regards desirability for permanency in northwestern California, speaking in particular for the parts with least fog, rather than those with the most, orchard grass among all cultivated sorts of which seed is easily obtainable, is the best. When once set it is about as nearly permanent as we can hope for and thrives under many conditions from moist to dry, rich to rather poor, growing among weeds and brush and enduring much abuse such as all good grasses in range practice must meet. Its ability to "catch" is limited to a burned brush patch, or cultivated ground. To sow on open, natural range is a waste of seed, as it will not establish itself.

Briceland, Humboldt county.

SAFE ORANGE CLIPPERS.

[Written for Pacific Rural Press.]

About the handiest and safest orange clippers we have seen are those used by J. E. Murphy of Los Angeles county. They have stubby, almost hemispherical jaws which cannot scratch or cut the skin. The cutting edges are countersunk so that with the jaws open and resting on the orange, when they close, they slide up over the button and cut the stem close. There is a V indention where the points would come together to help get the stem between them. The cutting edge is not made to be sharpened, but is cleaned with emery paper. The only inconvenience is that when twigs or leaves get in ahead of the orange stem, the jaws are too short to reach the stem. Even this is an advantage in keeping pickers wide awake to handle every orange carefully.

The U. S. Dept. Agr. reports kafir, milo, feterita, etc., to have yielded an average of 28.4 bushels of grain for U. S., 35 in Col., 32 in Tex., 28 in N. Mex., and 26 in Okla

Wooden Gopher Trap.

[Written for Pacific Rural Press.]

"The only way to know your citrus trees are safe from a gopher that has made its appearance is to trap him," says H. E. Wilkinson of Los Angeles county. A good trap used by another citrus grower of that county, R. Hefty, is built about as follows: It is a wooden box 3x6x2½ inches inside, with one end and the bottom left off. A coil spring horizontally across on the top near the back or closed end naturally holds its rectangular wire extension nearly vertical. This extension is built to fit around the edges on top of the top board and across just back of the other end. From the end of this rectangular loop, another one about 2¼x2¾ hangs loosely so that when the big one is held flat on top of the box by the trigger, the little one hangs close to the sides and across the bottom. The big loop is short enough so that the little one works up and down through the narrow notches cut into the top of the box from its end.

The trigger has two parts. A notch is cut through the top of the box just forward from the spring, an inch or two lengthwise of the box and a saw thickness wide. Through this is dropped a small stiff wire about 6 inches long with a loop on its lower end to hang crosswise of the box inside near the bottom. Another loop is made in the wire where it passes through the top so that it will work loosely on a finishing nail driven for an axis across the top of the box and the center of the slit. A quarter inch of the upper end of this wire is bent at right angles, toward the closed end of the box. When this is done, it projects only a half inch above the top. The other part of the trigger is a wire looped through a staple in the center of the forward end of the top so that it may be laid back over the big wire loop on top to the bent end of the vertical part of the trigger. There a quarter inch of its end is bent at right angles toward the side of the box so that the bent end of the vertical wire can engage it. The bait is put in the closed end of the trap. The gopher runway is dug out so the trap can be set into it and is surrounded with dirt. The gopher in attempting to get to the bait shoves the loop on the trigger which is thus disengaged above and the loop springs up, catching the gopher around his body and holding him against the under side of the top.

PREFERS REDWOOD PIPE.

Answering our inquiry regarding the Honora Realty Co.'s experience with redwood stave pipe near Lemon Cove, E. E. Goodale writes: "We are using about two thousand feet of redwood stavepipe, and it has given such perfect satisfaction that we have just closed an order for five thousand feet more varying in size from 4 inches to 8 inches in diameter. Some of it being built to stand a pumping pressure of seventy-five feet. The pipe we use is a product of the Redwood Manufacturers Co. of Pittsburg, Cal., and is made with a guarantee to do as it is supposed to do.

"Some of the pipe we are using is laid upon the surface of the ground with no covering at all and held in place by stakes driven in the ground. It has been in use one season. Part of the time, it has had no water in it, at the same time being exposed to the hot summer without being injured in the least. Other pipe we have under pressures varying from ten to twenty-five feet; and in the whole of it there has not been one leak nor the least bit of annoyance.

"We are using several miles of cement and steel pipe and we find the stave pipe cheaper than the steel and more lasting and we find it, where pressure is to be considered, better and about as cheap and much more satisfactory than cement.

"As a pipe to be used in the transportation of water long distances, and as a pipe to be used in the transportation of water where pressure is to be considered, a better, or a cheaper, or a longer lasting pipe is not to be found."

W. B. Nichols of the First National Bank of Dinuba writes: "The pipe which we have been putting in has not been tested out as yet; however, so far as workmanship and manner of going together is concerned, it is entirely satisfactory and I have every reason to believe that it will stand all reasonable tests and prove just what we want."

A block of Tragedies on the J. B. Cory ranch in San Joaquin county, next to a block of Robe de Sargents, shows markedly better crops on trees which are closest to trees of the other variety.

The California Food Products company which was incorporated last week have announced that they will immediately construct two new cotton gins in the Imperial valley which with their other three gins will enable them to handle a much larger volume of cotton seed. The company also proposes to put several new food products on the market, to be made from cotton seed.

Classified Advertisements.

MISCELLANEOUS.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

APPLES! Buy direct from producer. Newtowns, 90c; Missouri Pippins, $1.00; Bulk pack, 4 and 4½ tiers, equal proportion. No. 2 grade for cooking, 65c. Edwd. A. Hall, Watsonville, Cal.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

SAVE MONEY ON YOUR PUMPING PLANT—We are reducing our stock of Gas Engines, Oil Engines, Centrifugal Pumps, Friction Clutch Pulleys, etc., and can name you very low prices indeed. Write us at once. Commercial Iron Works, 481-497 Fifth St., San Francisco, Cal.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

SOMETHING NEW—Buy your Tea and Coffee from the importers. Always fresh. Write for list. THE WM. J. SCHROTH CO., 112B Market St., San Francisco.

ASK FOR SNOW'S GRAFTING WAX—If your grocer does not have it, send to D. A. Snow, R. 3, Box 255, San Jose, Cal.

FOR SALE—Baled alfalfa hay in carload lots. Write V. L. Wiser, Gridley, Cal.

TREES AND NURSERY STOCK.

WALNUT TREES — Late blight-resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California black root, as the California Black root is to the English root—Eureka Franquette, Mayette, Neff's Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks' Building, Stockton Cal.

ETTERSBURG STRAWBERRIES — Plants: dozen 25c 100, $1.50; 1000, $10. Delivered. E. Welty, Ripon, Cal.

WALNUT TREES—San Jose Mayette, Barry Mammoth—on California Black Root, at lowest prices. San Jose Mayette, Barry Mammoth and Franquette Grafting Wood for sale. California Black Seedling Trees. Write for our low prices. Mammoth Walnut Nurseries, P. O. Box 597, Watsonville, Cal. Nurseries at 80 Tully Road, San Jose, and Watsonville, Cal.

TRIBBLE NURSERIES, ELK GROVE, CAL.—Grafted walnuts and grafted paper-shell pecans. Exclusive propagators of Tribble, Mayette, Kerr Parisienne, Glady and Improved Franquette. 19 other varieties. Fine stock of almonds, prunes, Bartlett pear on resistant roots, and other fruit trees and plants. New list ready.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

WALNUT TREES—Eureka and El Monte varieties a specialty; also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

EUREKA WALNUTS are the best grafted on native black roots. You'll be surprised at our prices. Write today—tomorrow never comes. Geyer Bros.' Walnut Nursery, 214 S. Almason St., Alhambra, Cal.

RHUBARB PLANTS—Crimson Winter 1 year, per hundred, $2; 2 year clump, each 10c. Seed per pound, $3.50. Wagner's Giant, 1 year, per hundred, $3.50. Currier Bulb Co., Seabright, Cal.

FRANQUETTE AND MAYETTE grafted on California Black. Sizes 3 to 10 feet. Prices reasonable. Special discount on large orders. Sunset Nursery, 525 W. San Carlos St., San Jose, Cal.

FOR SALE OR EXCHANGE—1500 San Jose Mayette Grafted Walnuts. Six to ten feet. Price low or will exchange on light auto or good heavy team. Chas. Story, Rivera, Cal.

FOR SALE—Two and three-year-old Mission Olives, propagated from my own trees—no mistake about variety. Also Thompson Seedless Vines. W. A. Hayne, Box 461, Marysville.

SOUDAN GRASS SEED—California grown and pure. For prices write undersigned and state quantity wanted. George Boock, Los Molinos, Cal.

WAGNER'S CRIMSON GIANT WINTER RHUBARB—Subdivided plants. $15 per 1000; $2 per 100. G. E Shelford, Healdsburg.

SPINELESS CACTUS for seed, $5 per ton. G. E Fillbrook, Lakeside, Cal.

BARTLETT PEAR TREES—$10 per hundred. N. M Cunningham, Red Bluff, Cal.

PRUNE TREES—12 cents. Walnuts, 30c. Cash Nurseries, Sebastopol, Cal.

WANTED.

MACHINE MILKER with Milking Machine and Babbock tester wants position. Understands modern dairy testing and management. Will rent fully equipped dairy. Box 201, Pacific Rural Press.

EXPERIENCED, RELIABLE RANCH SUPERINTENDENT wants position. Diversified farming, dairying, irrigation, registered live stock, poultry; references. Box 202, Pacific Rural Press

WANTED—About sixty young men and women to enterr the WESTERN NORMAL on January 1, 1916, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We save you time and money. For information address, WESTERN NORMAL, J. E. HUMPHRIES, Principal, Stockton, Cal., Box 704.

MOGUL TRACTOR—45 H. P. with Saunders disc plows. Cuts ten feet. Used one season. Has plowed but 1100 acres. Fine condition. Will demonstrate. Have no use for the outfit, so will sell at half cost and give terms; or exchange for horses, mules, or cattle. Address W. H. Hord, 704 Market St., San Francisco.

WANTED—Position as manager of large orchard, vineyard, dairy, alfalfa and grain farming by a man with many years of practical California experience. Reference, Room 114, Hotel Andrews, San Francisco.

EXPERIENCED ORCHARDIST is open for position as manager of orchard, general farm or dairy. Address Box 200, Pacific Rural Press.

LAND FOR SALE.

CALIFORNIA STATE LAND INFORMATION BUREAU, 1511 K Street, Sacramento, offers you the following: for $5, Lists of STATE LAND (about 100 pieces), any 3 counties, lists of INDIAN Land; Lists of 600,000 acres of SCHOOL Land, that you may apply for NOW; plat of best homestead, timber land that we know of; additional list FREE upon request; other lists, services until 1917.

For $2.50, State lithographed County township map, of California, showing 600,000 acres of SCHOOL LAND marked on it, by hand. For $2.50, any County sectional map, showing GOVERNMENT Land marked on section or part of section, with towns, streams, railroads, wagon roads. It is to YOUR interest to order NOW. Personal checks accepted.

GOOD PROPOSITION—40 acre alfalfa ranch, ½ mile from Hughson. Good buildings; family orchard; large shade trees; reasonable price; good terms. The Holstein cattle and the machinery that go with the ranch comprise one-third its value. J. N. Strener, Route 1 Box 5, Hughson, Cal.

CALIFORNIA LAND—Money-making little farms, high class, low-priced properties in all counties. Call or write the oldest land office in California; we will save you 25 to 50 per cent. C. M. WOOSTER CO., 302 Phelan Building, S. F. Catalogue free.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

ACRE CHICKEN RANCH FOR RENT—Sure living for couple. Attractive bungalow, gas, electric, fruit trees. Equipped for 400 chickens. Good furniture. Some stock. Incubators at sacrifice. Five minutes car. 295 Page St., San Jose.

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WANTED GOOD FARM, or unimproved land from owner H. L. Downing, 145 Palace Bldg., Minneapolis, Minn.

FOR RENT—300 acres of alfalfa land. Apply to J. H. Glide, care West Sacramento Co., Sacramento, Cal.



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How Old is Your Horse?

[Written for Pacific Rural Press.]

What is the age of your horse? Most any experienced horseman will answer the question almost as accurately as though he had raised the horse himself if he can get at the animal's mouth a minute or two. The practice is as old as the hills, yet many a horse owner doesn't know the principles for determining ages in this manner, and a horse's age is of great importance in determining values.

The incisor teeth of the mature horse, of which there are six on each jaw, are most commonly used for age judging. The first pair of incisors make their appearance on the colt's jaws, both upper and lower, soon after foaling, and at six months of age a colt should have all three pair.

Three Years Old.—The permanent pair of center incisors do not generally replace the temporary incisors till a horse is about three years old, at which time they are ready for use. These are longer than the temporary teeth and easily recognized by the deep, hollow cups.

Four Years Old—At four years, the intermediate pair of permanent incisors are up and ready for use. The cups in the center pair are now about one-third worn down.

Five Years Old.—The five-year-old horse should have all of his permanent incisors. By this time the cups of intermediate incisors are worn down about one-third, and the center ones have become rounder on the inside and show wear. The cups are now about two-thirds worn down.

Six Years Old.—At six years the corner incisors show one year's wear on the cups, the intermediate cups are reduced to one-third, and the cups in the center incisors on the lower jaws have practically disappeared.

Seven Years Old.—By this time the cups in the corner incisors are badly worn, and nearly disappeared in the intermediate incisors. Where the upper corner tooth overlaps the lower one a notch appears. The teeth have become rounder from the outside and are thicker in shape, also meeting at a sharp angle.

Eight Years Old.—At this time the cups in the upper jaw incisors are showing wear, and the cups in the lower corner incisors are about worn down.

Nine Years Old.—Because of the fact that cups in the upper incisors do not disappear at such regular intervals as in the lower teeth, it is not so easy to determine age accurately by this time. Usually, however, the cups in the upper center incisors have worn off by this time.

Ten Years Old.—The teeth now are more triangular in shape and the cups in the upper intermediate incisors are about worn down.

Eleven Years Old.—While in some horses cups are still found in the upper as well as lower incisors, it is not unusual to find cups in the upper teeth for two or three years yet. The cups at this age have, however, usually disappeared.

Twelve Years or More.—With increasing age, the incisors of upper and lower jaw become more triangular and meet at a sharper angle. At this time a horse's worth is largely dependent upon his individuality, and a year or two one way or the other is not nearly as important as his general ability.

CREAM POOLING ASSOCIATION.

Dairymen in the vicinity of Ripon, San Joaquin county, have recently formed a cream pooling association, through the efforts of the County Farm Bureau and the local Farm Center.

The association controls the output of 1,000 cows in that territory, and have contracted with a Stanislaus county creamery for their entire year's fat production.

As the dairies in that section are usually small, and the cost of cream collection runs up on that account, it has been possible for the association to secure a better price than has heretofore been possible for its members. The association has its own tester and in case of any dispute between patrons and creamery regarding the test, the case is put into the hands of a grievance committee, composed of one dairyman, a representative of the creamery and a person who is neither a dairyman or creamery man. Results in this particular case have been satisfactory so far and steps are being taken to organize dairymen in other sections of the county in the same manner.

Objections to the plan which have been made to us by creamerymen are that it gives undue advantage to the large plant who is financially able to handle a large output and takes the matter of quality out of the hands of the creameryman to a large extent. Only time will tell whether the plan is a good one and worthy of more extensive practice, but in the main it is poor practice to freeze out the little buyer to be later man-handled by the larger one when he gets a monopoly.

Save Money on Wire Fencing!
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Warner Fencing $4.10, $4.90, $5.55 per Roll, for Stock and Poultry

This class of fencing is known all over the country and usually sells for considerably more. First placed on the market some ten years ago to meet the demand for a substantial combination stock and poultry fencing.

It is closely woven and made of No. 14 galvanized wire, the spaces between the wires being graduated from the small mesh at bottom to keep chickens in, to the regular stock fence mesh at top. Has heavy cable edge at top and bottom, which enables it to withstand sudden shocks without injuring the fence.

Ten rods to roll and sold in full rolls only.

Height inches	Approx. Wt. per rod	Stays in ches	Bars number	Price per roll
35	7	6	15	$4.10
45	8	6	17	4.90
55	9.2	6	20	5.55

POULTRY FENCING $3.25, $3.60, $4.30, $ 4.90 PER ROLL—GRADUATED MESH—GALVANIZED

Has many advantages over the ordinary poultry n etting, being three times as strong, does not require a top or bottom board, as the selvege wire at top and bottom may be stretched to give perfect close fit to ground, and the top affords no place for chicken to rest.

All the features of the popular heavier fencing, including the interlocking mesh, with special graduated mesh to keep small chickens in. Sold in full rolls. 3 ft. high, $3.25; 4 ft. high, $3.60; 5 ft. high,$4.3 0, and 6 ft. high, $4.90.

WARNER HOG FENCING $5.00

Specially woven hog fencing, with barb wire selv ege at bottom, which effectually prevents hogs raising the fence, and does away with the necessity for and ex pense of bottom boards.

Made of best quality No. 14 galvanized wire, he ight 26 inches; weight per rod 4.5; stays, 6 inches; with 7 bars barbed at bottom. Sold in 20-rod rolls only, $5.

POULTRY NETTING 45c, 60c, $1.10
GALVANIZED—2 IN., 1½ IN., and 1 IN. MESH.

A great special buy, amounting to almost a full carload, in these much wanted sizes. Remember, it's all perfect in every way.

1 in. mesh, $1.10 per 100 sq. ft., 18, 24, 36 and 48 i nches high. 1½ in. mesh, 68c per 100 sq. ft., 24 inches high only. 2 in. mesh, 45c per 100 sq. ft., 18, 24, 36 and 72 inches high.

These prices will apply only so long as this lot remains in stock, so get your orders in early as they will be filled subject to stock on hand.

FENCE STRETCHER AND COMBINED HOIST $1.25

A most necessary tool in erecting wire fences and very handy to have on the farm at all times.

May be used as a lifting hoist, similar to block and tackle, has automatic catch which holds wire or load at height required. Thousands in successful use. Two sizes, $1.25 and $1.50 each.

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—A splendid quality of roofing paper that most firms would sell 20 to 40 per cent higher. Each roll complete with necessary cement nails, etc., ready to lay.

1-ply, double-sanded, per roll of 108 square feet	$1.15
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3-ply, "King" smooth, per roll of 108 square feet	$1.75

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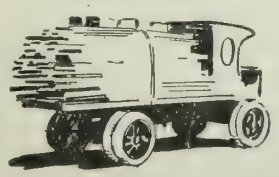
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Standard House and Floor Paint $1.50 gallon.
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—Good new rough Oregon Pine Lumber, all sizes, at $10 to $15 per thousand.
—Oregon Pine Lath, 4 ft., new, $2.50 per thousand.
—Best grade Slashed Grain Oregon Pine, sanded finish, $37.50 per thousand. This makes a beautiful interior finish.
—These prices will give you an idea of how our lumber department can save you money. Send in your lists and let us give you our price delivered.

$30 Wallboard $19.00

The highest grade wallboard on the market; made of 3 layers of moisture-proof fibre, with asphaltum between each layer; or cream white fibre board. Cheaper and neater than plaster or lumber and any one can install it in one-quarter of the time. Per 1000 square feet $19.00

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More and Better Hogs in California.

[Written for Pacific Rural Press.]

ALFALFA LEADERSHIP MEANS HOG LEADERSHIP.

Wherever agriculture is practiced in California, if the soil is a few feet deep and is not watersoaked for too long periods, alfalfa can be grown.

In sections of no irrigation, it may yield only one or two crops, but even these may be made to furnish succulence for hogs the year around. Geo. A. Smith of Corcoran makes good silage from the weedy early cuttings of his alfalfa, while the neighbors are vainly trying to cure their crops between rains. Though he has irrigation and other feeds when alfalfa isn't growing, he fills two 40-foot silos without even chopping it. The unchopped alfalfa does not spoil because two men tramp it down and its own weight in so tall a silo makes it settle well. So, in dry farming, to make alfalfa furnish succulence the year around, it is only necessary to plant a large enough acreage and then silo most of it.

Alfalfa from Start to Finish.—In irrigated sections, alfalfa forms a staple part of the ration from the time a pig is two weeks old until he goes to market. It is fed as pasture, soiling crop, hay, meal, and chopped alfalfa. It forms a valuable part of the ration wherever both hogs and alfalfa are grown; except where it forms the whole ration.

More stunted hoglets are produced on alfalfa than on any other one feed, because of the deceptive advertising of alfalfa as a complete ration, which it is not.

Animals must have certain amounts of several classes of feeds, two of which are most usually unbalanced, proteins and carbohydrates. Although, according to Woll's Handbook for Farmers and Dairymen, alfalfa furnishes a trifle over three times as much digestible carbohydrates as protein, there are still not enough carbohydrates to supply growing pigs, to say nothing of fattening hogs.

So if, as we have seen time and again, pigs are required to live on alfalfa alone, they eat all their pot-bellied sides can hold, in order to get enough carbohydrates. An excess of indigestible fiber fills them up too soon, so that after all they stunt because half-starved for carbohydrates.

Older hogs fed entirely on alfalfa do not have the ravenous growing appetite of a pig and also do not require so large an amount of carbohydrates per pound of hog, so they do not always get pot-bellied by eating too much, but they waste a large proportion of excess protein; and their rate of fattening is slowed down by the small total carbohydrates they can get in a day's eating of alfalfa. By the time they are big enough to fatten they are too old to be good eating, so they are retailed for less per pound than the Eastern pork; and the California prices to the growers are today based largely on the quality of similar old hogs.

Moreover, six weeks of grain feeding did not take the green taint from the flesh of an entirely alfalfa-grown hog observed by Chas. Goodman of Williams.

Alfalfa Balances Grain.—But alfalfa with a proper amount of feed high in carbohydrates (usually grain) is the basis of nearly all successful hog growing in California, and our "leadership in alfalfa" is one of the great reasons why our State should and may produce more pork than any other State in the Union.

CONQUER TRICKY HORSE.

To the Editor: I have read about Geo. E. Wright and his troubles with his saddle mare, and also the suggestions of two parties as to the best way of handling the animal, in the Rural Press of Oct. 2nd and Nov. 6th. I think all three of those men have a little more to learn about horse nature. A horse has more intelligence than he is generally credited with. What he learns once he never forgets, let it be good or bad. So the main thing in breaking a horse is to see that he learns good habits instead of bad. A horse can size up his master as to whether he is afraid or not and will act accordingly. If he thinks his master is afraid of him, the horse will have a new trick to perform every day. But if, on the other hand, he finds that his master is really master of the situation he will quail, and in the course of time will be good. What Mr. Wright wants is a good strong saddle and bridle, a heavy quirt and pair of spurs. With a piece of strong, small-sized rope, place a noose around the horse's nose tied with a bowline knot under the jaw, tieing the other end of the rope into a ring strapped to the center of the cinch. This will prevent the horse from going over backwards. Cinch the animal tight enough so that there is no danger of the saddle turning. Then get on without any preliminaries such as leading around, etc., and with the quirt and spurs get right down to business in true cowboy style. To the victor will belong the spoils. If Mr. Wright wins out, the horse will acknowledge its defeat by doing its work. May be a little sulky for awhile, but with kindness will develop into a good animal. By all means be kind to a conquered horse; don't abuse him because you can. If the horse wins out Mr. Wright should sell, because a horse that wins is dangerous until it meets its master.—A Lover of Horses, San Andreas.

SADDLE CINCHING: JERKIE.

To the Editor: Some time ago you asked for a recipe for making jerkie. Cut the meat in thin narrow strips and dip in a strong brine of salt and water and hang out on a line in the sun to dry. A little pepper added to the brine helps to keep the flies off. One-fourth of a minute is long enough for the meat to be in the brine.

Another party wanted to know how to break his horse from pulling back and rearing up when he cinched the saddle on. He should put the saddle on and just tighten the cinch a little and then lead the horse around and tighten a little more, this way taking a little time and use a little headwork and treat the horse kindly. The trouble has been he cinched the horse too quickly and too tight all at once. E. W. Crow.

Crow's Landing.

Once Over!

Two diskings in one with a double-action harrow!

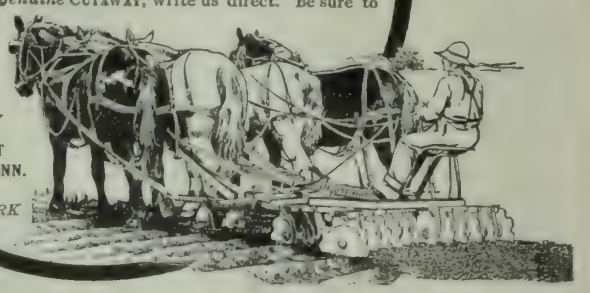
Cutaway (CLARK)

Disk Harrows and Plows

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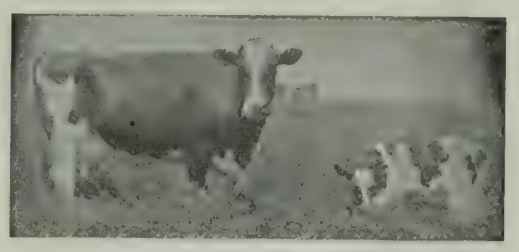


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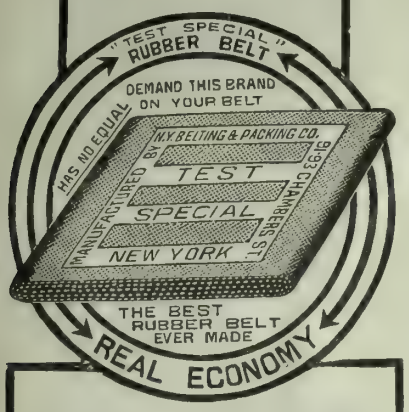
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Mutton Sheep on Small Farms.

[Written for Pacific Rural Press.]

ERRORS TO AVOID.

If sheep make money when allowed to run the year around on native grass pastures, with no other feed or shelter, and together with the bucks all the time, there ought to be money in taking care of them.

Walter Pitts of Butte county has 60 to 100 sheep which have the run of about 60 acres of natural grass, with no other provision for their care. He sheared 48 year-staple fleeces last fall and sold them for $73.50. He gets 8 to 9 pounds of clean wool per old sheep. He also sold 35 or 40 to the butcher this season weighing about 100 pounds. The butcher comes weekly for a few at a time.

From experience, Mr. Pitts speaks of several things for sheep growers to watch.

The greatest loss is where young ewes have twins and walk off with one while the other is asleep or playing. Old ewes are more careful, often noticeably watching both of their lambs. Sometimes when lambs come in early winter or in summer, there is not enough feed to keep up the milk, and one or both lambs are lost.

Some of the lambs came this year in early December. These are the most profitable if they live through, because they mature sometimes in May, ahead of the rush of lambs from range flocks. Summer lambs also mature at an odd season of high prices.

If it storms during the first three or four days after a lamb is born, it is taken to shelter—after four days it stands winter rain pretty well. Most of the rains in Mr. Pitts' country come at a temperature of 50 to 60 degrees. Cold prolonged rains do more damage.

Watch for Maggots.—It is a vital need when warm spring showers alternate with sunshine, to watch for the big green "blowflies." If sheep are restless, lie down often, and repeatedly nip themselves, principally between the hind quarters, the fly maggots are probably burrowing into the flesh. This part is then sheared close as possible and swabbed with diluted sheep dip, scraping off the maggots as they work out of their burrows. Mr. Pitts thinks he killed a lamb or two one time by using turpentine too strong for this purpose; but with the sheep dip treatment, hasn't hurt them and hasn't lost any with maggots for two years.

Foxtail dries up along in May, and then the little lambs very often get some in their eyes, which would be blinded if untreated. Mr. Pitts shears them close all around the jaws, eyes, and ears, and then if any get the foxtail in their eyes, he lifts the lids and pulls the spears out. Sheep are not bothered, and lambs are not except three or four weeks while it stands up dry.

TESTING CREAM WITHOUT SCALES.

To the Editor: Is it possible to test cream correctly without weighing it? The scales that are sold for that purpose are so expensive. Can any other kind be used?—W. B. B., Modesto.

[To be exact in cream testing it is necessary to have a set of scales accurate and sensitive to at least one-tenth gram. This is necessary, as cream varies in weight with its richness and mechanical condition and no one measure will hold the absolutely correct amount of cream of varying richness.

As sensiitve scales are usually lacking on the average dairy and as maximum accuracy is not so essential, the cream may be measured into the test bottle with a 9 cubic centimeter pipette, instead of being weighed. In this case the pipette should be rinsed out twice with warm water and the rinsings transferred to the test bottle; otherwise the test will be too low.

When cream is measured into the test bottles, care should be taken that it is not permeated with foam. Freshly separated cream contains considerable foam, and if the measuring is deferred for at least half an hour, the air has a chance to escape. A reasonably accurate test can then be secured by again stirring the cream before sampling. It should be understood, however, that tests made by measuring cream are only approximate and are not entirely comparable with the more accurate weighing of the cream, as practiced in the creamery.—Editors.]

ADVANCE OF THE SILO AT THE EAST.

The silo becomes more important each year as a means of utilizing the corn crop, says the Rural New Yorker and gives these figures for it: Five years ago only 3½ per cent of the total crop went into the silo, and 11 per cent in addition was cut and fed green. In many of the States less than half the corn is left to mature grain. See what the silo has accomplished in the following named States:

	Percentage of Crop. Cut for silo	Cut for green feed.
Maine	35	15
New Hampshire	65	6
Vermont	74	5
Massachusetts	58	10
Connecticut	55	3
New York	49	9
Wisconsin	36	18
Michigan	28	13

Last year the corn grown on 8,364,000 acres was put into silos. This year there is probably a gain of 1,000,000 acres. We see that through New England and New York less than half the corn is matured for grain. Even in States like Illinois and Indiana about one-fourth of the great crop is fed green or put into the silo. There is only one way to look at these figures. They show that the silo is gaining in popularity, as year after year the great value of silage is demonstrated. Where corn brings the highest price there the largest proportion of the crop goes into the silo. As the cultivation of alfalfa spreads through the East there will be more silos. Alfalfa fits the land for more corn, and good silage and alfalfa hay are pretty close to a full balanced ration.

England has ordered $4,866,500 worth of cheese from New Zealand for the Army. This is about 1-5 of the Dominion's production. The price is 14 cents per pound.

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DAIRYING.

A new dairy barn is being constructed on the H. H. Coke ranch near Paige, Tulare county.

Dolcini Bros. of Petaluma have recently purchased eight Holstein cows and a purebred bull in Fresno and Kings county.

M. T. Machado, a dairyman near Gridley, reports satisfactory milk yields from his cows since he began feeding beet pulp and barley.

More than a ton of butter a day is being turned out by the two cream eries at Orland, which indicates that the dairy cow is gaining in numbers there.

The Pacific Coast Condensed Milk Co. have contracted with France and England for their supply of condensed milk during the next two months.

David Salfield has purchased a 100-acre ranch in the Escalon district of San Joaquin county and will establish a herd of purebred Holsteins. He expects to build modern buildings.

A creameryman at Willows has recently been fined $25 for giving a false cream test to one of his patrons. The complaint was made by J. H. Severin, State Dairy Inspector for that territory.

The directors of the Fountain City Creamery at Merced have decided to increase the capital stock of the concern from $6,000 to $30,000 and to change the name to the Merced Creamery.

Wm. J. Heil of Santa Ana has purchased the Guernsey bull Soledad Buttercup from E. R. Frey of Byron, Contra Costa county. Mr. Heil also purchased a Guernsey bull from the Dr. Henderson herd.

The Humboldt Dairymen's Ass'n will hold a meeting January 11, at which time plans will be gone over for the entertaining of the California Creamery Operators Ass'n which is to hold its annual convention this year at Ferndale.

Fred W. Kiesel of Sacramento has purchased 28 head of registered Holsteins in New York. Dr. E. J. Weldon did the buying for him. They will be placed on the Keisel ranch near Sacramento where there is already a good-sized herd of Holsteins.

From January 10 to 15, Dr. Haring, professor of veterinary science of the University of California, will visit dairy farms and deliver talks to the Farm Bureaus of Stanislaus county on the control of contagious abortion and tuberculosis.

According to reports from Vina, Tehama county, 6,000 acres of the Stanford University Farm at that place will be cut up into 100 dairy farms and leased to dairymen. This land will all be seeded to alfalfa and we understand one or two tenants are already on the ground.

The leading cow in the Tulare Cow Testing Ass'n for the month of November was a registered Jersey owned by Chas. McFarland which gave 990 pounds of milk containing 58.7 pounds of fat. There were 12 cows in the association which produced over 45 pounds of fat during the month.

Sidgley Wilson of Phoenix, Arizona, shipped 120 head of grade Holsteins from Modesto last week to supply the demand for dairy cows in the Southwest. He also shipped three registered Holstein bulls. He has shipped several carloads of dairy cattle from Stanislaus county to Arizona points before.

We are in receipt of the annual report of the San Francisco Wholesale Dairy Produce Exchange which shows that there was a gain in the receipts of butter at San Francisco of 5,868,850 pounds during 1915 over the year 1914. There was also an increase of 1,228,600 pounds of cheese during that time. The average price of butter during the year was 26.29 cents per pound and the average of cheese 13.28 cents per pound. The total receipts of butter during the year were 28,349,400 pounds, and of cheese 11,117,900 pounds. These figures include interstate and foreign importations.

In feeding his registered Holsteins, H. E. Cornwell of Stanislaus county feeds 25 pounds of alfalfa hay and two pounds of the following mixture, varied of course according to the judgment of the feeder: 1 part rolled barley, 1 part cocoanut meal, ½ part molasses and ½ part dried beet pulp. Besides this the cows are allowed to pasture a short time daily. The 30 head, 10 of which are strippers and 13 with their first calves, are averaging three gallons of milk daily on the above ration.

SWINE.

Two carloads of hogs were shipped to San Francisco last week from McFarland and one from Tulare by Belknap and Thompson.

A. N. Scott of Upper Lake made a large shipment of hogs to the San Francisco market last week. The hogs were said to be in fine condition.

U. Hartman of Manteca has lately shipped two registered Berkshires to Fallon, Nevada, and also sold a young boar to Hans Stolzel of San Joaquin county.

Judge W. T. S. Harding of Eureka, Humboldt county, is said to be establishing a large herd of Duroc-Jersey hogs on his ranch in southern Humboldt county.

W. M. Mikesell of Manteca believes in breeding for the long roomy type of hog as the sows are capable of raising more pigs. He now has 30 head of registered Berkshires on the ranch.

Two carloads of hogs were shipped from Chowchilla last week and with the shipment of two more cars which are about ready for market the supply of porkers there will be about cleaned up for the time being.

Fred Treat of San Lucas, Monterey county, reports that he has had fine success with white clover, having cut three crops of hay without irrigation from a 38-acre field and also pasturing a large herd of hogs on the same field.

J. L. Thatcher of Riverside county reports that he has just returned from a trip east where he purchased a carload of registered Berkshires that will be brought out just as soon as State Veterinarian Keane will permit shipments from all parts of Iowa.

J. E. Thorpe of Stockton has recently formed a partnership with H. J. Colberge of Stockton and will branch out materially in the raising of purebred Duroc-Jersey swine. The new firm has near completion a hog barn 26x40 feet, with a driveway down the center and loft for grain overhead. Mr. Thorpe will act as manager of the new concern.

M. Bassett of Kings county has received a $5 prize from the Chicago Livestock World, which was awarded him on the recommendation of J. M. Kemp, who stated that the Poland-China boar Banker's Boy, shown at the P. P. I. E., was the best boar of the breed he had judged in 1915. As a result of a fight with another boar Mr. Bassett's boar Hustler's Model was killed last week.

We are advised by F. E. Newton of Hanford, Kings county, that the Kings County Poland-China Breeders' Ass'n will sell 150 head of registered hogs at their sale February 5. He further states that every preparation is being made for the sale so that all who attend will be well entertained whether they buy or not. Kings county has an enviable reputation for fine Poland-China hogs and buyers should find a choice lot at their disposal in this sale.

SHEEP.

Stockmen of Nye county, Nevada, are determined not to allow sheep into their county from Elko county which are known to be afflicted with rabies. Deputies have been appointed whose duties it will be to turn back all bands trying to enter the county.

Several large sheep sheds have just been completed on the Stanford University's ranch at Vina, Tehama county.

Bert Vosper and Ben Marcus have entered the goat business near Sonora, Tuolumne county, where they have erected suitable buildings and now have 450 Angora goats.

BEEF CATTLE.

Complaint of incompetent inspectors, both federal and state, was made last week at Chicago before the United States Senate committee which is investigating the recent foot and mouth disease outbreak in eastern States.

Nevada, California and Utah are to make a united stand against

NOTICE!



Wishing to devote my whole time to other business, I have decided to sell out my

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Henry Wheatley : Napa, Cal.

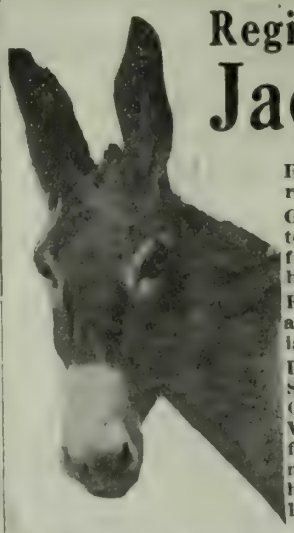
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coyotes in order to check a more general spread of rabies in the three States. Sheepmen in Nevada report the loss of 25,000 sheep during the past few months from this source.

In a letter from O. M. Plummer, general manager of the Pacific International Livestock Exposition at Portland, Oregon, he states that there were 50,000 people in attendance at last year's show and that the dates for this year will be December 4 to 9.

The Porterville Alfalfa Co. of Tulare county is one of the few concerns which has been able to profitably finish range cattle on alfalfa. This company has just marketed two fat steers, the natives averaging 1200 pounds, and still have 275 head in the feed lots.

According to advices from Los Banos, Miller and Lux have had exceptionally good results in feeding their beef steers a ration composed of chopped alfalfa, barley and molasses, during the past months. The mixing is done by machinery and the company is said to have spent approximately $75,000 equipping its different ranches to handle the feed.

HORSES.

The Blackhawk Ranch of Burlingame reports having sold to a company located at Carson, Nevada, the Shire stallion Lucky Boy, a two-year-old California raised animal. They have also sold the imported horse, Anwick Arthur, to a company at Salinas, and Black Hawk Minstrel, a California raised horse, to the Danberg Co. of Minden, Nevada.

According to dispatches from the east, the Board of Health of New York will permit the sale of horse meat in New York City from this time on. The report states that hereafter old horses will be fattened and sold for meat instead of being sold for their bones. It is doubtful whether this ruling will materially reduce the cost of living of New Yorkers.

PAYING MORE FOR GOOD CREAM.

[Written for Pacific Rural Press.]

Cream grading in some form is being practiced by practically all of the creameries purchasing cream in the portion of Stanislaus county east of the Stanislaus river.

The Modesto creamery, which is the largest buyer of fat in the county, started the movement November 1, when they established a ruling that they would pay four cents above the San Francisco butter quotation for cream testing over 33 per cent fat and three cents over for cream testing under 33 per cent. This ruling has not only made a vast improvement in the quality of the cream but is highly satisfying to dairymen, as they have more skim milk for their hogs with a high testing cream and the additional cent a pound runs into money in a month's time.

Other creameries in the locality are buying on the same principle, only one exception being reported.

COMING AUCTION SALES.

California Swine Breeders' Consignment Sale, State Fair Grounds, Sacramento, January 27, 1916.

First Annual Sale of Kings County Poland-China Breeders' Ass'n, Fair Grounds, Hanford, February 5.

Second Annual Consignment Sale of California Draft Horse Breeders' Ass'n, University Farm, Davis, February 2.

LIVESTOCK DIRECTORY.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

FRANK MEACHAM, Petaluma, California.—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Purebred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, addresss J. B. Agee, Napa, Cal.

SUNNYBROOK RANCH, Willits, Cal.—Breeders Registered Holstein stock. Young bulls for sale sired by Ruby Gem Cavary Lad. Prices reasonable.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

REGISTERED HOLSTEINS — A ten-month-old bull, $125, one five months for $100, and bull and heifer twins for $100. K. W. Abbott, Milpitas, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd, W. F. Mitchell, Visalia.

THREE REGISTERED AYRSHIRE BULLS—Serviceable age. Dams heavy producers. $150 to $200 each. J. W. Hanner, Patterson, Cal.

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The Bull is a dandy, straight, nicely marked, being half white. He is just what you are looking for and is worth twice what I am asking.

Write, or better, come and see him.

F. H. STENZEL, San Lorenzo, Cal.

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[Answered by Dr. H. B. Wintringham, Petaluma.]

Correspondents desiring a reply by mail should send money order for $1.00. No charge is made when questions are answered through this department.

FROSTED ALFALFA DANGEROUS.

To the Editor: Frost came in early November this season and cooked the top growth of alfalfa till the fields were brown on top, though nice and green underneath. The cows seemed to eat the frosted ends first and enjoyed them; would clean off the tops before they would go down after the green alfalfa and barley sown in the early fall for the winter feed. At first we noticed that some of the cows scoured badly and would grunt as if in colic. In most cases it passed off; but one cow that was to freshen in about a month would strain and lie around; and finally died. We cut her open and the calf was dead and had been apparently for some time. In a few weeks a change to another field, and a cow with her second calf had the scours and aborted a seven months calf; is doing well now. An old cow probably about the sixth calf aborted at six months, looks rather ornery but is eating well. Heifer to have second calf, full time but calf came dead. Can not tell if it was from frosted alfalfa or not. The calf had appearance of being choked in delivery. Frosted alfalfa is something new to us; it may have happened before, but we have never noticed it. Nothing else in the field that we can think of that might give us the trouble. They have an abundance of hay and plenty of pumped water; are dehorned and handled carefully. Other fellows that are having the same trouble, tell me that when they have lost cows they cut them open and found the stomach packed full of the offending alfalfa. We have had no rains or exceptional cold to start anything from exposure. — G. A. A., Glendale, Ariz.

[Your trouble is undoubtedly due to the eating of frosted alfalfa. Frozen foods of all kinds decompose rapidly, and are not fit for consumption either by humans or our domestic animals. Two pound doses of Epsom salts dissolved in water would be of great benefit to affected animals. Your surest cure is prevention by discontinuing the use of such pastures as you describe.]

WILD COW.

To the Editor: My cow, 4 years old, has had two calves, is awful wild, acts like a broncho. I tied her up but she went through the fence, broke the posts, and cut the hind part of her bag so she could hardly walk. Now that she has recovered, I have to rope her again. When a stranger comes she gets nervous and excited, and hikes. She gives good, rich milk. Sometimes I had a notion already to try a shotgun on her. J. P. G., Dinuba.

[The shotgun treatment will probably be the best.]

COW'S SKIN CRACKLES.

To the Editor: I gave a young cow Epsom salts and raw linseed oil for indigestion. Some of the oil went into her lungs and almost strangled her to death. She seems to have most of the oil out of her lungs and has a good appetite. But there seems to be air under her hide. In passing the hand over her body, it sounds like crumpled paper. Across her back just in front of her hips is a place as large as a wash basin puffed up about two inches.—A. C. N., Edenvale.

[This is Thurlow's Disease and is due to digestive disturbances. Give fluid extract of nux vomica in one-dram doses twice a day.]

HORSE HAS BAD BLOOD.

To the Editor: My horse, 12 years old, is doing very poorly of late. He has a good appetite but don't seem to digest well and has bad spells of scouring at times. I thought his teeth had something to do with it and had the dentist file them down good, which I think did some good. Blood seems to be very bad as any little scratch or sore, which is easily made where hames or halter touches, festers and runs badly, and is hard to heal up. Urine is very thick. He drinks as much water as two ordinary horses should. He has the best of feed, good alfalfa with rolled barley and Egyptian corn. He is a free worker and a fine traveler, but his feed don't seem to hold out between feeds while working.—F. E. D., Escalon.

[Have this animal tested for glanders. If animal does not react, put it on Fowler's solution of Arsenic, ½ oz. three times a day.]

SICKENS AFTER FARROWING DEAD PIGS.

To the Editor: A brood sow 3 years old was vaccinated 2 months after being bred. She farrowed Sept. 15, five pigs in all stages of development and decomposition, and two alive. These two she refused to nurse; would allow me to handle or milk her at will. It was necessary to dry her up at once. She seemed normal until Nov. 30 when she was bred again. The morning after breeding she seemed to have lost all control of her front legs, turning her head 45 degrees to the right, staggering, and falling repeatedly. This seemed to partially pass away after 5 or 6 days and she came back to normal feed. Twenty-one days after breeding, a more severe attack came on, from which she does not seem to be able to recover. She is unable to get on her feet and refuses to eat, without drenching. The right side of the head and body half way to the flank seems very sensitive, though there is no swelling or discharge from the ear but a slight discharge from the snout which does not look like pus. Temperature is normal, but the muscles of the ear are relaxed. She has never been roughly treated and we have no foxtail. The application of cold mud behind the ear seems to relieve her. The eyes roll, but she sees and hears well and is gentle.—H. S., Woodland.

[This is a form of poisoning due to the absorption of the putrid products caused by the decomposition of the foetus. Treatment at this late date will probably fail. Try hot douches of 1-1000 Chinosol solution three or four times a day. Give internally 30 grains potassium iodide three times a day in 1 oz. water, also 20 grains hexamethylamine in water twice a day between the other three doses.]

CALF CONVULSIONS.

To the Editor: I read in your issue of Nov. 27 of "Convulsions in Healthy Calf" from H. T., Stockton. "Two handfuls of oil cake meal"—at a feed? H. T. did not say a day or a month, so I presume at a feed. Milk—protein. Oil cake meal—protein. Rather dangerous feed, is it not?

I will cite an experience I once had that cost me three purebred calves. I began feeding one teaspoonful of oil cake meal with each milk ration. The calves were doing nicely so I had it increased to two, then to two heaping tablespoonfuls.

All of a sudden something happened to one calf. I will not rescribe the symptoms; you can refer to H. T.'s question—they are identical. I took for granted that poison had entered the system by some unknown way. In several days another went by the same symptoms. I immediately looked for a cause. I changed the quarters, feed, etc., but another died the same day.

Post-mortem was held over both bodies and the same lesions found in both. They were in the kidneys. I took the matter up with several authorities but they gave me no satisfactory answer. A suggestion from one was that I should look for something that would stimulate the kidney almost to congestion. I then concluded at the time that the skim-milk which is high in protein and oil cake meal which is high in protein caused the kidneys (which break down and carry off all protein substances) to congest, caused convulsions, and death. I afterward proved this beyond doubt.

Have you considered that taking fat out of milk does not lower the protein content? Then why do you give "two handfuls of oil cake meal?" I know from feeding experience that ground corn or ground barley will better supplement a milk ration. Give all of this corn or barley ration that a calf will readily clean up.

If you have trouble to start the youngsters eating grain at first, throw a handful in the milk bucket just before they have drank the last pint. One lesson is sufficient.—H. I. B., Fallon.

[What you have written is to the point and correct. A wandering foreign body would, however, give symptoms of a very similar nature, and a positive diagnosis would be possible only on autopsy.]

COWS CALVE PREMATURELY.

To the Editor: I am having trouble with cows losing their calves, at about the fifth or seventh month. After losing the calf, they usually have a white discharge, come in heat regularly but fail to get with calf. Have lost about 10 calves out of a herd of 30 cows. Is this a disease? If so can it be cured, and how, and what effect does it have on the bull running with these cows?—A. B., Visalia.

[This in infectious abortion. Refer to the article on this trouble in the January 9, 1915, issue of this paper.]

HEIFERS DO NOT BREED.

To the Editor: Three of my heifers do not get with calf though they have every opportunity, and I know the bull is all right.—F. M. B., Delevan.

[Dilate the mouth of the uterus just previous to breeding. An experienced veterinarian should do this.]

CALF DOESN'T GAIN.

To the Editor: A calf 1½ years old has had diarrhoea for a year and is in poor condition. I had her on the best alfalfa, but she did not improve, so I tried her on dry feed, but still no improvement.—Sub., Greenfield.

[Have this calf tested for tuberculosis by a qualified veterinarian.]

WARTS ON TEATS.

To the Editor: Warts are gradually spreading to all the teats of my young cow.—H. N. H., Sanger.

[Paint the warts twice daily with a 3 per cent solution of Chromic acid in water. They will disappear in two or three weeks.]

SINGEING RATS DIDN'T WORK.

To the Editor: I saw in the Press of November 20 that one reader advises to singe one or more and turn them loose. I tried that about 25 years ago, but I suppose the rats are about the same now. I singed him and cut his tail off, and turned him loose. In about a month I caught the same old fellow; that time I did not singe him but cut his tail off just back of his ears. That was the last of that one. No rats have left on account of that one being singed.—E. L., Winton.

Baby Beef and Hogs on Alfalfa.

How a Solano County farmer is beating the hay game by walking his crops to market.

Because he couldn't depend upon the hay market, P. B. Grieve of Solano county decided about two years ago to attempt feeding his hay to beef cattle and hogs. During that two years he has satisfied himself that he has hay-selling beat a city block. He still has theories to be worked out in practice, but his system (while simple) is so suggestive of what is possible in many similar locations, that his past experience is well worth the consideration of alfalfa growers.

Like others with hay but no livestock, Mr. Grieve felt the shoe pinch about two years ago. He was farming 50 acres of irrigated alfalfa. Close to him was grain land which could be rented. About 15 miles away was good grazing land in the foothills of Yolo and Solano counties, which could be rented, and about six miles in another direction was land that overflows in the winter and furnishes good summer pasture.

What Mr. Grieve has done is to take advantage of these various factors, fitting each one into its proper groove, with the aim in view of furnishing a continuous supply of excellent feed for beef cattle and hogs.

The mountain range land is best after the beginning of the winter rains when the lower lands become too muddy for cattle. Late or early rains are the deciding factors as to when the cattle are taken to the mountains. Usually about the middle of May these pastures have begun to dry up. These ripe, wild grasses are noted for their value in finishing cattle for the market and as such are used to excellent advantage by Mr. Grieve. By pasturing outside cattle, 3000 acres of this range is rented, the average cost being about 45 cents a month per head. Being fenced and well watered, all labor cost is eliminated, one visit a week being all that is necessary.

From the middle of May till the middle of September, the cattle are pastured on the overflow land. This year 240 acres of such land were rented for $200 and supplied feed for 135 head for the four summer months. This lowland pasture gives the calves which have been dropped in March an exceptionally good start; but by the middle of September it is again necessary to seek new pastures.

By this time the last cutting of alfalfa has been harvested and after irrigating once more, the cattle are turned onto the alfalfa fields and grain stubble. "This," to quote Mr. Grieve, "cleans up the ranch and at the same time puts the cattle in fine condition." The weanlings are now fed alfalfa hay, also the older stock when necessary, and pushed along at a rapid rate. So far there have not been enough cattle and hogs to consume all of the hay grown, but this will be overcome by additional stock in the future. With the start of heavy rains, the alfalfa land becomes too muddy for cattle, so they are taken to the fresh, green grass on the mountain range. Intermingled with the fresh, young grass is the previous year's ripe grass and it is this factor that holds out most hope for the production of baby beef: the ideal so many are striving for.

With highly bred Hereford cows, purebred Shorthorn bulls, and an almost continuous crop of succulent green feed, Mr. Grieve believes he can profitably market long yearlings by having this old ripe grass for finishing purposes. This system will put them on the market sometime in December. An exceptionally good long yearling was turned off in this manner last year, bringing $41.50 from the local butcher. In another year the feasibility of this on a larger scale will be definitely known.

Hogs play no small part in the annual profits of the system, in fact the hogs are a mighty important part Ten brood sows are kept and a registered Berkshire boar used. Two litters a year are farrowed, one in the spring after the heavy rains and one in October. Alfalfa pasture is the chief reliance for feed most of the year, the spring litters being grown on it till after grain harvesting, after which the hogs are finished on the grain stubble. On 200 acres of grain land, Mr. Grieve figures there is ordinarily 1000 sacks of grain which the harvester doesn't get. With hogs on this stubble there is little if any wasted, and it makes fine pork. The fall litters are carried on alfalfa pasture also, being finished on soaked barley in the spring. All of the hogs receive some barley along with the alfalfa pasture at all times. This keeps them thrifty and puts on weight faster. When sold, the pigs weigh between 125 and 150 pounds.

Disease has not so far been a factor. This is accounted for by Mr. Grieve by cleanliness. No wallows are provided, and as the ranch has its own pumping plant there is no chance of cholera being carried onto the ranch in irrigating ditches. Fences are kept up in good shape, crude oil rubbing posts used for lice, and salt and charcoal for worms. At the time of our visit in September, the spring pig crop was ready for market, worth right around $600. Two such crops a year are not to be sneezed at as a side issue.

When he enlarges his herds of livestock, Mr. Grieve expects to walk all of his feed to market. "You came about a year too soon for definite figures," he said, "but I'm satisfied my plan beats hay selling." It would seem that most any alfalfa grower adjacent to a foothill district could profit by a similar plan to the one being used by Mr. Grieve.

WHY NOT ANGUS CATTLE?

To the Editor: What is the reason that more Aberdeen Angus cattle are not raised in this State? Is there some cause that makes them unpopular?—H. I. B., Fallon.

[The Angus cross on grade Durham cows was tried out many years ago by pioneer cattle breeders and produced most satisfactory animals, but were not entirely satisfactory for range purposes. The calf crop was always short and they showed a tendency to become unduly wild in rough sections. They undoubtedly merit more general use than they are put to in this State at present and perhaps this will come when more beef cattle are raised on the farms of the State. They are ideally suited for the production of "light cattle," which for most markets are always in demand.—Editors.]

SHEEP GID PARASITE CARRIED BY CARRION-EATING DOGS.

[From U. S. Dept. Agr.]

The parasite which causes gid in sheep somewhat resembles the hydatid worm. A dog allowed to eat the brain of a giddy sheep may swallow this parasite and later distribute the eggs of the resulting tapeworm over the pasture. Sheep while grazing swallow the eggs with the grass which they eat. In the case of sheep dogs it is important to administer vermifuges often enough to keep them free of these worms. In the case of sheep measles, the bladder worm in the meat, typical of this disease, is swallowed by the dog and again the tapeworm eggs are passed by the dog to grass or water, and there are eaten by sheep.

DOGS CARRY DISEASE.

[From U. S. Dept. Agr.]

Hydatid disease is caused by the presence in the liver, kidneys, brain, lungs, and other organs, of a bladder worm or larval tapeworm. Bladder worms are often as large as an orange and may be larger. A dog which is allowed to feed on carrion or the raw viscera of slaughtered animals may eat all or part of a bladder worm containing numerous tapeworm heads. These tapeworm heads develop into small segmented tapeworms in the intestines of the dog. The tapeworms in turn develop eggs which are passed out in the excrement of the dog. They are spread broadcast on grass and in drinking water where animals can very well eat them and thus become infected. The hog is particularly liable to this disease because of its rooting habits. The eggs may get into human food, and persons who allow dogs to lick their hands and face also run the risk of getting the eggs of the tapeworm in their systems.

Prevention on the farm consists in so restraining the dog that he can not get at carrion or raw viscera. Viscera should be boiled before being fed to dogs and should never be thrown on the fields. If not cooked and fed, viscera and carcasses should be burned, buried with lime, or so disposed of as not to be accessible to dogs. Proper feeding of the dog is essential, and the owner who does not feed a dog properly has no right to keep one.

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We offer for sale to clear out our stock of this year the following registered Berkshire Hogs in prime condition:

20 Boars and 24 Gilts farrowed March, April, May and June, 1915, all sired by Royal Pointer 2d, First Prize Senior Yearling Boar at P. P. I. E. PRICE, until Jan. 1, 1916, $40 each.

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7 Boars, farrowed October and December, 1914, by Hopland Premier, which, owing to lack of care at proper season, are smaller than should be. PRICE, $25.

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Poultry Questions Answered.

[By Geo. H. Croley, President Federated Poultry Association of California.]

SOFT-SHELLED EGGS AND FEATHER-EATING REMEDIED.

To the Editor: What causes my chickens to pull feathers from one another and eat them? Also, what can I feed to lessen the number of soft-shelled eggs? I feed wheat and rolled barley and they have access to dry bran, meat scraps, milk, broken oyster shells and grit. Would like to know the proper way to mix feed to get best results.—Mrs. C., Sacramento.

[Feather pulling is almost always caused by idleness. Make the fowls work hard by scratching for their grain in deep litter and they will not have time to get into mischief. Apply vaseline to the bare spots; this will help a new growth and at the same time discourage any pecking at the new pin feathers. When hens lay soft-shelled eggs while supplied with broken shells the trouble is due to intestinal fat which interferes with proper formation of the egg shell. Our enquirer does not say what proportions of wheat, rolled barley, etc., is fed, but it is evident that too much of these grains are consumed by these fowls in proportion to the bran and meat scrap. The grains furnish most of the materials that produce yolk material, fat, heat, and energy; while the bran and meat contain an excess of the material that makes the white of the egg as well as muscle, frame, feathers, etc. In order to produce eggs in abundance, particularly in fall and winter, it is necessary to feed a ration balanced for egg production. There are hundreds of combinations of grains, meals and greens that may be used to make up a correctly balanced ration. We gave some exact figures in articles that appeared in issues of August 21 and 28 and September 4 and 25, but if it is not possible to carefully carry out the plans suggested in these articles the following rule will help to get somewhere near the proper proportions for egg production: Feed all the variety you can of grains and seeds in litter to induce exercise and prevent gorging, and as many sorts of meals, including brans or shorts, in the mash as it is possible to obtain. Do not omit meat, bone, and green stuff; grit shell and charcoal should be within reach of the fowls always. The feeds used by many of our most successful poultry keepers contain 20 to 40 different materials, even when great care is exercised to produce a ration exactly balanced for egg production.]

MILK WILL NOT CURDLE.

To the Editor: Kindly print some advice about clabbering milk for poultry. Sweet milk direct from the separator seemed to cause sickness and when kept until sour it had a still worse effect. Do you know of some article that can be added to the sweet milk that will turn it to clabber and at the same time not be injurious to the fowls?—F. P. Willows.

[Rennet in the form of tablets, powder, or liquid with directions for use in curdling milk, is obtainable at many drug stores. The failure of milk to curdle or clabber is due to several causes, among which the following are most common: Natural lack of sufficient lactic acid or the presence of foreign substances that prevent proper action of the acid—milk and vessels must be very clean; sometimes a rusty seam in a milk pail or can will prevent proper action. At times it may be due to failure to remove the animal heat from the milk, which results in what is known as a sweet curd which is very likely to be injurious to health. In our opinion the only thoroughly safe way to feed milk is in the form of cottage cheese with the whey removed and thrown away or fed to pigs. We have never experienced any difficulty in getting prompt results when using the following method: Cool milk to about 50 degrees, then heat to about 90 degrees, leaving it at that temperature for two or three hours, after which set it aside and let nature take its course. We had this advantage, however: the milk was produced and handled under the supervision of an inspector. Not all country folks are careful enough in handling milk—they do too many things by guess.]

TICKS INJURE HENS.

To the Editor: I send you some sort of poultry vermin. Just today I found these hid in cracks and between boards. My fowls have not done well this winter, but I have never been able to find any of these bugs on the hens. Tell me what they are, and how to get rid of them. —J. S., Dinuba.

[These are poultry ticks and to get rid of them requires careful and patient effort. The Pacific Rural Press published items regarding these ticks in the issues of Oct. 16 and Nov. 13, 1915. We also advise sending to the Department of Agriculture, Washington, D. C., for circular No. 170, which contains many suggestions and plans for exterminating these vermin and to prevent their infesting poultry houses. It is sent free on request.]

POULTRY NEWS NOTES.

[By Geo. H. Croley.]

The Fontana Poultry Association has been incorporated at Fontana in San Bernardino county.

The poultry keepers of Hessel held a New Year social in the Hessel club house on Friday evening, Dec. 31.

The monthly meeting of the Sonoma County Fanciers' Club was held in the Chamber of Commerce room, county court house, Santa Rosa, on Monday evening, January 3. A. B. Foote is secretary.

As a result of his exhibit in the Panama-Pacific Poultry Show, J. V. McConnell of Garden Grove has booked an order for a Black Minorca cockerel for shipment to the South Sea Islands.

The Cornish fowl, formerly misnamed Cornish Indian Game, is regaining its former popularity. The American Cornish Club now boasts a membership of 336. The annual meetings was held at the Panama Pacific Poultry Show in November.

The Wilson district, near Petaluma, held its Christmas social in the school house during the evening of December 22nd, in connection with an enjoyable entertainment by the pupils of the school under the management of the principal and teachers.

As high as 17 cents live weight was paid in December to turkey growers at Brawley. When the Imperial Valley farmer gets that figure in cash for his turks, including feathers and more or less feed in their crops, he entertains a kindly feeling toward all mankind, including the middleman.

In connection with the effort to make self-supporting all the State institutions, the State Board of Control plans to have the various State hospitals produce the fowls and eggs required by them in caring for their patients. Several of the institutions have in the past and are now producing at least a portion of their own supply, while the others, which have no flocks of fowls, draw large sums of money from the treasury to pay for the necessary supply.

M. S. Woodhams of San Mateo reports that his flock of Buttercups now number over one hundred fowls. They were named Buttercups because of their cup-shaped combs. The males are orange red, while the females are a deep buff with dark spangles. No special mating is necessary to produce the difference colors in the males and females. The eggs are white and a trifle larger than those produced by the Leghorns.

The poultry industry in Missouri is growing faster than any other branch of agriculture at present, for people are beginning to realize that the revenue from poultry and eggs during the two years of drouth has been a great help in paying the grocery and clothing bills, and in a majority of cases has also helped to increase the bank deposit. Much encouragement and assistance has also been given the farmers by the Mis-

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California Poultry Practice

WRITTEN TO TEACH BETTER POULTRY METHODS ON THE FARM.
By Mrs. Susan Swaysgood.

Every poultry raiser of California should have this book. It is very practical and will help make your business profitable. In the preface of the book the author says:

"This book is not an accident; it is born of a desire to help others to avoid the stumbling-blocks in the poultry business, and at the request of many readers of The Pacific Rural Press, and other papers.

"With forty-two years of experience with poultry it is expected that I have learned a few things about it; it's a poor business that does not teach lessons in that length of time. Don't you think so?

"There are books, yes, books without number, on poultry matters, but many of them are mostly theory. This book tells you just what I have done and how I would do it.

"It is a book of action, and it is action that counts these days. We have to act in the living present if we want to live. I want to live and I want others to live, too, and as I have learned these things by experience it is fitting that I should tell others how to obtain results without paying such a big price for the experience.

"The things told you in this book are original, unorthodox, but strictly practical; and if you will read and then heed, you will be well satisfied that the author has given you your money's worth. California is an empire in itself, and I am sure there are enough men and women engaged in the poultry business, or wanting to get into it, to call for a million copies of this book, though its only claim is that it is needed."

The book contains 157 pages, besides illustrations. The 45 chapters cover every phase of poultry culture from eggs to hens, and from hens to market. Feeding, housing and parasites.

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souri State Poultry Association, which has a membership of nearly 5,000 active poultry breeders.

CHICKENS MOLT OFTEN.

To the Editor: Will you please tell us what makes spring chickens molt two or three times during the season? They are fed a mash in the morning, made of bran, middlings, or shorts, cocoanut meal, and once a week fish meal, mixed with the rest of the mash. This is all mixed with the scraps from the kitchen and potato peelings cooked. At night we feed wheat. Four or five times a week they have sour milk. They have big range.—A subscriber, Oakley.

[Answered by Geo. H. Croley.]

[It is natural and beneficial for chickens to molt several times while growing from chickhood to about the age of laying, but no doubt our enquirer refers to one or two unwelcome molts, or partial molts, that occurred late in the fall when eggs were due, but failed to materialize. An oversupply of fats or oils, particularly vegetable oils, is the most common cause of unseasonable or repeated moltings. The cocoanut may have been fed too liberally. See an article in September 25 issue in regard to feeding this material. The kitchen scraps may have added some fat. It is stated that the fowls have a big range. This range may have supplied an abundance of oily seeds, large quantities of which would have been eaten by the fowls. The fish meal, if very oily, will also add to the supply of excess fat. The most valuable fish meals seem quite dry and not nearly as nice to look at as the poorer grades that have a fresh, attractive appearance, but which are sometimes so oily that the oil may be squeezed out by pressing it tightly in the hand.]

Farm Poultry for Profit.

[Written for the Pacific Rural Press by Susan Swaysgood, Pomona.]

RAISING WHITE LEGHORN CHICKS.

These are the real commercial chicks of the coast. Without going into the merits or demerits of this variety, it is safe to say that they outnumber all other breeds and varieties, hence are deserving of proper notice.

No other chicks will stand the abuse these little fellows do and come out well. At the same time they pay well for good attention. To those who want to herd them in big bunches of twelve or fifteen hundred, I have nothing to say. They claim to save labor and fuel but when reckoning day comes I think the price comes out of the chicks.

Three hundred Leghorn chicks will thrive very well together but I do not think it pays to put more in one compartment.

For the first few days they should be confined to close quarters near their brooder so that they will learn the way to the warmth. It is best not to feed under 42 hours, then give them some form of soft food and fine oyster shell.

I make a bread of cracked wheat, steel-cut oatmeal, corn meal, middlings, and infertile eggs, mixed to a stiff batter with sweet skim milk. Bake slowly half a day and grind up in a food chopper.

This starts the little fellows off right, then if you have some skim milk for them to drink the first few days they will not fail to pay you back in growth. Chick feed, and after four or five days a mash, may be added to the bill-of-fare. But always give dry grain at night, either a good commercial chick feed or one of your own mixing.

If they get to picking toes, one of our subscribers, whose name I have forgotten, says, "give one teaspoonful of salt in the drinking water." I always put salt in the mash and never have any toe picking so this simple remedy apeals to me as being all right.

CHICKEN POX.

What is the matter with my chickens? Great big, hard, dry lumps come on their heads and keep getting larger till they die.—Mrs. R. D., Hanford.

Chicken pox is the matter. If readers would watch these columns a little closer they would not need to ask such simple questions. Clean up all refuse, give the chickens a dose of Epsom salts in their mash and rub the heads with vaseline.

RHODE ISLAND REDS.

Who keeps Rhode Island Reds in or near Pomona?—Mrs. W. J. Paine, Coachella.

Whil breeders please put a card in our directory so she can see for herself, as I do not know of any particular person? From the volume of questions similar to this one that come to Pacific Rural Press it is evident that many breeders are losing sales by not having a small card in the Poultry Directory of this journal.

CALIFORNIA ENTERS EGG-LAYING CONTEST.

This year's egg-laying contest at the Connecticut station opened November 1 with 100 pens of 10 hens each. From Prof. W. F. Kirkpatrick, in charge of the contest at Storrs, Ct., comes the following: "As the thing is lined up now, however, we expect to have 19 pens of Plymouth Rock, 16 Wyandotte, 20 Red, 30 Leghorn, and 10 miscellaneous, including Black and Buff Leghorn, Ancona, Sussex, Orpington, Oregon, Progressive and Rhinelander. Ontario has two pens and England has seven. Others are distributed among the following states: Connecticut, Massachusetts, Virginia, New Hampshire, California, Oregon, Ohio, Rhode Island, Pennsylvania, Vermont, New York, Missouri, Kansas, Illinois, Michigan and New Jersey.

FEEDING WHEN EGGS ARE SCARCE.

At this season of the year many people who have a few chickens get discouraged and say, "There is nothing in poultry, anyway." Some time ago I visited a large White Leghorn ranch where they keep an average of 15,000. Out of that large number, early in November, they were getting only a few hundred eggs a day. Yet they had no hard luck story to tell; they have made money and expect to continue doing so.

It is only the man or woman that keeps just a few that expects many eggs at this season, where good sense ought to tell them that not one hen out of ten will keep up her laying stunt all winter. The heavy breeds do better, considering the number kept, than the small breeds, but all hens lay off some during the late fall or early winter.

And yet there is a profit to be made. A poultryman has to have faith and feed his flock as faithfully when the eggs are not coming as when they are; but he should use judgment in the feeding. Too much fattening food to pullets or molting hens may make them so fat as to retard the laying. In such a case the profits are leaking out both ways. It is always safe to feed so that all stock have to exercise to get what they want. Exercise increases the circulation, thus keeping a good supply of blood to all parts of the organism. By nourishing all parts, the food is distributed, where without exercise it forms fat in certain parts, leaving the rest to practically starve for lack of nourishment. And this is where a good deal of the profits from poultry go.

Wm. A. French of Stockton reports the sale of a pen of poultry for $25 to a Long Island man as a result of his winnings at P. P. I. E. and also "I took your Mayor's (Rolph of San Francisco) check for $128 for poultry while there." It pays to show. Mr. French had over 50 birds entered.

In Modoc county 127 coyotes and 90 stray dogs were killed before Dec. 18. In Nevada counties of Elko, Washoe and Humboldt 266 coyotes had been killed. Lassen county is joining the merry war.

Fresno county is holding meetings to work up sentiment for a farm adviser. One-fifth of the farmers must become members of the "Farm Bureau" before the adviser is available.

Poultry Breeders Directory

MAHAJO WHITE ROCKS—Incubator Chicks, $25 pe hundred. Hatching Eggs $10 per hundred. The best all-purpose fowl for farms and the most profitable one. Lay well and consistently; best for capons and broilers. Beautiful snow white plumage. Gentle dispositions. Colonize them in your orchard and reap double profits. Send for catalogue. At Panama-Pacific Poultry Show were awarded sweepstake on Cock (295 Egg type), as best utility bird in show—200 Birds competing. Mahajo Farm, Box 597, Sacramento, Cal.

BABY CHICKS—All sturdy youngsters from good stock and hatched right. Rhode Island Reds. Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. Lay most when prices highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for heavy laying. Eggs, chicks, stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

WHITE PLUMAGE POULTRY FARM and Hatchery. Sells day-old chicks from healthy, vigorous breeders. White Leghorns at $10 per 100, $90 per 1000. Barred Rocks and Rhode Island Reds at $15 per 100. We sell the Victor Incubator and Brooder. Circulars free. H. A. Schlotthauer, Exeter, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 398, Los Gatos, Cal.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs, Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired **Heavy Winter Layers.** W. C. Smith, Prop., Corning Cal.

PENN'S QUALITY BARRED PLYMOUTH ROCKS—At the World's Poultry Exhibition, San Francisco, our **Western Bred** Rocks ranked among the best in the world, both in untility and exhibition points. Catalogue free. Breeding stock and eggs for sale. Golden Rule Poultry Farm, St. Helena, Cal.

PERFECTION FIRELESS BROODERS—There is none better. Simple, inexpensive, easy to operate. Free trial. Ask for particulars. H. R. Teal, Willits, Cal.

ROOFDEN CHICKS are hatching every week. When do you want yours? White Leghorns that are worth while, by hundred or thousand. Black Minorcas, beauties, great layers of big eggs, and a hardy strain. Rhode Island Reds, the breed for meat and winter eggs. We can supply you with prices that are right. Ask us. Circular free Roofden Poultry Ranch and Hatchery, Campbell, Cal.

ALL KINDS OF BREEDING and laying hens, roosters and pullets. Petaluma incubators, new and used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minorcas, Buff, White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards, 2550 San Pablo Ave., Oakland, Cal. **Closed Sundays.**

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WHITE ROCK BABY CHICKS from good winter layers. Booking orders now. Early hatched chicks make early Fall layers. Few Hoganized cocks for sale. Mrs. J. B. Tupper, Ceres, Cal.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

BARRED ROCK COCKERELS—$2.50 each. Am booking orders for Rhode Island Red and Barred Rock chicks for February, 15c each. G. L. Hawley, Madera, Cal.

HATCHING EGGS from Hoganized S. C. W. Leghorn two-year-old hens, $1 per setting, $5 per 100. Also breeding hens, $1 each. Allendorf Egg Ranch, Kerman, Cal

BABY CHICKS AND EGGS—Hoganized Black Minorca, White Leghorn stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

WHITE LEGHORNS—Hoganized. Bred to lay. Booking orders now for hatching eggs. $6 per 100, $50 per 1000. No chix. R. H. Dickinson, Los Gatos, Cal.

BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trap-nested stock. Fairmead Poultry Farm, Fairmead, Cal.

WHITE ORPINGTONS—200 egg strain and Buttercups, the new farmer's fowl. Write for prices and description. M. S. Woodhams, San Mateo.

BUFF ORPINGTON COCKERELS—Fancy and Utility. Good in type and color, weighing 9 to 11 pounds. Mrs. C. M. Smythe, R. 3, Stockton.

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WHITE LEGHORN BABY CHICKS that are hatched right, from good stock. Order now for spring delivery. Mrs. G. Logan, Morgan Hill, Cal.

EAST SACRAMENTO HATCHERY—Capacity, 16,000. Special low price for large lots of chicks. Box 1205, M St. Road, Sacramento, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and Cockerels. E. C. Quessenberry, R. 4, Lodi, Cal.

RHODE ISLAND RED BABY CHICKS and Eggs. Heavy laying strain. Send for circular. Rosedale Ranch, R. 1, Hayward, Cal.

TRAP-NESTED LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue W. G. Suits, 378 Bandini Ave., Riverside, Cal.

BLACK MINORCA, R. I. Red, Buff Orpington Cockerels. Eggs for hatching. Mrs. R. A. Holdridge, P. O. Box 282, Dixon, Cal.

TRAPNESTED S. C. RHODE ISLAND REDS—Eggs and Fine Breeding Cocks. Wm. Larm, 3915 39th Ave., Oakland, Cal.

TRAPNESTED LEGHORNS—White and Buff Stock. Eggs, chickens. Arthur R. Schroeder, Box 179R, Mountain View, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

S. C. RHODE ISLAND REDS—Hatching eggs, Baby chicks and cockerels. Mrs. V. P. Hewitt, Dixon, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

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HARES AND RABBITS.

MODERN RABBITRY—Flemish Giants and New Zealand Reds. Imported strains; best to be had. 100 breeding and fattening pens. Can be loaded on flat cars. Rabbitry returns this Fall amounted to over $300. Receipts for same. Our ranch will be sold, so we must sell. Will sell at cost for cash or trade. L. F. Strener, Route 1, Box 5, Hughson, Cal.

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BELGIAN HARES—Young stock for sale. Hurd Bros. St. Helena, Cal.

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MAMMOTH BRONZE TURKEYS—THE BEST IN THE WEST—Extra special prices. Further information cheerfully given. Write now to secure best birds. Geo. A. Smith, Corcoran, Cal.

ROCKWOOD FARM WHITE HOLLANDS—Splendid breeding pens of 4 large young hens and unrelated mature toms. Also single toms and hens. 201, R. 6, Santa Rosa, Cal.

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THOROUGHBREDS—White Holland Turkeys, White African Guineas for breeding. T. M. Calvert, McFarland, Cal.

The Home Circle Page of the Pacific Rural Press

THE WASH DAY MENU.

That amusing verse in a recent Home Circle page, "When Mandy Starts to Wash," and its reference to cold beans for dinner calls to mind that beans are not to be despised as a food at any time, and on "wash day" are particularly appropriate as a dish to be prepared with little trouble or attention. This counts, especially where one person attempts to do justice equally to table and tub.

In general one ought to select for the day such food as can be quickest prepared and that is nourishing. Quite likely this may include some favorite dishes of the family. The point is to leave all elaborate things for other times, provide good solid food for yourself or the help, and this day do without stirring or peeling or paring or garnishing or pink ribbons. Just serve and be happy.

A sustaining and very cheap and ready meal can be made of lima beans. These are good hot or cold and the day after. Soak 1 pint of dry lima beans over night so that in the morning you can pour off the water, while you heat 3 pints of fresh water to the boiling point. This you pour on the beans and then let them boil slowly at the back of the stove, say for an hour and a half. For flavor add salt and pepper and three thin slices of bacon about a half hour before the beans are done. Or, instead of pork, put in 2 tablespoonfuls of butter.

Macaroni and cheese is another dish as easy to cook as it is to enjoy. For four people try: in salted water boil ½ package macaroni for fifteen or twenty minutes, which is ample time to make good macaroni tender; pour off the water and put the larger part of macaroni in a deep pan or baking dish; take ½ pound cheese crumbed or broken up and put most of it over the contents of the pan. Then add the other part of the macaroni and sprinkle the remaining cheese over the top, with several little lumps of butter; cover this level with milk, after which sprinkle 2 tablespoonfuls of cracker crumbs of 1 of flour over it with a dash of pepper. Bake for a half hour in a hot oven. The total time of preparing this dish ought to be but 50 minutes. There are scores of macaroni or spaghetti dishes that are just as satisfactory. Lettuce, with a plain salt-pepper-vinegar seasoning, or with a ready prepared dressing, or with oil and vinegar, is a good thing to serve with a macaroni menu.

If a meat dish is considered necessary instead of one of the foregoing, neck of lamb goes quickly. Two pounds of the meat may be cut into small pieces for boiling and put into 4 quarts of water, for it can cook slowly for about two hours without attention. About one-half hour before the meat is ready for serving add 2 cups of dry rice, washed, and a can of tomatoes, and season with parsley, celery leaves and onion or garlic.

Neither does corned beef and cabbage require much care in the preparing. The corned beef should be cooked slowly about 4 hours the day before and left standing in the water for the cabbage to be added to it. However, if this water proves to be too salty it may be poured off and fresh water substituted. In either case the water should be heated separately to the boiling point and poured onto the corned beef and the cabbage, and then kept boiling for an hour and a half slowly. Peeled quartered potatoes may be added a half hour before the cabbage is done, and such seasoning as may be required.

The best dessert for a menu such as the above is a dish of prunes in some form, because it goes quickly. Prunes and rice may be prepared by spreading sweet stewed prunes over the bottom of a bowl. Fill this with boiled rice (hot or cold) and press it down to hold its shape, then turn it out of the mold and serve with the sweet juice of prunes, or with cream.

AN INCOMPARABLE POTATO CAKE.

(This Week's Preferred Recipe.)

This cake has been tried often and has never failed to give satisfaction, and is always good to repeat. It quickly becomes a home favorite. The quantity in the following recipe is for a large cake pan:

2 cups sugar creamed with 1 cup butter, or less of some other shortening; 4 tablesp. ground chocolate, 4 beaten eggs, 1 cup seeded raisins, 1 cup hot mashed potatoes, ½ cup milk, 2 cups sifted flour, 1 cup chopped walnut meats, 1 teasp. mixed cinnamon, cloves and nutmeg, 2 teasp. baking powder, 1 teasp. salt and 1 teasp. vanilla extract.

This is to be baked in a rather slow oven. It makes a fruity and delicious cake.

THIS WEEK'S BEST HOUSEHOLD HELP.

To have something serviceable, economical and stylish to wear—buy blue serge. Blue serge is always in style and is always in the shops. It makes attractive gowns for morning or afternoon wear and for church going. It combines tastefully with furs or plaids. It wears durably. It is suitable for matrons and misses, and the best all round costume that can be made of it is a middy blouse and skirt, either home made or ready bought. Worn with a nifty tie it is very attractive.

CHOOSING WINTER HATS.

There is some thought to be exercised in selecting the hat this year, with the flaring collars in fashion. With a coat that has a flaring collar a flat-crowned hat with broad brim does not set to advantage unless one is rather tall. The tendency of this combination is to give a dumpy appearance, which it takes height to overcome.

A high crowned hat is just as much in style now as the flat crowned hat, and a high turban will prove very suitable to many women. All kinds of combinations of furs and flowers are favored for trimming, and one's own taste has ample play. Ostrich feathers too are again stylish, the manner of applying them to the hat being a departure from former modes. They are bunched, three or four, at the backs of the high crowned hats; or to some tastes in front. This includes the rather large tips or the nattier small ones. On flat brimmed hats ostrich feathers are laid flat, very effectively, to cover them.

EXPERIENCE EXCHANGE.

All readers are invited to exchange special recipes or household hints through this department. Selected ones will be published.

Mrs. D. L. M. of Porterville desires a recipe for chocolate pie.

Mrs. E. H. Phreaner, Placerville, prevents grape jelly candying by adding 2 tablesp. extracted honey to 1 lb. jelly, lets it boil two minutes longer and then fills jelly glasses.

Who knows anything of an onion and celery sandwich for afternoon teas? A subscriber has heard of something of the kind and wants to know more.

HEADGEAR GOSSIP.

A beautiful little turban, more oval than round, made of gray maline and covered with silver lace, has a smart bow of blue velvet ribbon about an inch and a half wide, with one long loop and two ends hanging over the hair.

Another lovely creation of the milliner's artistic fingers is made of crushed strawberry maline and gold lace, and with crushed strawberry velvet ribbon hung in streamers to the waist. This hat has a little brim with gold lace falling slightly over the edge. One large crushed strawberry rose is placed a little to one side of the crown.

A hat of black maline and jet beads has the top filled high with maline loosely caught. A black ostrich fancy is the sole trimming.

HELP GIRLS IN DRESS.

If style continues to lead this country a merry but ruinous dance, more organizations will be formed like that in Brooklyn, the Appropropriate Dress Club.

It was formed to protest at extremes in fashions and to help its members, working girls and women, to dress comfortably and neatly and attractively at reasonable cost. This aid is partly financial. A girl may buy her clothing through it on the installment plan but not at the exorbitant prices charged by installment suit houses. The clothing is bought for her at cash prices with her installments. And she gets better clothing, too. Philanthropic women organized and are promoting the club.

Really Funny.—"She says I am dull." "You should crack a few jokes occasionally. Ask her to marry you, or something like that."—Puck.

MRS. BEST'S BULLETIN.

My Dear Friends:

There was little to invite the seeker after novelty the past week in a tour of the marts, though a hunter for bargains might have found things very much to her enjoyment. Odd lots and odd sizes and things too long in vogue were going at prices to make you wish you could have afforded waiting.

Those sweet little white turbans that made a girl's red cheeks look so rosy red were going like a flock of frightened seagulls, at something like $1.95. And what with the rain coming down in earnest now, I don't think they are coming back.

Saw a lovely maroon silk velours-upholstered armchair of mahogany, with such cushions! They asked $150.00.

The kid gloves with the over seam are now quite prominently displayed. Most fetching are the dark ones with the white stitches, but for practical reasons I should choose the white ones with dark stitches. The white thread is apt to soil more easily.

A silver eyelet punch, hollow within for a needlecase, is 75 cents. And there's a little chain to carry it by.

Japanese incense holders in novel shapes are seen on all sides. The cleverest I think is a china coolie in bright colors who sits with a pipe in his hand and his mouth open to exhale the smoke. These things run in cost up to $1.

For evening wear the pearl and iridescent glass beads and pearl and silver spangles are being worked up into garniture, so that some of the ball and reception costumes give the wearer the appearance—well, of a cut-glass chandelier.

Should you care for the high Prussian boots of broadcloth, with black velvet knots on the tops, a very smart pair is obtainable at $20.

The high lace shoes for the high skirts are themselves high, about $9 for average ones. This is due to the larger and select pieces of material needed for the uppers, as much as to anything.

Do you remember (if you can remember back thirty years) the decorated cup and saucer—very large cup, very decorated—that was a staple gift and was considered too sacred to use for drinking out of? I thought they were all gone, but I saw several specimens just the other day, and On Sale! Most of them had painted in gilt on them: "To One I Love."

But one thing that has entirely disappeared is the moustache cup. It has bid us farewell.

Which is a hint for me to say good bye too. Devotedly,

ROSABELLA BEST.

(Note—Readers wishing information from Mrs. Best, care of the Rural Press, will receive a reply if they enclose a stamped addressed envelope.)

The children of the Oroville schools did a commendable thing the other day. There was a large number of orange trees in the schoolyard heavily laden with fine fruit. The trustees left it to the children what to do with the crop, with the result that the oranges were picked, packed and shipped to the schoolchildren of the mountain district of Butte county.

THE HOMELAND.

By DANA BURNET.

My land was the west land; my home
was on the hill,
I never think of my land but it
makes my heart to thrill;
I never smell the west wind that
blows the golden skies,
But old desire is in my feet and
dreams are in my eyes.

My home crowned the high land; it
had a stately grace.
I never think of my land but I see
my mother's face;
I never smell the west wind that
blows the silver ships
But old delight is in my heart and
mirth is on my lips.

My land was a high land; my home
was near the skies.
I never think of my land but a light
is in my eyes,
I never smell the west wind that
blows the summer rain—
But I am at my mother's knee, a lit-
tle lad again.

—Literary Digest.

LITTLE TAD LINCOLN.

Tad Lincoln, the youngest of President Lincoln's four sons, was eight years old when his father went to the White House. He was a merry, lovable, mischievous boy, generally happy and jolly, although Miss Helen Nicolay tells in her "Personal Traits of Abraham Lincoln" of one time when Tad must have been unhappy. One of Lincoln's neighbors was "attracted to the door one day by hearing children cry. He saw Mr. Lincoln striding by with two of his sons, both wailing loudly. 'Why, what is the matter with the boys?' he asked. 'Just what is the matter with the whole world,' was Lincoln's answer. 'I've got three walnuts, and each boy wants two.'"

Tad had pretty much his own way in the White House; he was permitted to roam where he would, interrupt whom he might, and beat his little drum about the corridors until his own ears ached, to say nothing of the tortured ears of Senators and Congressmen, diplomats and ministers. When artists came to paint the President's portrait, and established themselves with their easels and their fat tubes of paint in the President's room, Tad and his brother William lost no time in getting hold of that glorious paint and using it on each other's noses and chins. The artists' annoyed protests finally brought from Mr. Lincoln the mild remonstrance, "Boys, boys, you must not meddle. Now run away and have your faces washed."

Mr. Lincoln was always lenient with his children, says Youth's Companion. When they clambered about and over him, he pushed them aside with gentle hands, but he never turned them out of the room or rebuked them. Secretary Stanton used to turn white with fury when he saw his chief, with infinite patience, break off from an important state discussion and listen to one of Tad's tales.

The great day of the boy's life was that on which he staged a wonderful circus in the attic of the Executive Mansion. All went well for a time, for the collie did not hate cats and the little cur was securely tied, and could only emit piercing barks. But when Tad induced part of his audience to help him bring up the goat, trouble began. There was much butting and bumping, pushing and tail wagging on the part of old "White Bill," who had no ambition to excel in entertaining the public, and the excitement finally unnerved the collie, who made a dive for Bill, and paid back an old grudge with a horrid little bite. Bill would not stand that, and down the attic stairs came cats and audience, dogs and Tad, tumbling and racing in one grand mix-up. That affair was unique in the White House, and nothing of the kind has ever been permitted since.

Abraham Lincoln was always very careful to use words that his boys could comprehend, and they never failed to take an interest in his affairs. It was on April 11, 1865, after the surrender of General Lee's army, that Mr. Lincoln was speaking from a White House window to a large crowd gathered below, and he asked them the question, "What shall we do with the Confederates?" A voice answered from the crowd, "Hang them!"

Tad, from within the room, saw his father's pained expression, and he shouted, "No, no, papa, not hang them! Hang on to them!" And Mr. Lincoln's smile was radiantly grateful as he shouted to the crowd below, "Tad has got it! We must hang on to them!"

Four days later the father was dead, and before he was nineteen Tad followed him to the grave. The world lost a brave and sunny spirit when Tad Lincoln died.

TAKE HEED, BRIDES.

It is in Monroe, Wis.,
So says a dispatch,
That T. Sauerman, magistrate,
Who marries people,
Makes a hit with grooms—
Who, by the way,
Have to be eugenic.
He makes a hit with them
By asking the bride
"Can you bake?"
And if she says, "Sure!"
He marries 'em.
And if not, not.
Sometimes it's not.
So stay away from Monroe,
Or else learn how
To bake.

WHERE THERE'S A WILL.

"My husband," said the matron, "was a confirmed smoker when I married him a year ago, but today he never touches tobacco."

"That's fine," approved one of the group. "To break off the habit of a lifetime in one year requires a strong will indeed."

"Well," remarked the wife meditatively, "that's just the kind of a will I've got."

Not So Reckless.—"As I understand it, you lecture on the subject of peace at any price." "No. My rates are $200 per lecture."—Louisville Courier-Journal.

A PASTY COMPLEXION.

After a busy day of golfing and an evening of automobiling, Jane's skin was irritated from the combined effects of sun and wind; so she liberally "cold-creamed" her face and hands and settled herself for a good night's rest.

In a few minutes her face began to feel stiff and drawn. "At last," she thought, "the expected has happened. I have paralysis."

Her nervousness increased when her fingers became unmanageable, and her skin began to crack and snap.

She hastily turned on the light and found her face alarmingly waxy and shiny. What could be the cause?

Finally she rushed for the tube of cold cream. It was labeled "Library Paste."—Youth's Companion.

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The Markets.

Unless otherwise noted, prices quoted are f. o. b. San Francisco.

San Francisco, Jan. 5, 1916.

WHEAT.

The local market shows no further change, and trading has not yet recovered from the holiday curtailment, as local buying interests have fair supplies. A better buying movement is reported in the north, where the movement for some time has been mostly to the East, but a great deal of wheat is still held in the country.

Cal. Club, ctl.	$1.70 @1.72½
Northern Bluestem	1.80 @1.82½
Northern Club	1.72½ @1.75
Northern Red	1.65 @1.80

BARLEY.

Supplies in the State are still quite large, and with poor shipping facilities, and no great local demand, the market is rather easy in tone, both for spot and future delivery. Feed is quoted a little lower, with little business at the decline.

Shipping, ctl.	$1.30@1.35
Choice Feed, ctl.	1.27½ @1.30

OATS.

The movement in this grain is light, with the consuming trade buying in rather small lots, according to current needs. Values stand as before.

Red Feed	$1.30@1.35
Red Seed	1.45@1.65
White	1.35@1.40

CORN.

Yellow, both Eastern and California, is steadily held at the recent advance, the local grain being offered in rather small lots. Egyptian, etc., are moving well in the country, and there is considerable business in them here. The cheap stock is well cleaned up, and both Milo and Egyptian are slightly higher.

Eastern yellow, ctl.	$1.70@1.75
Milo Maize	1.40@1.45
Kaffir	1.65@1.70
Egyptian	1.45@1.55

BEANS.

The bean market still shows the dullness of the last few weeks, as the distributing trade all over the country is occupied with other things and the need for more stock is not yet urgent. A general resumption of demand, however, is expected before the end of the month. Small whites have again been marked up, as they are pretty well cleaned up, and there are signs of a strong Eastern demand.

(On wharf, San Francisco.)

Bayos, per ctl	$5.00@5.10
Blackeyes	3.50@3.60
Cranberry Beans	5.10@5.20
Horse Beans	3.25@3.50
Small Whites (south)	5.80@5.90
Large Whites	5.60@5.75
Pinks	4.25@4.30
Limas (south)	4.60@4.70
Red Kidney	6.50@6.75
Mexican Reds	4.50@4.65

SEEDS.

The market shows little feature, buying being light at the moment in nearly all lines, though more activity is expected soon.

Alfalfa, per lb	18 @19 c
Melilotus Alba	30 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	4¼ @ 4½c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Sudan Grass	40 c

HAY.

The unsettled weather has caused shippers to hold back a little, but the local demand is not especially urgent just now, though as a rule stocks are not heavy. Stock hay is coming into more prominence, both here and in the country, as the continued rain necessitates a good deal of feeding elsewhere. Offerings of all grades, however, are of very moderate proportions, and with a strong demand in the interior of the State the market is firm.

No. 1 Wheat	$12.00@15.00
No. 2	10.00@11.50
Tame Oats	10.00@16.50
Wild Oats	8.00@11.50
Alfalfa	10.00@14.00
Stock Hay	6.00@ 9.00
Straw, per bale	.25@ .40

FEEDSTUFFS.

There is quite an active demand in the country, especially for the cheaper feeds, though the local business is rather quiet. Beet pulp has been advanced, while other lines are unchanged, rolled barley being a little easy.

(Wholesale prices per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$21.00@22.00
Alfalfa Meal, per ton	18.00@20.00
Alfalfa Molasses Meal per ton	21.00@22.00
Bran, per ton	25.00@26.00
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00@25.00
Cracked Corn	38.00@39.00
Middlings	32.00@33.00
Rolled Barley	26.50@27.50
Rolled Oats	29.50@31.00

VEGETABLES.

The demand for garden truck after a slight spurt at the close of last week, has been very light, and weather conditions have not helped. Offerings have been sufficient, but of poor quality in several lines, which has tended to weaken values, though there are no quotable declines. Rhubarb is coming in slowly, and is fairly firm; while southern beans and peas are unattractive and offerings are slow to move at the old prices. Good tomatoes bring slightly better prices, but general offerings are inclined to drag, and eggplant, peppers, etc., find limited sale. Artichokes are still held at rather high prices, with limited offerings, while celery and lettuce are steady.

Sprouts, lb	3@ 4 c
Rhubarb, box	$1.00@1.25
Peas, southern, lb.	.08@ .10
String Beans	.08@ .12
Lima Beans	.08@ .10
Peppers, bell, lb	.05@ .06
Tomatoes, L. A., crate	.75@1.00
Eggplant, lb	.05@ .07
Celery, crate	2.25@2.50
Artichokes, doz.	.50@1.00
Lettuce, small, crate	1.00@1.25

POTATOES AND ONIONS.

California stock is getting down to narrow limits, and supplies from outside States are being brought in, with higher prices in most lines. Both Oregon and Delta potatoes are somewhat higher, while Salinas stock, though rather scarce, is unchanged. Sweets are also higher, with light supplies. Onions have been marked up sharply, and California stock is rapidly cleaning up.

(On Wharf.)

Oregon Burbanks	$1.35@1.55
Salinas Burbanks	1.85@1.90
Delta Burbanks	1.25@1.35
Sweet Potatoes, ctl.	1.30@1.75
Onions, Delta, ctl	1.15@1.35
Oregon	1.50
Garlic, per lb	.10@12½c

POULTRY.

The New Year turkey market again made a sharp advance, with supplies very scarce, and values are still held above last week, though there is little business in turkeys now. Chickens show no change, and business has been extremely dull for the last fortnight, though there is not enough stock coming in to depress the market. Ducks and Belgian hares are higher.

Turkeys, dressed,	24@30c
Live Turkeys, old, lb.	19@20c
do, young	20@21c
Broilers, 15 lbs to doz. and less, lb	30c
do, over 15 lbs. to doz.	23@25c
Fryers	21@22c
Hens, extra, per lb	16@17c
Small	15@16c
Smooth Young Roosters, per lb.	17@19c
Squabs, per doz	2.00@4.00
Geese, per pair	2.25@3.00
Ducks, young, lb	18@19c
Old	14@15c
Belgian Hares	9@11c

BUTTER.

All grades have dropped off a little since the holidays, as the local demand has been less active, and there is not much demand for shipment, while arrivals the last few days have been quite heavy.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	28	28	..	27	26½	26½
Prime Firsts	27	26½	..	26½	26	25½
Firsts	25½	25	..	25	25	25

EGGS.

Eggs have shown a gradual decline up to a few days ago, with unusually large offerings for this time of the year, and extras are about 15 cents lower than a year ago. Within the last two days this grade has recovered a little, as most of the arrivals are off grade, and the extra quality is needed.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	35	33	..	31	32	32½
Sel. Pullets	28	28	..	28	29	29½

CHEESE.

Y. A.'s are still steadily held, and flats have recovered a little, with offerings cleaning up fairly well. Monterey cheese is arriving more freely, causing easier prices.

Y. A.'s fancy	17 c
Fancy Calif. flats, per lb.	15 c
Calif. Cheddar flats, per lb.	Nominal
Monterey Cheese	16@17c

LOS ANGELES DAIRY PRICES.

	Wed	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	29	29	29	..	29	28
Eggs	35	35	35	..	33	34

DECIDUOUS FRUITS.

With disagreeable weather, there has been practically nothing doing in the fruit market the last few days; and there is practically nothing offered except apples. The end of the year about cleaned up the fresh stock, and from now on the apples will be mostly cold storage stock. Supplies are not excessive, and values are well maintained.

Cranberries, Eastern, bbl.	$11.50@12.50
Oregon, box	3.50@ 3.75
Apples, Newtown	.75@ 1.25
Pearmain	1.00@ 1.25
Oregon Spitzenbergs	1.50@2.50
Persimmons, box	.75@ 1.25

DRIED FRUITS.

Prices are unchanged, and there has not been enough business in the last fortnight to show any new tendencies in the market. Dealers in consuming markets are busy at present with stock-taking and other year-end operations, and are likely to take a couple of weeks more before getting actively into the market. Local packers, also, are still very busy with office work, and so far have shown little interest in country offerings, as there is little to be had at prices which promise much speculative profit. There is no doubt of a renewed consuming demand within a few weeks, however, and all available supplies should find a ready market in the spring, whether or not export buying is renewed. Apples show a slight easiness, as there has been no demand of late; while apricots and figs of desirable quality are eagerly sought. Prunes are becoming scarce, and are very closely held, the demand being especially for extremely large and small sizes. Peaches receive no attention at the moment, but with light offerings, and short supplies in other lines, the outlook is favorable to holders. The New York Journal of Commerce says:

"Brokers report that conditions which have ruled in the New York spot market for California prunes for several weeks can not be expected to change until after the middle of the month, when a recovery from the holiday dullness may be expected. It seems to be a fairly general opinion among the New York brokers that the next movement in the market will display a firmer tone.

"The California apricot market continues very strong, and while no quotable change has been made in the general range of prices there does not appear to be any inclination to shade figures in any quarter. Peaches are also maintained on a very steady basis, with the market very quiet and buying in all quarters restricted to small quantities."

Apples	6½ @7½c
Apricots, per lb.	9 @12 c
Figs, white	5 @6 c
Black	3½c
Calimyrna	8 @10 c
Prunes	4¾ @6 c
Peaches	4½ @6 c
Pears	4 @7 c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6¾c
Thompson Seedless, No 1, 16 oz	7¾c
Sultanas, 16 oz.	7¼c
Loose Muscatels	6¾c
London Layers, 3crown, 20-lb. box	1.25
Imperial Clusters, 6-crown, 20-lb. box	2.50
Bulk, layers, 50 lb. box	2.75

CITRUS FRUITS.

The eastern auction markets remain unchanged on California oranges and lemons. Practically all oranges from Butte and Tulare counties have been shipped and at present but few cars are being sent from southern California. Shipments from the south will start in strongly very soon.

At New York on Monday, Jan. 3d, the auction prices averaged from $1.70 to $2.80 per box for navels, and from $2.55 to $3.55 for lemons. At Chicago the auction prices for navels averaged from $2 to $3 per box; for lemons $3.50 to $4.25.

The total shipments from Tulare county will be a little less this season than last year, while Butte county has sent out a few cars more this year over last.

Oranges are in good supply at San Francisco and generally of attractive quality. While the demand has been limited the last few days, there is a tendency for local sales to pick up, and values are steadily maintained on navels, tangerines being slightly easier. Lemons also are steady. Lemonettes have been marked down a little.

(Wholesale prices, San Francisco.)

Oranges, Navels	$1.50@2.75
Tangerines	1.25@1.75
Grapefruit,	2.00@3.00
Lemons, box	1.50@3.75
Lemonettes, box	1.25@1.75

HONEY.

The top price on water white comb has been reduced slightly, while amber is a little firmer. Otherwise values stand about as before, though there seems to be a little more demand for liquid dark extracted, and some shipping demand is reported. There is no urgent demand here, however, and prices show no tendency to advance. A good deal of Hawaiian honey is arriving.

Water White, comb	13@15c
Amber	8@12 c
Water White, extracted	7@ 8 c
Light Amber	3@ 4 c
Dark	2@ 2½c

NUTS.

The nut market is featureless, owing to the seasonable lack of demand, as well as the close cleanup in some

Special Live Stock Market Report.

Receipts of light hogs fell off some in this market last week and prices stiffened somewhat as a result. The bulk of light hogs in California seem to have been marketed in the recent heavy runs and receipts are expected to be light for several weeks. The dressed meat market shows some improvement since the holidays which is aiding in the price raising. The situation is about the same in Utah, Idaho and Oregon. Reports from Chicago indicate that the swine situation is righting itself there also.

The dressed beef market is assuming more activity since the holidays and the demand is stronger, although prices remain unchanged. The surplus which accumulated during the holidays is being worked off and receipts are holding about the same. Demand for both sheep and lambs is strong and receipts hold at about the same mark as last week. With the exception of the increase in price in light hogs last week's quotations still hold good.

WOOL.

The looked-for activity in wool after the first of the year did not materialize and things are practically at a standstill in the local market. A wire from Philadelphia on the day this is written says that "defective wools are not in demand and are a drug on the market." There is scarcely any city or country buying reported at this market at this time.

lines. There are still a good many odd lots of almonds scattered around the state, but on the whole the market is firm; while the only large offerings of walnuts are of Oriental stock.

(Prices f. o. b. San Francisco.)

Almonds (1915):
- Nonpareil .....15 c
- IXL 13½c
- Ne Plus Ultra .....13 c
- Drakes .....11 c
- Languedocs .....11 c

Walnuts(1915): .....
- Budded, per lb. 17½c
- No. 1 .....14 c
- No. 2 .....11 c
- Jumbo .....17 c

LIVE STOCK.

Hogs remain fairly steady as last quoted. Sheep from California points are coming in rather slowly, and prices show a slight advance. Lambs are scarce, and supplies are expected to remain short for several weeks to come.

- Steers, No. 1 .....6¾ @7 c
- No. 2 .....6¼ @6½c
- Cows and Heifers, No. 1 5¾ @6 c
- No. 2 .....5¼ @5½c
- Bulls and stags .....4 @5½c
- Calves, light .....8½ @9 c
- Medium .....7½ @8 c
- Heavy .....6½ @7½c
- Hogs, grain-fed:
- 100 to 150 lbs. 6c
- 150 to 240 lbs 6⅜c
- 240 to 300 lbs. .....6 c
- Prime Wethers .....6½ @7 c
- Ewes .....5 @5½c
- Full Wool Lambs .....8 @8½c
- Fall Shorn Lambs .....7½ @8 c

DRESSED MEATS.

- Steers .....10¼ @10½c
- Veals, large .....12½ @13 c
- Small .....13 @14 c
- Prime Wethers .....11½ @12 c
- Lambs .....13 @14 c
- Hogs ..... 9½ @10 c

WOOL.

(Prices paid in the country.)

- Sacramento Valley, lb. 16 @17 c
- Southern, year's staple 13½ @14½c
- Six months .....12 @13 c
- San Joaquin (defective) 9 @10 c
- Northern, free .....10 @15 c
- S'thern Mountain, free 11 @12 c
- Tehama Co., free ....12 @14 c

HORSES.

This market has been very uninteresting the past week. Unfavorable weather has tended to keep buyers away from the stables, even if there had been any attractive offerings; and nothing of any consequence has been shipped in, the only recent sale worth mentioning being a lot of road contractors' horses sold in Santa Clara county.

(Approximate values at San Francisco, based on auction sales.)

- Drafters, 1700 lbs. and up $200@225
- Drafters, 1550 to 1650 .. 150@200
- Chunks, 1350 to 1500 lbs. 150@175
- Wagon horses, 1050 to 1350 lbs. ..... 110@150
- Green Mountain range horses, 950 to 1200 lbs. 20@ 75
- Farm Workers ..... 50@100

GROCERIES.

The lines quoted are unchanged. Coffee is quiet, and the large crop in Central America may weaken prices as shipments increase. Codfish is again advancing.

(Wholesale prices, San Francisco.)

- Flour, Family Extras, per bbl. .....$6.00@6.40
- Sugar, granulated, per lb:
- Cane 6.65c
- Beet 6.45c

WEEKLY BUTTER AVERAGES.
Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	28.60	28.00		28.80
" 9	25.33		26.00	
" 16	27.50		26.83	
" 23	30.66		30.66	
" 30	28.66		28.00	
Feb. 6	26.68		26.80	
" 13	26.74		27.00	
" 20	29.00		27.16	
" 27	29.10		27.00	
March 6	27.00		25.25	
" 13	24.66		24.00	
" 20	23.00		22.50	
" 27	22.91		23.00	
April 3	23.00		22.23	
" 10	23.08		22.00	
" 17	23.00		22.00	
" 24	23.00		22.00	
May 1	23.08		22.00	
" 8	23.00		23.08	
" 15	23.58		23.00	
" 22	23.58		23.00	
" 29	23.50		23.00	
June 5	23.90		23.00	
" 12	24.08		23.83	
" 19	25.16		26.00	
" 26	25.50		26.16	
July 3	25.83		26.16	
" 10	26.21		26.00	
" 17	26.58		26.00	
" 24	25.41		25.50	
" 31	27.00		26.00	
August 7	27.00		26.00	
" 14	27.00		26.00	
" 21	27.50		26.00	
" 28	28.00		26.00	
Sept. 4	28.00		26.00	
" 11	28.00		26.00	
" 18	27.00		26.00	
" 25	26.50		26.00	
Oct. 2	25.91		26.00	
" 9	26.91		26.00	
" 16	27.00		26.00	
" 23	27.00		26.00	
" 30	27.00		26.00	
Nov. 6	26.55		26.00	
" 13	28.11		26.33	
" 20	29.59		28.66	
" 27	28.90		28.80	
Dec. 4	27.41		26.50	
" 11	27.33		23.83	
" 18	43.08		36.00	
" 26	26.40		28.00	

WEEKLY EGG AVERAGES.
Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66		35.16	
" 16	31.00		30.33	
" 23	30.50		30.00	
" 30	28.16		26.66	
Feb. 6	23.33		23.75	
" 13	23.00		25.10	
" 20	23.60		23.58	
" 27	21.40		20.80	
March 6	20.50		19.00	
" 13	20.66		19.00	
" 20	21.00		19.66	
" 27	20.83		18.50	
April 17	22.00		23.08	
" 24	21.80		22.25	
May 1	26.16		22.00	
" 8	23.33		22.00	
" 15	23.16		22.00	
" 22	23.75		21.91	
" 29	23.08		21.83	
June 5	22.50		20.70	
" 12	22.00		21.00	
" 19	22.00		20.00	
" 26	23.33		23.83	
July 3	23.83		22.50	
" 10	25.50		25.00	
" 17	24.83		24.66	
" 24	25.41		25.50	
" 31	25.80		25.80	
August 7	30.50		28.00	
" 14	31.16		28.66	
" 21	31.25		30.16	
" 28	30.58		29.16	
Sept. 4	30.08		30.16	
" 11	34.33		31.66	
" 18	37.08		33.37	
" 25	38.66		34.66	
Oct. 2	40.08		37.33	
" 9	40.08		38.00	
" 16	45.50		40.00	
" 23	48.08		42.00	
" 30	48.58		42.83	
Nov. 6	51.08		43.00	
" 13	54.25		45.33	
" 20	53.83		45.00	
" 27	52.90		43.40	
Dec. 4	43.91		40.16	
" 11	41.16		37.33	
" 18	27.83		28.00	
" 25	40.80		36.60	

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Publisher's Department

In the annual review number of the California Fruit News, issued Dec. 25th, Howard C. Rowley, the publisher, has "put one over." The paper contains 84 pages of well written articles, fruit statistics, and advertisements, that are of value to every man connected with the fruit industry of California. This review number sells for 25 cents per copy and is worth the price many times over. Send for a copy.

The number of new subscribers received last week fell off to 101, owing to too much holiday spirit among the field force. However, we anticipate a big gain next week.

Three new books received from the Orange Judd Company, of 315 Fourth Ave., New York, are of interest to our readers. "The Manufacture of Ice Creams and Ices" treats the subject of ice cream making in an interesting and practical manner. The enormous growth of this industry makes the book of value especially to dairymen and dairy students. Cloth bound, illustrated. 325 pages, price $2 net.

"Mushroom Growing" by B. M. Duggar, 250 pages, illustrated, cloth bound, price $2.00 net. Tells how to grow and market this profitable vegetable.

"Sweet Corn" by Albert E. Wilkinson, 204 pages, illustrated, cloth bound, price 75c net. Treats of varieties, planting, growing, care, harvesting, insects and diseases, marketing, etc. A good book for those growing sweet corn.

GERMAIN'S 1916 CATALOGUE.

Germain Seed & Plant Co.'s 1916 General Catalogue is now off press and will be mailed free to those who ask or write for it. So full of planting and cultural directions is this book, that it has been properly termed a Garden Encyclopedia. This marks the 45th successful year of the company, and by means of their Bulb and Poultry catalogues, besides the 104-page General catalogue for 1916, they furnish the amateur or professional gardener or poultryman with a quantity of extremely valuable information. Do not fail to send for these catalogues, as they are valuable to you.

SUCCESSFUL GARDENING BOOKS.
(From Los Angeles Graphic.)

Unique in so many things, California is also different from the rest of the gardening world in several points. There are two springs, there is almost no dormant time, there are all varieties of soil and climate; best of all, there are limitless possibilities. But because it is so different in so many vital points, the accepted truths of gardening are not all the truth of California. For this reason the ambitious gardener, whether he gardens for pleasure or profit, needs a book to guide his efforts written of California by an experienced California man. No eastern book, however complete, can give him what he needs, for even the pests are different.

Such books have been written on the subject of both vegetables and flowers by Mr. Edward J. Wickson, professor of horticulture in the University of California and editor of the Pacific Rural Press. In the "California Vegetables in Garden and Field" can be found the simplest and most complete directions for every soil and every vegetable grown in California. As essentials to success in gardening, Mr. Wickson names, "Will, Water, Work." There is another, if the gardener would know the richest return of his labor, love of the work, joy in the smell of the earth, satisfaction in its yield!

Beginning with preparation of the soil, ways of irrigation and ditching of the ground for distribution of the water, the book goes minutely into every detail of planting, growing and marketing. Each variety of vegetable has a chapter denoted. Nothing was forgotten or omitted in this most complete aid to successful gardening. Acceptable at any time of the year, as it is always the time to plant something, "California Vegetables" should be on everybody's list.

Between the extremes of the botanists's pride and delight, and the florist's artificial ways of producing monsters, lies the wide "mesa of moderate effort and moderate investment upon which anyone, with a love for it can grow in California through the whole circle of the year, by the square foot or by the acre, flowers to delight his heart, to comfort his wife and educate his children," says Mr. Wickson in the preface to "California Garden Flowers." Again, beginning with the soil, continuing upon fertilizers, tillage and irrigation, every stage of the flower garden is adequately treated. There is a chapter devoted to the chrysanthemums, telling exactly how to dis-branch, dis-bud, prune and water to get any style of flower you wish. Bulbs, water plants and seeds for every condition of sun and wind are carefully described. Every back yard as well as every front yard may be beautiful and livable with a little care at the right time. Add these two volumes to the Christmas shopping list, they will please the active gardener, and inspire the potential one. ("California Garden Flowers," "California Vegetables." Pacific Rural Press, Publisher, San Francisco.)

ADVERTISEMENTS.

"This bloomin' paper's full of ads," Lifelong Subscriber cried, "it's got them on 'most every page and even some outside. They've crowded all the reading out with their insistent pleas, and they are scattered through the pages about as thick as fleas. They each exploit some patent thing to help the work along, or something that they say will make life one exultant song. They argue that you can't afford to pass their products by, and then they limber up and tell you all the reasons why. They're so doggone persuasive that you must be on your guard, or you'll purchase labor savers; and it makes it mighty hard.

"We've got along these many years in the old-fashioned way; I wonder why they're not content to let tradition stay; why should twine binders supersede the cradles of our dads? Why all this advertising of these new-fangled fads? Why advertise in papers, or in the magazines? Why waste this hard-earned money in pushing new machines? I never got an idea yet from reading all their stuff; I always thought it just a lie, or else, at least, a bluff, I read the jokes wherever found, and all the lover's tales, but I never read the ads, you bet, for there my patience fails."

And the editor took up his pen and this is what he wrote: "I've just perused your letter and its contents all I note. The sentiment therein expressed has caused me some surprise, for the brainiest lads in all the world are those who advertise. They pioneer with progress and they help the world to move; it's they who furnish ideas to force us from our groove; they've always got a better thing to ease our carking toil, and it's advertised machinery that cultivates the soil. And I'd say here in conclusion, that I write a bale of stuff that isn't well considered and is written on a bluff; I oft relieve my system of a lot of cheap advice that is put in circulation ere I've thought it over twice, but the dope the advertisers put in the space they buy, you bet is up to standard, and to it you're safe to tie.—Fruit Grower.

MISCELLANEOUS NOTES.

Arrests of cattle rustlers are reported from El Centro, Imperial county, and Sonora, Tuolumne county.

State Market Director Weinstock was elected vice-president of the National Ass'n of Marketing Officials. Thirteen States have market officials and prospects are that as many more will by next year.

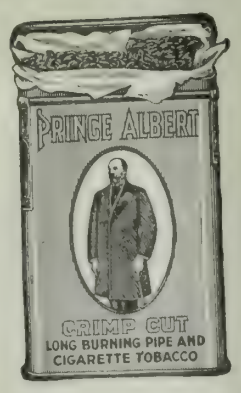
Water rates in Placer county are not lowered by the Railroad Commission, but the company must furnish all that is needed for irrigation. Much of the foothill section has remained undeveloped for lack of water and much litigation is now ended.

The Dairy Cattle Congress will hold its annual exhibition October 9 to 15, 1916, at Waterloo, Iowa. Additional features are a cow-testing association demonstration, a working creamery, butter demonstrations, and a stock judging contest. The Iowa State Dairy Association will hold its meeting at the same time.

Yuba county held a celebration Dec. 10 in honor of their new 2200-foot concrete bridge at Marysville which cost $200,000, though concrete material was taken from the river bed. This was all paid from the direct taxes. They have no bonded indebtedness, but are saving their credit for good roads bonds.

The Western Meat Co. of San Francisco purchased the following fat stock at the Pacific International held at Portland last month: California King, a steer bred and raised by the University of California, 17½ cents per pound; California Hope, raised by the Cal. University, 12¾ cents; the 2nd prize yearling of the show at 11½ cents; 2nd prize carlot of steers at nine cents; 3rd and 4th prize carlot of light hogs at $6.15 and $6.35 a hundred. All of these were disposed of to the holiday trade.

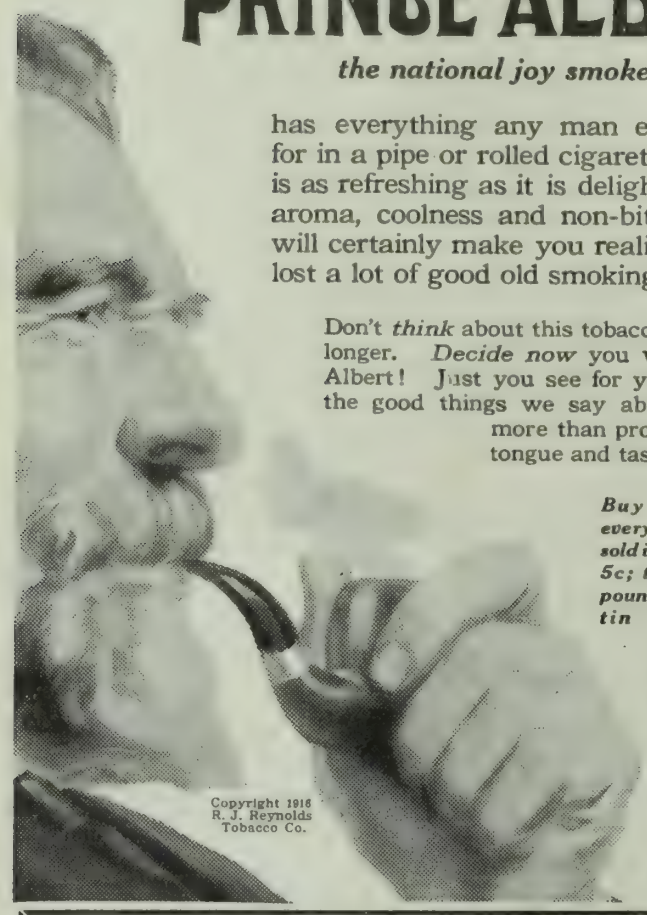
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for men to get a new and cheerful understanding of how good a pipe or rolled cigarette can be. If you *think* you can't smoke a pipe or a makin's cigarette; if you are taste-tired, we tell you Prince Albert will bring you back without any fuss or feathers—quick! The patented process fixes that—and cuts out bite and parch!

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Don't *think* about this tobacco question any longer. *Decide now* you will try Prince Albert! Just you see for yourself that all the good things we say about P. A. will more than prove out to your tongue and taste!

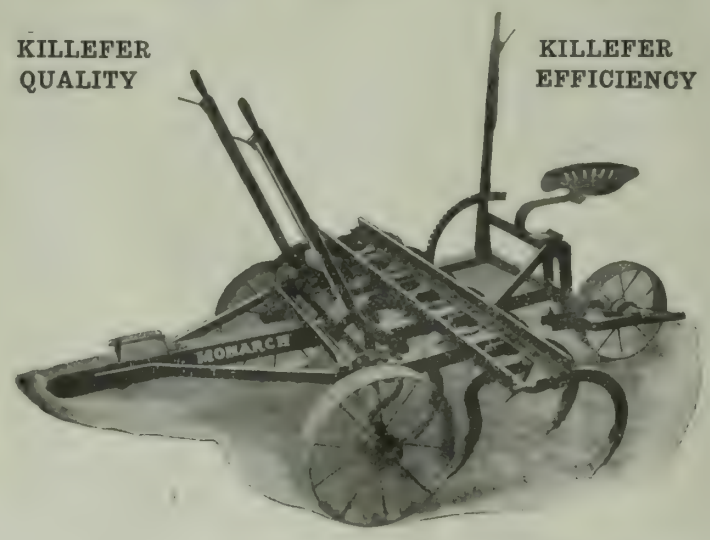
Buy Prince Albert everywhere tobacco is sold in toppy red bags, 5c; tidy red tins, 10c; pound and half-pound tin humidors and in that classy pound crystal-glass humidor with sponge-moistener top that keeps the tobacco in such fine trim.

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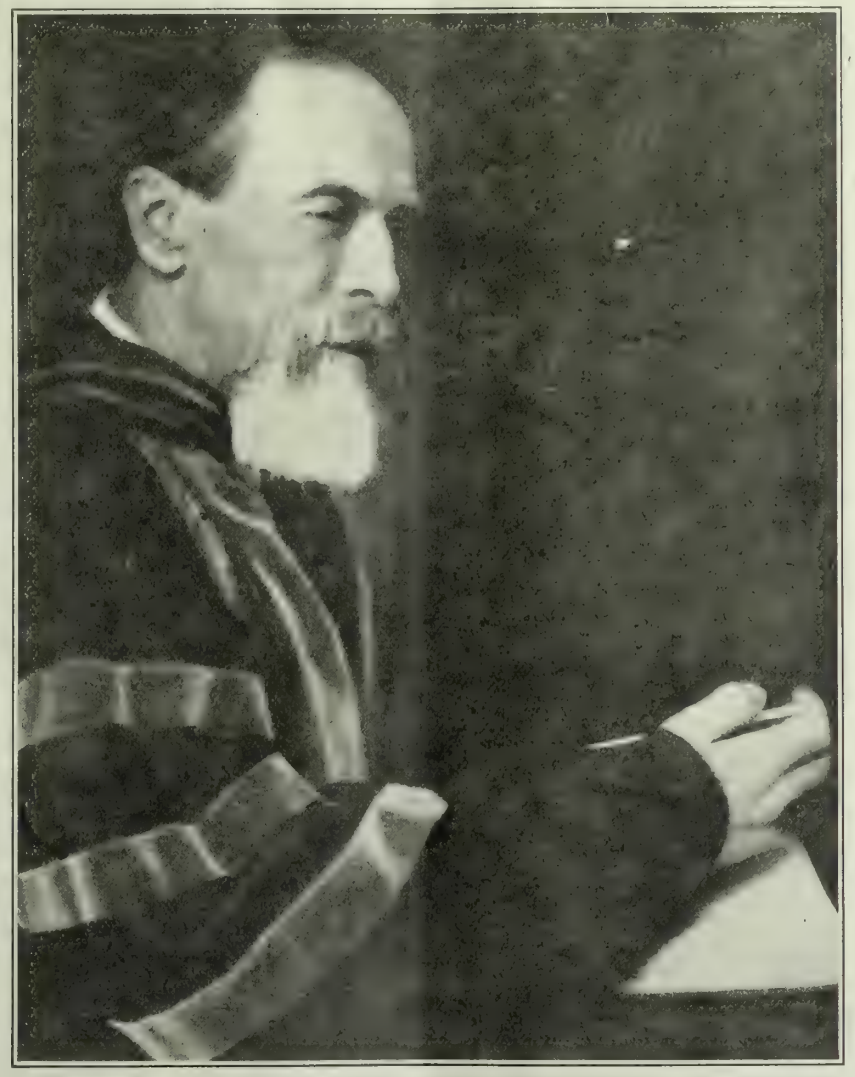
SAN FRANCISCO JANUARY 15, 1916. LOS ANGELES

California State Library

Demise of Dr. E. W. Hilgard.

Close of a long life of distinguished service to the learning, science and agriculture of California.

ON SATURDAY, January 8, three days after the completion of his eighty-third year, Dr. E. W. Hilgard of the University of California passed peacefully and obediently beyond the veil. From scenes of earth amid which he had labored lovingly, devotedly and with distinguished success during the later and richer half of his lifetime, he went forth to the enjoyment of a life in which he had always held trusting confidence and expectation. The results of his labors are the warp of California's first half-century of intellectual and industrial life and upon such enduring work as he achieved will be spread the splendid fabric of our coming State advancement and development. His mind was richly endowed and carefully trained in learning, both old and new. He possessed notably the creative faculty in thought. He was quick to see his opportunities of public service, to recognize his duty therein and he was masterful and tireless in pursuit of it. He was bold in his conquest of truth and fearless in his use of it for the interests of mankind. His great undertaking was in natural science and its relations to agriculture — seizing gladly the smallest fact from research and pressing it to the humblest service but always perceiving and enforcing the relations of both the fact and the service to the broadest interests of his state and of his fellow men. Thus all came to know him as richly wise, unswervingly true and deeply patriotic and humanistic—a man whose thinking was clear and whose motives were as unselfish as his service of them was forceful and effective. His achievements were great and diverse and his honors therefore great and widely bestowed.



THE LATE PROFESSOR HILGARD.

Father of agricultural education and research in California and founder of the California Experiment Station, the oldest in the United States.

At the moment of his departure the only fact which comes clearly to the mind of this writer is that California has lost a citizen of great achievement and influence, whose monument will be the greatness of his work for California which can never be forgotten because it was so great, so everlastingly sound and true and so closely related to the happiness and prosperity of his fellow citizens and of all who shall come after him. It is most fortunate that he was allowed to approach as near as man ever comes to the completion of his work, and to enjoy the realization of remarkable public advancement along lines which he early discerned, forcibly marked out and labored to deeply impress upon the great institution of whose history his life and accomplishments will always be recognized as an integral part.

It is too soon to undertake analysis or even full sketch of the public services of Dr. Hilgard. That must be attained by thought and circumspection, which may give some approach to adequacy in a tribute to the man and in an estimate of his worth and work. At the moment of his departure an outline of the plainer facts of his life will serve readers best to refresh their memories of him or to measure broadly the scope of his experience and activities, both of which are remarkable. The following is a careful biographical sketch prepared by those who have been longest associated with him and it is believed to be as correct and suggestive as such a brief outline of so rich and long a life can be reasonably expected to be.

Eugene Waldemar Hilgard was born January 5, 1833, at Zweibruecken, in Rhenish Bavaria, the son of Theodore Erasmus Hilgard. He was brought to this country by his parents when three years old, his family settling in Illinois as farmers and sending their son to Belleville for his early education. After his graduation from high school there and service on his father's farm, he returned to Germany to take advanced work in the University of Heidelberg, from which he was graduated with honors and a doctor's degree in 1853. This degree was re-issued to him in 1903 as a "golden degree" in recognition of half a century's good work for science. He studied also at Zurich and Freiberg, in Saxony.

Before his return to this country, Professor Hilgard met and married Miss J. Alexandrina Bello, the daughter of a prominent resident of Madrid, Spain. Returning to America, Professor Hilgard was appointed state mineralogist of Mississippi, a position which he held for six years, and afterward professor of chemistry in the university of that state, then professor of geology, zoology and botany. He left Mississippi for Michigan to take a position on the faculty of the University of Michigan, but remained there only two years, when he was called, by the Regents of the University, to California in 1875.

The college of agriculture of the University of California, though considered the real nucleus of the university, was in an undeveloped state, and upon Professor Hilgard was thrust the task of bringing it up to the high standard which he held in educational affairs. It

(Continued on page 67.)

PACIFIC RURAL PRESS

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R. E. HODGES - - Assistant Editor
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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., January 15, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	4.18	18.33	19.10	52	34
Red Bluff	.28	12.26	11.31	50	30
Sacramento	1.35	10.35	8.08	54	34
San Francisco	2.18	14.02	9.50	56	38
San Jose	1.04	8.98	6.97	56	30
Fresno	.55	5.06	4.13	58	32
Independence	1.42	4.19	4.09	50	—
San Luis Obispo	2.60	11.29	7.53	58	34
Los Angeles	1.12	6.70	6.00	64	40
San Diego	.68	3.74	3.79	60	44

THE WEEK

Things are surely continuing to come California's way. Rains have again fallen copiously and over wide area. Temperatures have been a little sharp here and there, but so far have dropped where there was nothing tender to hit, and it is getting late for injurious freezing. All seasonable soil-working and planting are progressing toward what now promises to be large production.

Other things are also coming California's way. A committee of the U. S. Senate has made a report favoring equal suffrage, and the national government is now up to the issue which California has settled so satisfactorily. It seems to us a little trite to argue for equal suffrage when our experience has given a demonstration which is beyond argument, and yet it may interest some to see how the old argument looks in print again. This is a part of it:

"Women comprise 50 per cent of our population. They are citizens in all other respects. Together with the men, they constitute the people. In patriotism, intelligence, devotion to welfare to the government and in capacity for franchise, they are in nowise inferior to men. Neither logically nor justly can unlimited suffrage be recognized as an essential to our republican form of government and its existence at the same time be limited to one-half of the people, arbitrarily segregated from the other half by the accident of sex."

Does it not sound like a story from the first reader to a Californian? But California has other bright and sweet things than women—though we suppose our words are an affront to the might of citizenship. California has a larger variety of birds than any other State in the Union, according to investigations by Professor Joseph Grinnell of the University of California. There are 541 distinct species of winged travelers in California and among them are, he says, most interesting sorts. He points out that the State of Texas, two-thirds as large again as California, has not nearly so large a variety of birds as this State. And it should be remembered that we are similarly rich in bugs and in plants. Man is not the only organized life which knows California for a good thing.

Dairy Cow Contest Postponed.

The opening of the Dairy Cow Contest, of which announcement was made in our issue of December 25, has been postponed until November 1, 1916, as the result of protests filed against its beginning on January 1, by the California Cultivator and the Live Stock and Dairy Journal. The facts leading up to this regrettable circumstance are as follows: The Pacific Rural Press, recognizing that more productive cows are a fundamental need of dairy development and prosperity in this State, and honestly desiring to assist in the wider attainment of such animals in dairy service, proposed to Prof. F. W. Woll that he undertake in California such a State-wide cow-contest as he had previously carried to great success and wide influence in Wisconsin. The effort commended itself to him and to Prof. True, the head of the Animal Industry Division of the University—the clear understanding being that this journal should have no advantage in publication, and the announcement of the contest must be sent on the same date to all agricultural journals, for such use as they saw fit to make of it. This course was followed and the announcement appeared in the Pacific Rural Press and the Pacific Dairy Review and in some of the general newspapers, stating the terms of the contest and offering a fine lot of awards, contributed by those who desire greater progress and prosperity for the dairy industry. We understand that the California Cultivator and the Live Stock and Dairy Journal filed protests against the undertaking with Dean Hunt of the University. We have not seen them, but they are supposed to object to the proceeding on the ground that the initiation of the idea, as well as the formal offering, was not announced by the University to all journals that they might have the same chance to engraft themselves upon the idea as well as to announce the growth upon it. Dean Hunt considered the matter judicially and patiently, and concluded that, as the University had not formally and officially made the announcement, the contest could not proceed in the name of the University. For this reason the opening of the contest was postponed until November 1 of the present year, and all who had made contributions to the awards will be requested to renew them for that date.

What We Think of the Facts.

Thus we have endeavored to make a clear statement of unfortunate facts without reflection or impugnment of motives. The facts show that by appeal to a technicality our contemporaries have succeeded in taking the edge off an undertaking in cow-testing which would have awakened and stimulated all dairymen to fuller appreciation of what kind of a cow is worth feeding; which would, by comparison with the great dairy State of Wisconsin, have shown where California cows actually stand as profit-producers and would have set up local standards of cow-production, which all could be effectively exhorted to work towards or away from, as the case may be. The action of our esteemed contemporaries could not kill the progressive initiative upon which the contest was proceeding, but they have delayed it and thereby practically lost a year in the pursuit of a desirable and honorable enterprise. This time these protesting journals can probably profitably employ on explaining to some of their friends who generously and enthusiastically supported this proposition, which promised so much for dairy progress, why they caused them to lose a year in building their business toward greater satisfaction and reward.

We do not enjoy writing this way about anybody, but we cannot allow such a narrow and selfish interference with work which is good for the State to go unrebuked. As we recently wrote in another connection: "Agricultural journalism is a game that must be fairly played; the public hates anything which is unsportsmanlike." We are conscious of having done in this connection nothing which is unfair or unjournalistic. We put up a proposition for the good of the dairy industry and of the State. It was the public duty of other journals, holding ambitions and purposes like ours, either to let it alone or to support it in their own way, and to get for themselves the rewards of honorable effort and enterprise—as we were doing and have a right to do. Or, better still, they might have drawn from the open field of thought and knowledge something better than we could think of, for us to admire and imitate. Failing to do any of these things, they had no journalistic right to "throw in a monkey-wrench and stop the machinery" of progress. For this kind of "enterprise" they have the public to settle with.

The Prune-Growers' Convention.

Ample announcement is made on another page of this issue of the State-wide convention of prune growers, called to meet in San Jose on Wednesday, January 19, at 2 p. m. Growers from a distance should find the Chamber of Commerce and learn the place of the convention, which, we presume, will depend upon the numbers to be accommodated. We continue to call it a "convention of prune growers," although the committee has decided to graft on the apricot. That will be done, but just at the moment it seems to us to have more weight when we consider it a special effort of the vastly greater prune interest of the State. The convention will give the undertaking a business and a name which, of course, we shall accept and promote to the best of our ability. At the meeting in San Jose last week there was much written assurance of participation from outside districts, and many delegates from local groups of growers will be present. As the time is short for local meetings to name delegates, we hope there will be a large number of individuals present on their own initiative, so that the State will be widely represented. All such participants can lead in local organizations later. It seems very desirable that torch-bearers should go out from this convention into every neighborhood where prunes are grown. It will be seen by the announcement on another page that the movement is approved by the Grange and the Farmers' Union. This is important. All organizations dealing with producers' co-operation should take part in the convention. Some of them are already doing great things with prunes, and surely the convention will welcome everyone who has succeeded in getting

rid of a pound of prunes with profit to the producer. All probably do not know how much is already being done by sales' agencies organized in the growers' interest. Take for instance, the work of the Farmers' Union, of which Mr. Breton, of that organization and also of the Prune Growers' Committee of 1915, gives us these interesting facts:

"Let me recite briefly what the California Farmers' Union is doing and has done, so far as Santa Clara Valley is concerned. Up to 1911 the packing of Union Seal prunes was done in rented houses. In that year the members around Morgan Hill put up a packing-house; in 1912 the members around Campbell built a packing-house; and in 1915 the members around Gilroy and Rucker did likewise. Each of these houses cost in the neighborhood of $11,000. Do you need any further evidence of the growers' willingness (when the right proposition is put up to them) to reach down into their pockets and bring their hands up with a substantial quantity of gold to better their condition? We have found them willing and ready to support with both money and product."

No doubt other growers' organizations have also done well, and if we had the facts we would like to recite them in this connection. Our idea is that all good organizations now existing must be built into the general structure—whatever nature the convention will determine for it. All rivalries, if there be any, must be merged into a general cordial and influential co-operation, if there is to be any such attained. It is a great problem to do this, and it may take more time and experience to reach such a result as we hope for, but the place to begin is in San Jose, and the time to begin is Wednesday, January 19.

Caught on Their Own Prickles.

It is pretty well known, we presume, that some of the spineless cactus which has been unloaded on the public is hardly smoother than the rough side of a porcupine, and some losses have accrued to purchasers thereby. To such it may be some consolation to know, according to a writer in the Oakland Tribune, that those who unloaded such stuff on them were caught on their own prickles. This is the story as we find it:

"It seems a cactus corporation was formed when the general Burbank enterprise was launched, and the stock put upon the market. The public took hold of the offering with avidity. The stock met with such ready sale that the promoters were led to think they had made a mistake in offering it so freely, and they began buying it back. They are reported to have reloaded with large blocks, at prices considerably in advance of those which they received on the original sale. As has been seen, expectations were not realized. the cactus boom was not permanent; and this is perhaps the only known instance of boomsters falling for their own boom."

And it all comes from the credulity of people who seem never to be so happy as when rushing into things which they do not understand.

California's Crop Values.

As an indication of agricultural prosperity in this State, the following figures, taken from the San Francisco Chronicle's annual edition, are of interest: "The total production for the year 1915 of agricultural products had a value of something like $479,000,000. Estimates of crop yields are: Wheat, 7,040,000 bushels; barley, 39,440,000 bushels; oats, 7,700,000 bushels; oranges and lemons shipped during the year ending August 31, 1915, reached 47,659 carloads; prunes, 175,000,000 pounds; raisins, 120,000 tons. Crops of corn, rice, oats, alfalfa, sugar beets, beans, hops, almonds and walnuts all showed substantial gains over 1914."

Queries and Replies.

Querists must give name and address.

Driest Land Pasture.

To the Editor: What kind of grass would you sow for pasture on uplands on the west side of the San Joaquin valley which has always been used for pasture? The soil is deep sandy loam, one hundred feet to water. What do you think about sudan grass for such a place?—W. T.

The region you indicate is one of scant and uncertain rainfall and the soil non-retentive. Under such conditions we know of no perennial grass which will hold life in the root through the dry season. Probably it must still be used for wild pasture unless you can get irrigation water. Natural winter growth of annual plants, winter-pastured green and used for dry feed later, the growth reinforced by fall scattering of wild oats, bur clover, filaree—so far as you desire to invest in that direction to cover the land better with winter growth. Do not overstock, and give the plants a chance to ripen some seed early in the summer before dry-feeding. Sudan grass does not appeal to us in such connection. It cannot stand frost, therefore cannot use any surplus winter moisture there may be and we should expect the summer growth to be scant. However, has any one proved it good on such dry land?

A Guess at a Cherry Trouble.

To the Editor: We have grafted our cherry seedlings in December, January and February and in all cases the buds swell and break and look fine. One would think that it would be a 100 per cent stand. Then when warm weather comes on they begin to die and we get only about 50 per cent. What is the cause? Some think when the buds swell they fill with water and drown.—J. W. R., Sebastopol.

We can only guess at it and our guess would be that the granulating process is prevented or destroyed by excessive sap-flow, there being no top to take most of it. We should run a tree-digger under the row and cut off a lot of the seedling roots or else graft in March or April (in your rather late district) after the roots have shot much of their first flow of sap into the old top before its removal. We should try the root-pruning first, for grafting so late might conflict with other pressing spring work. Besides cutting off the long seedling roots will make your stock better for transplanting next winter. Why did you not bud this stock last August instead of holding it over for grafting?

When is Soil Right to Work?

To the Editor: I wish to call your attention to the fact that of all the agricultural articles I have read I have never yet seen a paragraph describing the proper moisture condition soil should be in for plowing and other working. Perhaps you will give your views. My own idea is that the soil has the right moisture when it does not stick to the tools—barring San Luis Obispo adobe, which is a corker, take it any way you have a mind to.—James Cass, Cayucos.

You have put about all the wisdom there is in that paragraph. If a man can keep his tools bright he will not be taking the soil at its best, but will be doing the best with the power he is using. But he should be at it just as soon as it will keep the tools bright and not long afterwards—because it is at the beginning of the brightening condition that the soil will crumble best. Our rule excepts sticky adobe, just as your rule does, and adobe is just right when it is a little too wet—that is for the plow. The harrow works best when it dries out just a little too much for the plow. You do not see this in print because, after you have printed all the rules you can think of, it is a matter a man has to learn by experience.

Legumes Growing with Grain.

To the Editor: When should cowpeas be sown with oats? Could they be drilled in, when the oats have started? At what rate? Do they increase the yield of crop, and value of the hay?—H. T., San Luis Obispo.

Cowpeas will not serve you with oats because cowpeas will not make good winter growth, such as you expect to get from oats. They do not endure frost. Common field peas or vetches are the legumes for you to sow with oats. They should be fall sown with the oats; they would probably be smothered or dried out by oats which have that much the start of them. It is usual to sow about half as much by measure of peas as of oats either in drilling or broadcasting. Dr. Lipman tells us that it is fully demonstrated that the legume does feed the grain while both are growing together. The hay is improved by the increase of the protein content, contributed by the legume.

Allowing Peaches to Go Unpruned.

To the Editor: Owing to unusual circumstances it will be rather difficult to get my peach orchard pruned and would like your opinion as to whether or not any harm would be likely to result to trees or next crop if it were omitted this season? The orchard is in Yolo county, eight years old, has heretofore received good care and produced average crops. The soil is a deep loam, orchard is not irrigated, the rainfall averages about twenty inches and last season the trees made a very good but not excessive wood growth, the variety being Muir.—Subscriber, Woodland.

It may be done and in fact is done too often—and yet the peach is of all fruit trees most likely to be injured and to have its life shortened by such neglect. If you allow the tree to set fruit on all the new wood grown last year, you will be obliged to spend much money in thinning to make the fruit of salable size and to protect the tree from breaking badly. Besides, if you allow the tree to over-bear such a mass of worthless fruit, you face the chance of getting less fruit in 1917 and of impairing the thrift of the tree. Probably the crop of 1916 can be made profitable by pruning for less money than by thinning, propping, cross-tying and other work which may be necessary to save the trees.

"Chul" Wheat.

To the Editor: Can Chul Wheat be grown in the San Joaquin Valley successfully or not? I have been told it was a very good wheat for dry farming, as it doesn't rust and will stand the drouth.—R. T. M., Richgrove.

It is such a hardy wheat as has been described to you, but millers, we understand, still do not like it, although it was hoped they would come to using it. If this is generally the case the wheat has to go for feeding purposes. Has any one experience otherwise?

The Prune Growers' Convention.

[Written for Pacific Rural Press by the Editor.]

NOTICE TO PRUNE AND APRICOT GROWERS:

Remember that the mass meeting of January 19th, 1916, at 2 p. m., in San Jose, is your meeting, and your attendance is necessary to full success of the meeting.

Growers from districts outside of Santa Clara Valley specially invited. J. H. BONE, Chairman. H. O. H. SHELLEY, Sec

Preparations for the convention called by the Prune Growers' Committee of Santa Clara county to give opportunity for the organization of a State-wide association are progressing actively. At the meeting of the Committee in San Jose on January 5 which the writer had the advantage of attending by invitation, the keenest interest was manifested and the committee was most harmonious and actively interested. It has been decided to include in the invitation to the convention those also who are interested in apricot growing and curing. We give below the official announcements by the committee which all interested should accept as a cordial invitation to take part in the coming convention.

A General Statement by the Prune Growers' Committee.

In May of last year it became known to the Growers of Santa Clara county that the packing interests had sold a thousand cars or more of prunes at 3½c and that a number of growers had already sold for this price and some for less. Also that apricots were being bought at 6c.

In support of these low prices the packing interests claimed an immense crop of both these fruits in Santa Clara Valley and further that there would be no export trade in 1915 owing to the European war. Both of these claims have proven erroneous.

A mass meeting of the growers was held in San Jose's Chamber of Commerce rooms at which twenty or more districts in the valley were well represented.

The meeting developed the fact that there would not be more than 70,000,000 pounds of prunes and only 65 per cent of the 1914 crop of apricots. Prices for the latter in 1914 averaged to the grower 10½c.

These estimates proved larger than the actual crop results.

The growers unanimously agreed to hold prunes for a 5c basis. Apricots were considered worth 8½ to 9c.

Upon the suggestion of Mr. J. O. Hayes of the San Jose Mercury a representative from each district was selected to constitute a Bureau of Information and make semi-monthly reports on market and crop conditions as a guide to the growers and hold prices to a living basis.

Prunes ultimately went to 5c and the bulk of the apricots sold at 8 and 8½c, thus saving to the growers a million dollars or more.

This committee now called a mass meeting in San Jose, January 19th, at which it is expected that Col. H. Weinstock, State Market Commissioner, and Professor Wickson will be present, for the purpose of proposing to the growers that a State-wide organization be formed as a means of protection from speculative packing interests, to furnish accurate information relative to crop and market conditions, and finally, if necessary, to provide their own selling agencies.

It is only justice and equity that the growers should know from their own organization what is a fair price for their products and aid in getting it.

We invite the growers of your district to send representatives to this mass meeting, but if you are unable to do this, get together, discuss the matter among yourselves, and get in touch with the Santa Clara County Prune and Apricot Growers' Committee at an early date.

Jos. H. Bone,
Chairman of Committee.

The Official Invitation.

A meeting of the Prune Growers' Committee was held Jan. 5, 1916, to consider the work of the past season in its relation to the mass meeting of prune and apricot growers to be held Jan. 19 at 2 p. m. and they request the growers to remember the date.

Endorsements by the Grange.

The San Jose Grange at their meeting on January 8 adopted the following:

Resolved, that San Jose grange endorses the work of the 1915 prune and apricot growers' committee, and

That they form an organization of a state-wide association as a means of protection from speculating packing interests and furnish accurate information relative to crop and market conditions.

Santa Clara Pomona grange at a meeting on January 8 adopted the following:

Resolved, That Santa Clara County Pomona Grange endorses the work of the 1915 prune and apricot growers' committee and favors an organization of growers to be state-wide for the following purposes:

Protection from speculative packing interests;

To furnish accurate information relative to crop and market conditions, and any other information of service to the growers.

Further, That the secretary of Pomona Grange be instructed to advise the local granges of the adoption of this resolution and that they be requested to give publicity to the mass meeting, January 19 and insure its success.

Approved by the Farmers' Union.

D. M. Utter, president of the State Farmers' Union, has given Chairman Bone assurance that they will give the movement their hearty support.

EGYPTIAN CORN AS SUMMER FORAGE.

The possibilities of sorghum as a stock food have been set forth in these columns many times and yet the acreage is not so great as past experience would warrant, especially for a summer forage on dry farmed land.

On the T. D. Carneal ranch in Contra Costa county a three-acre field is set aside each year for Egyptian corn to be fed as a soilage crop to the dairy cows and beef calves.

No irrigation is practiced, the ground being prepared as soon after the winter rains as possible and then kept well cultivated during the summer and fall months.

As soon as the first growth has reached a height of two and a half or three feet, cutting is started on one side of the field, the practice being to cut the stalks close to the ground in sufficient quantities to supply green feed for each day. By the time the patch is cut over once in this manner the first cut portion is again high enough to be cut. Three crops a year of the green fodder is harvested in normal years in this way, furnishing green feed during a portion of the year when the balance of the ranch is dried up with the summer heat. Good cultivation seems to be the chief requirement in growing the crop on Mr. Carneal's ranch.

LIME FOR BROWN MITES?

[Written for Pacific Rural Press.]

Brown mites are mostly on tops and sides of the twigs, according to J. H. Davis of San Joaquin county. He has noticed more on the Robe de Sargent than the French prunes beside them. He also noticed that while they were thick on part of his orchard, there were practically none at all in the orchard of J. H. Clancy just across the road.

Mr. Clancy sprays only once a year, using whitewash and salt in February. Forty pounds of lime and 2 or 3 pounds of salt, which is used to make the whitewash stick, are mixed with 200 gallons of water and applied with a power sprayer with two lines of hose. Big nozzles are used because, as Mr. Clancy says, it is cheaper to waste whitewash than labor. It requires a little over 200 gallons of spray per acre and two hours to apply it. The cost of two men and a gentle team, beside gasoline and depreciation of the outfit, are figured at $8 per day. A whiteish tinge on the trees a year after the whitewash was applied in January or February, 1914, shows that it sticks well. Who else has observed the effect of whitewash on brown mites?

TREES SET TOO SOON AFTER DYNAMITING.

[Written for Pacific Rural Press.]

Trees very often die when set in holes recently dynamited. Three years ago in February, J. G. Williams of Santa Barbara county shot about 250 holes and planted Royal apricots directly. He has a sandy somewhat drainable "hardpan" about 2½ feet under the surface of the loamy bench land. The trees did very well the first year, in which there was but little rain.

The winter of 1913-14, however, was wet enough to soak the ground, and many of the trees settled as much as a foot. Early in spring, but possibly after the sap had started, these trees were replanted. Most of them died. Others settled some but were not replanted. They lingered along and died, so that new trees are to be reset in their places this spring. Use of this land has been lost for three years, and the new trees will be that far behind what they might be. Dirt that requires blasting is usually loosened in chunks between which are air spaces which will dry them and the roots unless settled thoroughly by time and water.

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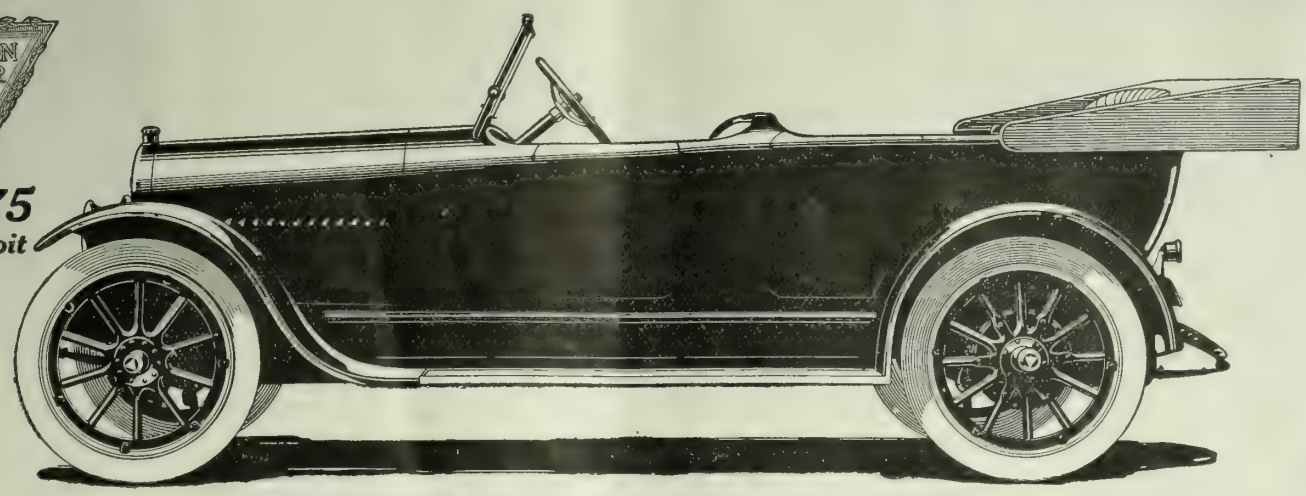
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100 miles in 80 minutes, 21.4 seconds, averaging ***74.67 miles per hour,*** with driver and passenger.

The previous best record was made with driver only, with a larger motor and more cylinders.

75.69 miles in one hour with driver and passenger.

Standing start to 50 miles per hour in 16.2 seconds.

Mark what those records mean.

No other stock car in history has equalled that performance. No other like-size motor has ever developed such power.

The Super-Six has proved itself the greatest engine ever built. It has outrivaled Eights and Twelves. It has almost doubled the efficiency of Sixes.

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And all that increase—that added 80 per cent—comes through wiping out vibration.

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You ask why you need that 76 horsepower if you don't care for high speed.

You need it because it means vast reserve power, to mount hills without effort, to make hard roads easy, to avoid changing gears. Also it enables you to creep on high gear, and to pick up with record quickness.

And it all comes through lack of vibration. So it brings with it bird-like motion. The motor is so smooth that the car seems to move by magic.

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We stopped production on former Hudsons when the Super-Six proved this supremacy. Thus we lost over $6,000,000 in sales last fall. We also stopped our experiments on Eights and Twelves.

Then we doubled our factory to meet a doubled demand. And we bought materials for $42,000,000 worth of these new cars for this season.

All because the Super-Six is bound to dominate hereafter. Its performance is resistless. Any buyer of a high-grade car will choose it when he knows the facts It will also win thousands from lower-grade cars to the Hudson.

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Spray for Apple Mildew.

To the Editor: Some of my apple twigs last spring were covered with white furry stuff and the leaves were stunted, dying shortly after they started. They were the same way the year before but not quite so bad. —J. L. B., Stonyford.

Your trouble is powdery mildew which winters over in the dormant buds. That is why the leaves are dwarfed and dying so early in the spring. Sulphur more finely divided that you can obtain in flowers of sulphur is the remedy. This may be obtained in commercial forms as atomic sulphur or milled sulphur, or it may be prepared at home into the form of finely divided sulphur obtained in a mixture with iron sulphide at a cost for material of about $1 per 500 gallons of spray as recommended by W. H. Volck of Pajaro Valley. It is applied just before the buds unfold in spring or often combined with arsenic sprays for codling worms just after trees are in full bloom. The stock iron sulphide mixture is prepared as follows, beginning at least two or three days before spraying begins. It will keep indefinitely. When ready for use it is diluted to make 500 gallons of spray mixture.

Suspend 10 pounds of iron sulphate (copperas) in a sack near the surface of the water in a 50-gallon wooden barrel about two-thirds full of water. When all this is dissolved, measure 2¼ gallons of 33 degree B. commercial lime-sulphur or 2 gallons and 3 pints of 32 degrees or 2 gallons of 35 degrees lime-sulphur. Pour all but a quart slowly into the barrel, stirring it vigorously with a hoe or shovel. Let it settle a few minutes, then dip out with a glass or cup, a little of the clear liquid at the top. If there is no yellow lime-sulphur color, it means there is some copperas not yet combined, so a little more lime-sulphur must be added, stirring well. As a thorough test for this, pour a drop of lime-sulphur into the glass of liquid; and if it produces some more settlings, pour about half of the remaining quart of lime-sulphur into the barrel, stirring well, and then let it stand. Test it again and again in this fashion until a pale yellowish tint shows a very slight excess of lime-sulphur. Fill the barrel with water and stir vigorously, then let it stand a few hours. The settlings will fill it one-third or half way up. Tip the barrel and pour off the top liquid, but do not pour out any of the settlings. A spigot in the side of the barrel half way up will save considerable work. When most of the top liquid has been emptied, fill the barrel again, stir it, and let it stand, and pour off the liquid, repeating the process until it shows no yellowish tinge, at which time all the excess lime-sulphur will have been washed out of the settlings. This may require three or four washings. Then fill the barrel to exactly 50 gallons and this will be the stock solution. When ready to spray, dip out 20 gallons after stirring well and dilute it to 200 gallons for a spray tankful. Double this much dilution will be nearly as satisfactory if specially thorough application is made and repeated about 10 days later and twice more at intervals of three weeks.

WALNUT TREE RECORDS INDICATE DRONES.

[From address at State Fruit Growers' Convention, Visalia, by Dr. L. D. Batchelor, U. of Cal. Citrus Expt. Stn., Riverside.]

Many of the new walnut varieties of the future are doubtless growing in obscurity among the vast seedling orchards. Every walnut grower should be on the lookout for meritorious trees. Too much importance should not be given the superiority of solitary or "door-yard" trees as they frequently have a decided advantage over the individuals competing with each other under grove conditions.

Individual tree production records kept for a number of years, will not only enable the observer to locate superior trees, but it will also serve to locate the habitually low producing trees. These latter are contributing factors which have kept the average production for the State below 1000 pounds per acre. Many of the old seedling orchards need thinning out. The removal of the lowest yielding trees to the extent of about 25 per cent of the orchard would likely increase the eventual production per acre. Thinning out an orchard on this principle would leave a rather spotted, uneven planting, but if it raises the production it certainly is worth considering. The removal of low yielding trees should be based on at least two, and preferably three, years' records as some trees have a tendency to bear alternate years. The present year's record of 105 seedling trees in a well cared orchard in Orange county will serve to illustrate the point of varying productivity.

Five trees produced between 0 and 25 lbs., 17 trees produced between 26 and 50 lbs., 30 trees produced between 51 and 75 lbs., 24 trees produced between 76 and 100 lbs., 12 trees produced between 101 and 125 lbs., 6 trees produced between 126 and 150 lbs., 5 trees produced between 151 and 175 lbs., 3 trees produced between 176 and 200 lbs., 3 trees produced between 200 and 225 lbs.

The average tree production in this orchard was 84 pounds or 1428 pounds per acre. The twenty-two trees which produced 0 to 50 lbs. took up practically as much room and competed with the heavy producers for moisture, plant food, and light, yet they were not producing enough to pay the interest and taxes on the land they occupied. The removal of such light yielders would give more root and air space to the profitable trees and doubtless increase their productivity. The average production for a period of years should be the guide in eliminating drone trees.

Winter orchard spraying is already beginning in Alameda county.

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Thrips Spoiled Many Crops Last Year.

[Written for Pacific Rural Press.]

"Thrips cannot injure fruit buds until the petals open wide enough to allow the insects to squeeze themselves in. They have no boring apparatus and no other way to reach the embryo fruit, so long as the bud petals are rolled tight," says B. Anderson of Contra Costa county.

"There is a particular time in which to spray for thrips; and if you miss that by as much as three days, so that some of the petals are partially unfolded, you lose that portion of your crop.

"I keep close watch on my orchard from the middle of February all through March, and when I see any thrips at all on the outside of the buds, I wait until they are just beginning to loosen up and then there is some rush spraying, thoroughly done. I wait as long as possible because the insects are emerging from the ground all the time, and I want to get all that I can at the first spraying.

"I absolutely lost my crop of pears five years, and prunes three years, until I would have been broke except for income from other sources. That was because the University and the Government told me that nothing could be done for the thrips; that they spent practically all their lives in the ground; and that when they did come onto the tree, there was no avoiding them. I was discouraged, but I couldn't afford to pull up my pear and prune trees, so after going to the University, to the Government men, and to the State Horticultural Commission, after many rebuffs, Mr. Briggs of the California Development Board called a meeting of the growers of the State, in which railroads and canneries were also represented. Contra Costa county was losing fifty to two hundred thousand dollars a year by thrips, and Santa Clara county was nearly as bad. This reduced the traffic of the railroads and the output of the canneries, too.

Politics Necessary.—"Everybody told us it was silly to waste money on such a hopeless case, so we decided the way to get rid of the thrips was to go into politics. Congressman Perkins deserves the commendation of every fruit grower in the State because he got behind the movement for a thorough investigation of thrips, and used his influence as Chairman of the Senate Finance Committee to prod the U. S. Dep't of Agriculture into a scientific study of the question. They finally did send several men to various parts of the State and gave thrips a thorough study, which showed what I had already observed in regard to entering buds, and also that two or three thrips in a bud can kill the fruit if they stay there a week or so as thoroughly as a hundred thrips could in a day. A small number of thrips in an orchard doesn't mean that spraying should be abandoned, for it is merely a matter of a few having plenty of time, or many having a little time.

Emulsion Spray Necessary.—"The first spraying for thrips is to kill the adults, which have oily bodies and must be treated differently than most other insects because a water spray will roll off from their backs like it would from a duck. Distillate emulsion spray is necessary to spread the nicotine that kills them, and to make it stick to the insects and penetrate their breathing pores. I now use a commercially prepared 85 per cent distillate emulsion made with whale oil soap and oil at about 30 degrees B. per 200 gallons of spray with a pint of nicotine added. That amount of distillate is pretty strong and possibly three gallons would be safer. I could make the emulsion myself a great deal cheaper, but it is not worth while because we buy it through our local Fruit Growers' Association in large quantities from Balfour, Guthrie & Co., and I use only 10 or 15 barrels a year, and I'm getting too old or lazy or rich, or something.

"In mixing the spray, the tank is nearly filled with water and the distillate emulsion added very slowly with the agitator going full speed. This is very necessary because if the emulsion is not perfect, it doesn't do any good, and you might as well apply the oil and water separately. A pint of Black Leaf 40, which costs about $1.35, is added to the 200 gallons of spray, and the whole mixture kept in agitation during the spraying.

"I wouldn't advise the use of the same spray on prunes because I tried it once and lost the crop and the leaves, too, right up to the last tree that I sprayed. But the pears take it all right.

Second Spray, for Larvae.—"This first spraying does not get all the thrips because they are emerging from the ground all the time and they lay their eggs, which hatch after about eight days into oily larvae. The eggs are laid in holes punctured into the veins of the leaves. I have watched them hatch under a microscope. They wiggle until they get loose and are then about as big as a needle point. They grow pretty fast, and in a day or two are about as big as a pin point, and after a while we can see them with the naked eye. These larvae, and the old thrips, too, seek the protection of the folded leaves and stay there until the leaves open out, after which time they may be killed by spraying again. Last year our second spraying was done about the middle of April, but the proper time is before many of them have dropped and gone into the ground. The best way I know how to tell when to spray the larvae is when I can't find any adults, but in order to catch them before many get into the ground, I spray shortly before all the adults are gone.

Combines Thrip and Codling Sprays.—This spray is the same as the first, but I add ten pounds arsenate of lead to kill the codling worms with the same spray, and thus save a lot of work. The pears are at this time as big as the end of your little finger, and arsenate of lead properly applied gets practically all of the worms. It is poured into the spray tank just before the nicotine is added.

Power Sprayer Necessary.—"One thing about it, you can't keep your pears clean either of thrips or codling worms with a hand sprayer because a man pumping all day gets tired and lets the pressure go down. A power sprayer is the only thing that will keep up the pressure and agitate the mixture enough to make it safe and effective."

Dr. Howard S. Reed of the University of California Citrus Experiment Station gave a talk before the Hemet Fruit Growers' Association, Jan. 6th, on the subject of the Fundamental Principles of Pruning. The address was received with much interest. If fruit growers were thoroughly conversant with the principles involved in pruning trees, they could readily adapt the application or practice to their local conditions.

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Apricots, Pears and Avocados.

To the Editor: I wish your opinion on the apricot, Bartlett pear and avocado. I have 40 acres in the Perris-Hemet district, all set to apricots coming one year old. It has now cost me about $300 per acre. Do you think it will pay to keep this and depend on the fruit paying a profit when it comes in bearing? Will the apricot business be overdone? For the last few years it has not paid. What do you think for the future of the Bartlett? Will this fruit be grown to an amount which will not pay a profit? I have set fifty avocados. Will it be overdone? Few people so far know anything of this fruit and the market will have to be made, and people will have to learn how to use the pear before we can expect much of a market for it. I am new to California and I would like your personal advice.—P. H., Orange.

[You must not expect us to prophesy in a business matter; you must get all the facts you can and act on your own judgment. However, we feel warranted in saying that we consider the apricot and pear two of our most promising fruits—provided:

First, that you have the apricot in a situation largely free from spring frosts, which have a great chance to make the tree unfruitful because it starts growth so early; also that canneries are developed near to the orchard so that the fruit can be canned cheaply and in the best condition. Otherwise you are compelled to rely upon drying and the profits on dried apricots will depend upon how much of the crop can be otherwise profitably disposed of. The chance then in apricots rests upon three conditions: first, getting the fruit; second, local canning establishments; third, nearness to shipping facilities for the fresh fruit to the east. The last is the least capacious way of disposing of apricots, but it amounts to something. The grower who has these three advantages only has to depend upon drying his crop when otherwise not salable at a fair price. He has, therefore, a better chance than one with whom drying is the main chance. The general good outlook of the apricot depends upon the fact that the area where one will get the fruit is more limited than is the case with any other deciduous fruit, except the almond.

Second, the pear has all the uses cited for the apricot, and with it the shipping of fresh fruit is a much greater opportunity, but getting the fruit depends upon fighting the blight (if it exists in the locality), and this is difficult and expensive and many people will not do it. Therefore the man who gets good pears will get good money, if he is properly connected with canning and shipping, and good pears will be sought for in more remote places than apricots because they carry better and have a longer season. We believe California will never produce too many good Bartletts, for the reasons stated.

Of the avocado we do not care to say as much because it has its whole future to develop. Its success as a large commercial product depends upon two things: first, teaching the masses of the people to like it and producing it cheaply enough to enable them to use it. The claim that both these conditions will be readily reached is not unreasonable, but they are not yet demonstrated. Therefore a large planter of avocados needs not only to be sure of his location, but needs faith and courage and he must work to realize the popular conditions which are needed to make his investment profitable if production becomes large.—Editors.]

CLOTH HOLDS GRAFTING WAX.

[Written for Pacific Rural Press.]

In grafting walnuts, many people put wax on the stub and expect to re-wax when weather has melted or cracked it off. If the re-waxing is delayed until the stub has so dried that the bark loosens from it around the top, the vacancy between the bark and the stub has to be refilled with a new growth or the stub decays. The weather cracks in the stub give entrance to decay fungi that can with only the greatest difficulty be destroyed. They usually weaken or destroy the branch.

H. R. Dakin, who has for years worked on the Hearst ranches in Alameda and Sonoma counties, ties a cloth around the top of the stub so that it projects a half inch; he then fills this half way up with wax, and the cloth is laid down over the end of the stub over and beyond the cut edges of the bark. When hot weather comes and the wax loosens, the cloth holds it in place so that the stub does not dry out, and rewaxing is almost never needed. If grafts start on one side only, he chisels out the dead part of the stub clear down to the living bark and paints to the cut surface, so that it may grow over.

SUDAN GRASS BETTER THAN BEANS FOR ORCHARD RABBITS.

A remedy for orchard rabbits is to fatten them on sudan grass. G. A. Nehrhood of San Luis Obispo county credits the protection of his 300-acre orchard of young almond trees last winter to the acre and a half of sudan grass planted on one side. He would recommend, however, that two or three drills be planted around the orchard. The more the rabbits ate of the sweet tender juicy grass, the more it stooled out. Evidence of the great number of rabbits present was left in the form of "a world of manure." Orchards not far away, of pears, prunes, peaches, apricots, etc., about which blackeye beans had been planted for rabbit bait, suffered the loss of a high percentage of trees, while only three of Mr. Nehrhood's were observed to be damaged. He suggests that there ought to be good shooting among the sudan grass.

PEACHES BETWEEN WALNUTS.

[Written for Pacific Rural Press.]

Peaches half way between walnuts sixty feet apart were planted three years ago for an Alaska man by E. F. Straight of Contra Costa county. As he says, "One can use the land while the walnuts are young, and the peaches, which are thirty feet apart, will not hurt the walnuts for ten years. By that time, the peaches will be on the decline, and it won't hurt the owner very much to take them out."



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Experience in Trapping Gophers.

To the Editor: In last week's issue of the Rural Press you give space to a wooden baited gopher trap. This subject is worth all the space you can give it if you give good dope, and I think I can tell you something worth while.

To qualify as a gopher catcher will say that when I was a kid ten years old I cleared a 100-acre orange grove near Pasadena of gophers, catching about ten a day for several months, for which I received five cents per tail, duly amputated and subsequently burned by the owner of the grove, who was Scotch. Since that time, which was many years ago, I have never failed to catch a gopher that I went after. A few years ago I bought an orchard in Santa Clara Valley in which were numerous dead trees (girdled by gophers). I caught 75 gophers the first spring and have kept the place clear ever since, although they keep coming in from adjoining land.

Now the way to get them is very easy when done right. The best gopher trap I have ever seen is called the "Macabee" and is a simple little wire trap painted green, made by a man in Los Gatos, I think, and can be purchased at most any hardware store for 20 cents. I think I have seen it advertised in the Rural Press. This trap will never fail if set right. I used a similar trap when a boy, but this is better, as the trap I had then had a wire bow over the top, while the Macabee sits flat on the ground with nothing standing up except the trigger. There is no need for any other gopher trap to ever be made or purchased, as this one is sure. But it must be set right!

I have seen some people set this trap by bringing the trigger wire out front and over the jaw frame, and the end then set into the hole in the trigger plate. It can be set this way, but it was never intended to be, and when released the trigger wire will knock the gopher right out of the trap before the jaws can close. The trigger wire has a short hook about half inch long at the front end, which is designed to catch over the jaw frame and hold it down. To do this the trigger wire is brought up from underneath the trap and held upright in the center of the trap while the jaws are depressed until the short hook can be caught over them and the trigger set. When properly set the trap will be sprung and the jaws close before the trigger wire has raised more than half an inch from its horizontal position when the trap is set. It will then never interfere with the closing of the jaws.

Prepare your traps by tying a strong cord to the rear end. Have the cord about a yard long and tie the other end to a sharpened stick about 18 inches long and tie a white rag around the top of the stick.

To prepare the hole: Select the freshest mound of dirt or a fresh open hole and cut about a foot back of it with a shovel. If the hole has been plugged, the sharp stick will help you locate it in the shovel cut. Follow back until you get the hole open. If it is a small hole in the dry ground the sharp stick will be handy to widen out the bottom of it a little to make it wide enough to take the trap when set. Most holes are big enough anyway. Set the trap and slip it into the hole, pushing up a little dirt in front of it to hide the trap from the gopher. The farther it goes in the better, but be sure and put it far enough in so that the entire trap is in the hole. Then place over the hole a handful of long grass, a cabbage or kale leaf or any green stuff and then place a large clod of earth against the green stuff and sufficient loose earth to exclude all the light. Look at the trap after three or four hours and if you haven't got him let it stay over night or until he throws up a fresh mound somewhere else. After closing the hole set up the stake as far away from the hole as the string will let you; this keeps the gopher from dragging the trap further down the hole in case he is only caught by one foot or a piece of skin, and the white rag on top of the stake will serve as a flag for locating the trap when you come out to look for it, and will prevent its being forgotten.

I have never failed to catch any gopher I went after with this trap. It is simple, easily manipulated and inexpensive and a half dozen of these traps, well looked after, will clear any place of gophers within a few days. The only better method is where it is possible to drown them out by flooding. The next best thing is a few good cats that don't get anything at the house but a little milk in the morning.

Did you ever read "The Hunter Cats of Connorloa"? Well, those cats helped me clean the gophers off that orange grove at Pasadena when I was a ten-year-old kid.

San Francisco. R. H. Brotherton.

APPLYING FERTILIZER DEEP.

[Written for Pacific Rural Press.]

"I have seen lots of fertilizers applied on orchards without results. I decided it was partly due to the way it was put on," says F. E. Goodrich of Santa Clara county, who thinks that especially where they do not irrigate, it is folly to put commercial fertilizer on top of the ground because it loses plant food value when long exposed to the air. Even when drilled in, Mr. Goodrich feels that it isn't placed where it is needed, so he used a drill simply to spread it on the surface a year ago last spring, and then plowed it under right afterwards. In order to get it all six inches underground, he had a sort of a scraper in front of the plow which scattered it into the bottom of each furrow as it was turned.

"I got 20 tons of apricots last year from that little piece next to the road. Did not expect anything this year, but will get about the same again. Did not apply any fertilizer last spring because I wanted to see what the first application would do. But I will put it on next spring. It costs more that way, but it pays."

J. W. Cassada of San Bernardino county applies nitrate of soda every third year to his orange trees in addition to the regular fertilizer just to help the wood growth and restore sick trees. He puts a box of it on the cultivator with which the irrigation furrows are covered, and shovels it into the furrow ahead of the cultivator according to the needs of each tree, averaging about 2 pounds per orange tree for whole orchard.

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California County Free Library Service.

[Written for Pacific Rural Press by J. L. Gillis, State Librarian.]

In a little more than seven years, county free library service in California has grown from nothing to immensity. Its development has caused the most imaginative student of social and economic problems to rub his eyes in wonder. Its completeness of conception has filled with delight the librarian desiring to make the word service really mean what it says. And its service has made even the most astute business man realize that a library can be a real asset, can bear a big interest on the investment, instead of being a sentimental dependent.

Before the establishment of the county free library in California, the people had—if they could get it—public library service from three different sources,—the municipal library, the traveling library, and the special loans from the State Library.

Such service was extravagant because it duplicated in some places, and left bare patches in so many other places that the citizen had to build up a private collection, costing out of all proportion to the temporary use he gave any one book.

Such service was also unequal, for while the citizen was helping either directly or indirectly, to support municipal state libraries, he usually lived where he could make no use of either.

Such service was also incomplete, for it did not reach even a small percentage of the people, and never could, even developed to its highest degree.

California's solution of these problems has been the county free library system. Thirty-three counties have already adopted the plan, and each month sees new ones added to the list. It is a library for the whole county (not including towns with libraries unless they choose). The supervisors of any county have power by law to establish the library, which has business headquarters at the county seat in charge of a trained and experienced librarian, certificated by the State Board of Library Examiners. Branches are established wherever needed in all parts of the county—in a town with no library service at all; in a town wishing to have its supply supplemented; in a country community; in a school district, in an isolated home. Wherever there are people to read, there are books and magazines to be read. The number and kind of books depend upon the needs and wishes of the people. Books are moved from the branch as soon as their usefulness ceases, and fresh ones take their place.

The county builds up and owns for iself a working library of books that will be so continually in use in the branches that they wear out before they rust out. If a book is wanted that is not in the branch, it is sent free from the county free library headquarters. Failing to be there, the request is forwarded to the State library, which undertakes to supplement, entirely free, the county free libraries, even paying transportation both ways. Thus a library becomes a live, business institution, supplying its wares to the physician, the lawyer, the student, the teacher, the merchant, the minister, the farmer.

One magazine writer has called the California county free library system "the most socialized thing in the State." And a supervisor said of it, "The most pouplar thing we've done since I was on the board. Why? Because it reaches every home and everybody."

COMMERCIAL FERTILIZERS SCARCE.

Commenting on the seriousness of the commercial fertilizer situation due to the European war, the Secretary of the U. S. Department of Agriculture says: "In the unusual conditions existing in the fertilizer trade, it is important that all fertilizing materals on the farm, especially those containing potash, should be conserved. The fertilizer ingredients already existing in the soil should be utilized and developed to the fullest extent. A great deal can be accomplished in this direction by deep plowing, constant cultivation, and thorough tillage. There should be a proper system of rotation. Especially where one crop has been grown for several years a different one should be planted this year. Green manures and cover crops should be used as much as possible in their proper rotation.

"Of the organic substances, manure, both solid and liquid, is the most important and should be utilized wherever possible. All material of an organic nature, such as leaves and bedding of various sorts, should be composted and the compost applied to the soil. Special attention should be given also to the conservation of wood-ashes. Depending on the character of the wood, they contain potash in quantities varying ordinarily from three to ten per cent. All tree trimmings, brush cuttings, etc., should be burned and the ashes derived therefrom utilized.

"The application of lime to many soils is of undoubted benefit. Though the availability of the fertilizing elements in the soil may not be greatly increased by its use, the resulting improvement in physical and bacterial conditions may increase considerably the productiveness of the soil."

One hundred and twenty-five tons of dried apples were put out the past season by the larger of the two driers at Aptos, Santa Cruz county, according to J. J. Verhoff who has 10 acres of apples there, but is planting only pears for the future.

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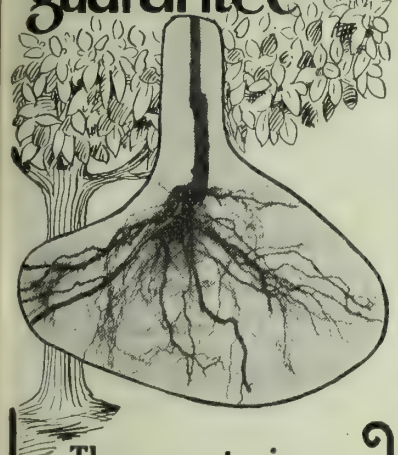
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DEMISE OF DR. E. W. HILGARD.

(Continued from page 57.)

was a labor that he performed faithfully for almost three decades and that resulted in making the California college of agriculture one of the most efficient in the world. He began research work immediately upon his arrival in California and published his first results in 1877—thus constituting the experiment station which he established the oldest in the United States. He remained head of the College of Agriculture and Director of the University experiment stations until his retirement in 1903.

Outside of his university duties, Professor Hilgard found time for a tremendous activity. His work in the direct investigation of soils in connection with their native vegetation, of the influence of climate on the formation of soils and especially of the nature of "alkali soils," a problem hitherto little probed in this country, achieved for him a reputation as wide as the world of science. It brought him recognition on numerous occasions. Mississippi, Columbia and Michigan universities, as well as the University of California, have bestowed the Doctor of Laws degree upon him. The Academy of Sciences of Munich presented him with the Leibig medal for distinguished achievements in the agricultural sciences and the international exposition at Paris, in 1900, gave him a gold medal as a collaborator in the same research.

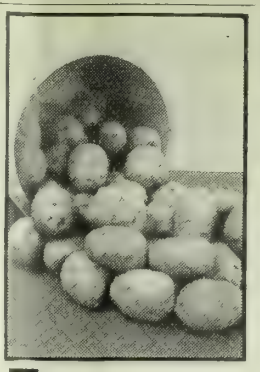
From 1879 to 1883 Professor Hilgard was an agent of the United States census, and his investigation of the cotton crops of the country formed an important portion of the census report. In the latter part of this period he was employed also in charge of the agricultural division of the northern transcontinental survey.

During all of his period of academic activity, Professor Hilgard was almost constantly engaged in the task of authorship. He wrote an extensive report on the geology and agricultural features of the Pacific Slope, a memoir on the rock-salt deposits in Louisiana, a large number of reports of the California Agriculture Experiment Station, and two later books since his retirement from the faculty, "Soils of the Arid and Humid Regions" and "Agriculture for Schools of the Pacific Slope," the latter in collaboration with Professor Osterhout, formerly of the University. To many American and foreign publications and governmental reports he contributed from 1854 to a few years ago.

Since 1910 Professor Hilgard's advanced age has rendered him unequal to the pursuit of extensive tasks. He maintained, however, his membership in several scientific societies and was vitally interested to the last in investigations connected with his science.

Professor Hilgard met with two great bereavements during the active period of his life—the loss of an only son, about twenty-five years ago, and, subsequently, the loss of his wife. He is survived by two daughters, Marie Louise and Alice Hilgard, who have given him great joy and delightful companionship during his declining years—caring for him as perhaps a good father always deserves but does not always receive. Professor Hilgard's home and social life were exceptionally pleasant and inspiring and personally he endeared himself to the whole community, which gave him true love and abundant honor.

Eight cars of lemons and 34 cars of oranges left Riverside last week, the heaviest shipments since the season commenced. This makes a total of 163 cars from that section to date. If weather permits more fruit will be shipped from now on.



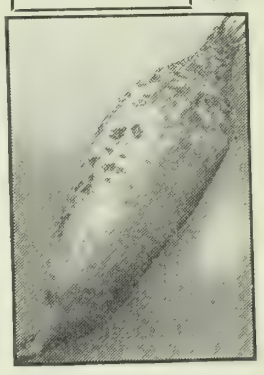
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Uses of Sunflower Seed.

To the Editor: In trying to find out what is done on a large scale with sunflower seeds I was informed by one party that they were used for seed, chicken feed, for oil, but on inquiry at the Pacific Oil and Lead Works, I was told: "We know of no mills in the United States that would be interested in the purchase of sunflower seed." I am still in doubt what the crop is grown for.—R. L., Modesto.

[Our observation is that the crop is usually devoted to home uses and sold for seed to grow more plants to serve more home uses. We doubt if it largely enters into any commercial or manufacturing uses in this country.

Dr. Cardiff, Director of the Experiment Station at Pullman, Wash., gives the following information:

"The sunflower makes excellent silage, especially when mixed with corn and some legume in about equal parts of each. The seed has an unusually high oil and protein content. On account of the latter its growth rapidly exhausts the nitrogen from the soil and, therefore, if grown successively on land, the soil will require considerable fertilizer. The oil portion does not exhaust the soil since the elements from which oil is made come from the air and water.

"The seed is used in the production of oil, which is extracted by compression, and is of value for table use, cooking purposes, and in general the same use as is made of olive oil.

"In Russia the seeds of the larger seeded varieties are sold as peanuts are in this country, and eaten raw. The plant has also been used quite extensively in paper manufacture in some of the European countries.

"The sunflower should be grown upon soil which is suitable for corn and planted and cultivated about the same as corn, though it will stand a little earlier planting than the latter on account of its greater resistance to frost."]

CALIFORNIA LEADS BEET-SEED ENTERPRISE.

Californians who know W. K. Winterhalter as a qualified agricultural expert, especially strong in the science and practice of sugar beet culture, will be interested in the announcement that he is now leading an enterprise which aims to free the United States from dependence upon European sources of sugar beet seed. He has for the last two years been directing experimental cultures in Idaho, which yielded most encouraging results, and now there has been effected a large enterprise called the U. S. Beet Seed Co. operating from Salt Lake City as a business center. The organization of the company is one of the results of a convention of beet sugar manufacturers held last fall in Salt Lake. On account of the European war more or less difficulty has been experienced during the past year in obtaining seed for the sugar beet crop in America. Some American companies have been experimenting in beet seed culture for upward of twenty years, but most with indifferent success. The companies in Utah and Idaho have obtained better results than those of other sections, and during 1915 raised ample seed for the 1916 crop. The experiments have proved that Utah and Idaho are better adapted to beet seed raising than any sections yet tried in America.

If normal conditions obtain at the close of the European conflict, some doubt has been expressed as to whether America can compete with the Germans and Russians in beet seed culture, on account of the low wages paid in foreign countries. But the manufacturers decided that it would be unwise to take chances on an early end to the war, besides they figured that by growing seed in the United States, even at a higher cost, a supply of fresh seed would always be available.

Mr. Winterhalter has put away enough mother beets and stecklinge to produce from 16,000 to 20,000 bags of beet seed in 1916, depending on weather conditions. He expects to leave for Utah and Idaho the middle of February and will spend all summer and fall in Utah and Idaho, devoting his entire time to the development of this new industry.

CURING PEACH LITTLE LEAF

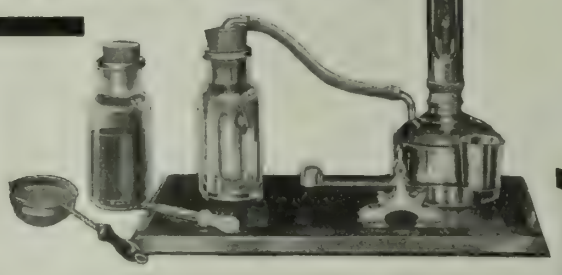
To the Editor: Several of the peach trees in my Muir orchard seem to be dying. The leaves turn a yellow shade, generally on one side of the tree first, and next year make very little growth. The leaves come out in thick clusters and the fruit sets very heavy, but the wood dies back and the disease spreads to other trees. Is it little leaf?—G. A. B., Mountain View.

[Yes, the new growth is practically bare of leaves except clusters near the tips and low down near the junction with the next branch. The leaves that are left are yellowed; sometimes motiled; considerably smaller than natural and somewhat wrinkled. Red spider has nearly the same effect in several cases except that no leaves cling in clusters at the tips.

No cause or treatment is known, though it is suspected to be a matter of malnutrition because it comes mostly on sandy soils poorly supplied with moisture. It is related to orange mottle leaf. F. A. Hogan, Sup't of the Visalia Fruit and Land Company's orchards, found two or three small blocks of peaches aggregating about 5 acres, affected with little leaf so badly five years ago when he took charge, that the company advised him to pull out the trees. In two years they were looking as healthy as any, and there is no trace of little leaf in the orchards now. Though he is said to have a concoction which he applies to the trees, it is the opinion of competent authorities that their recovery was due to drastic root pruning and consequent renewal of the root system, in connection with good cultural methods. He plowed and chopped and subsoiled the old orchards about two feet deep within four feet of the trees on both sides of each row. He hauled out two or three hay-rack loads of roots, many as big as a man's wrist. Rootlets started from the cuts and the trees were rejuvenated.—Editors.]

It is expected that about three or four hundred acres will be planted to almonds in the Oakdale section this year.

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7. Whether a soil is in need of a green manure crop.
8. It will demonstrate the probability as to whether a soil will respond to applications of chemical fertilizers or not.

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Please send me full details regarding the new Ideal Tractor, and illustrated catalog.

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Rice Growing Notes.

[Written for Pacific Rural Press by M. D. Woodruff, Biggs.]

Additional to the article about my field in a recent issue, I would make a few more suggestions about rice, and about the field I grew here last year. It would seem my field was a long time growing and not much ahead of some other fields in earliness of harvesting. On strong sediment land or any land that is too rich, the rice will be later in maturing. Also rice that is thickly sown will be later in maturing. I had a thick stand. Rice on land not previously planted to this crop stools out more than on second or third year land; and will be 10 days later in maturing. Mine was new land.

Now as to the 10 acres sowed March 21, and the 10 acres sowed March 28. This was really the best rice and slightly ahead of the 15 acres sowed Apr. 7, yet the difference was only scarcely noticeable. The weather was cool enough (and most always is at that time of the season) that the first seeding grew but little before the other started to grow nicely, and it was all together, practically, in starting its real growth. There is little advantage to be gained in planting before Apr. 5, but every day counts after that, for Wateribune rice, if the weather is at all favorable for growing.

Growth before Irrigating. — Rice will be much better and make stronger plants all the way through if it is possible to start it and get some growth before irrigating, and the roots will take a hold and make better formation. Owing to the nature of soils, however, there is only a small percentage of the rice land that works easy enough to make a seed bed fit to bring up a perfect stand and hold the moisture very long.

With many, the danger of early planting is this: Rice is a hardy plant, but the seed is easily rotted or destroyed by flooding with cold water and keeping cold and wet too long at germinating time. Also by keeping the plant entirely inundated while it is too small. Rice will stand lots of cool weather without being destroyed after it is, say, two or three inches high, and if it is not inundated.

Frost.—As to frost, I would have little fear. Three years ago I saw a small field bit with frost when the plants were two inches high and it was injured not the least. Two years ago the middle of Nov. I took young tender volunteer plants which were about two inches high and planted them in a box. I kept the box containing these plants well exposed to the frost and the elements. They survived it all and started growing nicely in the spring although we had a number of frosts and several times the ground was crusted with frost in the box. The plants did not grow any during the winter. I would not advise fall planting in the field, however, because other grasses, etc., start their growth so much earlier, that the rice plants would almost be choked out.

REGULATING USE OF WATER.

[Written for Pacific Rural Press.]

"All water passing through power plants should be required to be turned loose at a level determined to be high enough to permit irrigation of land naturally tributary to such water supply," says Engineer A. Griffin of the South San Joaquin and Oakdale Irrigation projects. He holds that power development should be considered secondary to irrigation, though "it is very desirable to make the fullest use of all water possible both for power and irrigation. In many places where water could be used for irrigation in years to come, power interests get control and prevent the irrigation development. There should be a legal way to preserve such water for irrigation, as well as to obtain economic adjustment where power and irrigation interests already conflict.

Legal Duty of Water. — More efficient use of water often means use of more water; in many cases it means the use of less. The most efficient use of water depends on many variable factors such as supply, distance to irrigable land, kinds of crops, crop yields and prices, rainfall, etc., so that "any legislation defining or governing the duty or use of water at this time, if desirable at all, would have to be very broad, merely fixing outside limits" and providing for broad-minded administrators of the law.

SAVES RIVER BANK.

[Written for Pacific Rural Press.]

When the creek or river currrent is eating away your fine alluvial farm land, you want to fight it. Judge R. B. Canfield of Santa Barbara county has a ranch on the Santa Ynez river from which the current washed several acres last winter. The general channel is perhaps half a mile wide, through the sands and silt of which the summer flow has a more or less new channel every year.

Last summer, after the principal current had taken a bite from Mr. Canfield's land, he put in a patent V-shaped "current deflector" which sticks its nose into the river just where high water would hit the bank with considerable force. Though there have at this writing (Jan. 7) been no heavy floods to test the deflector severely, what current there has been was deflected so that it hit the bank farther down stream on the big curve, where another deflector is needed.

Upstream from the deflector, a wide gravel bar has already formed, though the Judge has not noticed what has been built in below. Though Mr. Canfield thinks the price of the deflector rather high, he says its cost is far below its value in saving the good farm land, so far as his experience shows.

At the recent meeting of the California Hop Growers' Association held in San Francisco, it was decided to take up with the brewers the matter of purchasing hops direct from the association instead of through brokers. As a further result of the meeting, an office will be opened in San Francisco in the near future.



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General Agricultural Review.

DECIDUOUS.

Santa Barbara county imported over two carloads of peaches last season.

Prunes come second to almonds in the nursery buying for orchards to be planted about Paso Robles.

A public meeting is to be held at Beaumont, Riverside county, January 15, to discuss apple culture and marketing.

Horticulture commissioners of Washington are reported to be starting a war on vendors of apples which are badly damaged by the San Jose scale.

A meeting of farmers and business men was held at Bangor, Butte county, January 8, for the purpose of discussing the planting and shipping of deciduous fruits.

J. E. Hassler, County Horticultural Commissioner of El Dorado county estimates that there were $62,361.36 worth of pears shipped from that county last year.

New Zealand fruit growers marketed about 150,000 boxes of apples in South America last year. It is estimated that there is a market there for 200,000 boxes a year.

The annual meeting of the stockholders of the Sebastopol Apple Growers' Union will be held at Sebastopol on Feb. 7, at which officers will be elected for the ensuing year.

The Santa Maria Valley district produced last season 42 tons dried apricots, 75 tons prunes, peaches, etc., and 490 bags walnuts, according to Horticultural Inspector R. C. Wylie.

Pear planting will be extensive in Nevada county this year. County Horticultural Commissioner D. F. Norton has already inspected 17,500 trees, of which the major portion were pears.

The Atascadero colony cleared and planted 3500 acres last winter to peaches, pears, apricots, prunes, and apples. They expect to plant about 3,000 acres this spring, according to B. D. Conrad.

Trees from Kansas and other eastern states which have been arriving in various parts of the State are undergoing a close inspection for peach borers, by the horticultural commissioners of the State.

A new course on deciduous fruit insects is announced by the College of Agriculture of the University of California. E. O. Essig, instructor in entomology, will be in charge of the new course which will give special attention to the control of insect pests.

A joint potato and apple conference is to be held at Sebastopol, January 29. W. V. Shear of the U. S. Agricultural Department will be present at the meeting and President Jerome of the Watsonville Apple Distributors' association will speak on the standard apple pack.

F. B. McKevitt has been elected president of the Producers' Fruit company. It is intimated that this company will practically confine its operations to handling fruit on a commission basis in the future. This is also the plan of several other large fruit distributors.

An attempt is being made by Harry Adams, traffic manager of the California Fruit Distributors, to have the freight rate on fruit to southeastern territories reduced to the blanket rate of $1.15 per 100 pounds, which is the prevailing rate to other sections of the country.

Over $300,000 has been subscribed to the California Peach association up to the first of this week and it was thought that the total would reach $350,000 before the meeting at Fresno, on Wednesday of this week. This includes large subscriptions from the banks and business houses in Fresno which have been very generous supporters of the idea. A total of 23 nominees for trustee had been named out of the 25 at the time of this writing, and every effort is being made to select men of ability. From these trustees will be selected the directors of the new organization.

CITRUS FRUITS.

Growers who participated in the Christmas pool of the Colton Orange Growers' association received a little better than two cents a pound for their fruit.

Nearly 2,000 information seekers visited the citrus experimental station at Riverside last year and about 100 lectures were given with large attendances.

The recent wind storms did considerable damage to the unharvested orange crops at Fair Oaks, Sacramento county, knocking large quantities of fruit from the trees to the ground.

The plant of the Levitt Orange Juice company at Riverside which has laid idle since last July will be re-opened and an active campaign started in the manufacture of orange juice products.

J. R. Frisbee of Berkeley purchased a nine-year-old Washington navel orchard at Lindsay from A. R. Wifley last week. The purchase price was $26,000. This is the first purchase of orange property in that vicinity since the beginning of the financial depression.

According to the California Fruit Exchange, oranges sold for the week ending December 25 averaged $.91 a box more than for the corresponding week in 1914. Figures from the same source show that the association received considerable more per box than did their competitors during both years.

OLIVES AND NUTS.

In spite of blight, Santa Barbara county walnuts brought growers $300,000 cash, according to C. W. Beers.

Carpinteria walnuts were unusually free from blight this year, while the most severe damage ever done is reported from Goleta.

The past season, codling moth has injured no walnuts in Santa Barbara county, because the shells had hardened early before the larvae got to them. In 1914 a great many nuts were destroyed.

A representative of the Van Camps Product company has been visiting Sacramento valley olive districts gathering data on olives. Growers in the valley are of the opinion that this concern may be contemplating entering the olive packing field.

A consular report from Seville, Spain, says that as a result of lack of rains last fall, the olives of that section are exceptionally small. Exporters who are also growers converted their own crops into oil and purchased from their neighbors for pressing.

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Simplicity
Pull-Ability
two features of
Reg. U. S. Pat. Offi.
TRACTORS

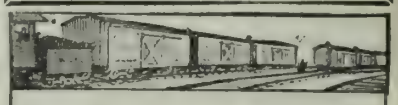
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SIMPLE enough to give regular service without the care of an expert engineer.
POWERFUL enough to do the heavy farm work more economically and better than horses.
WRITE for our newest booklet P. R. 5, describing both Sieve-Grip Tractors—the 4 to 5 horsepull at $675, and the 8 to 10 at $1150 f. o. b. Stockton.
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Stockton, Cal.

Exterminate Squirrels
GOPHERS,
PRAIRIE DOGS, BORERS, ANTS,
RATS, ROOT APHIS, ETC.

USE
Carbon Bisulphide
It is absolutely effective, and leaves no injurious effect if inhaled while handling.
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624 CALIFORNIA STREET.
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Wagner's Giant $ 3.00 per hundred. $15.00 per thousand.
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TREES
Oregon grown trees have earned an enviable reputation in California. Many Inspectors have pronounced them the finest trees that come into their district. We have a limited surplus of the following:
PRUNES—
French on Myrobolan.
French on almond.
Imperial on almond.
Imperial on Myro.
Sugar on peach.
Sugar on almond.
APRICOTS—
Royal on Myro.
PEARS—
Bartlett. Anjou.
Clairgeau and other leading varieties.
These are all our No. 1 grade—strong, thrifty trees, good roots, clean and smooth. No cull trees that we are stuffing off at "bargain prices." Let us know your wants, now. Prompt shipment assured.
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WINTER RHUBARB
Berries and Small Fruit.
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Rhubarb-Berry & Cactus Specialist
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AIR-SLACKED.
HYDRATED LIME.
One Ton Hydrated Lime Equals 2 Tons Gr. Carbonate.
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Monadnock Bldg., San Francisco

Paso Robles people are proud of their almond possibilities. Dr. V. Ward of the Chamber of Commerce has recently compiled figures on acreages of fruits in that section, showing over 2000 acres already planted and over 1000 acres definitely to be planted next spring.

Evaporated olives are the latest thing in the way of eatables to make their appearance in Oroville, and reports from there state that the fruit is of exceptionally fine flavor. It is thought that the new process will take care of the small olive problem, allowing for their disposal in small convenient packages.

The Ehmann Olive company have petitioned the California Ripe Olive association to take steps to prevent the sale of green olives, artificially colored, as California ripe olives. It is claimed that the present lack of market for ripe olives is due entirely to the woody taste which occurs in artificially coloring the fruit.

GRAIN AND FIELD CROPS.

Final steps are about to be taken in Ventura county for the State organization of lima bean growers.

But very slight injury is reported to have been done to the celery crop around Antioch by the recent freeze.

Last year there were approximately 800,000 pounds of green peas shipped from Brawley.

It is estimated that there will be 23,000 cars of celery shipped from the River district this winter.

Over 400 acres of sudan grass are to be planted in the vicinity of Paso Robles this spring.

The Los Angeles Honey Co. of Wheatland recently shipped a carload of honey to the Chicago markets.

According to reliable reports, the past year's bean crop in the Pajaro Valley was five times as large as that of 1914.

The Santa Maria district of Santa Barbara county produced last season 5000 bags onions, 16,000 bags potatoes, 20,000 bags oats, 21,000 bags barley, and 320,000 bags beans.

The grain harvest in the lake bottom lands in Kings county amounted to $9,000,000 the past season; and it is expected that it will reach the $10,000,000 mark this coming year.

E. H. Grubb, a well known potato grower of Colorado, has recently purchased a ranch near Princeton where he will engage in experimenting in improving the seed standard of potatoes.

About 25,000 acres sowed to wheat and barley in District No. 108, Colusa county, is said to be entirely under water as a result of the recent storms. The loss is estimated at $100,000.

The Lompoc district produced last season 2000 bags barley, 5000 bags potatoes, 7000 bags mustard, 20,000 bags oats, 30,000 bags onions, and 250,000 bags beans, according to R. C. Wylie.

The Sperry Flour Company of Stockton has purchased the wheat on exhibition in the Australian Building at the Panama-Pacific Exposition with the intention of experimenting with it on San Joaquin county land.

GRAPES AND SMALL FRUITS.

The Langford ranch northwest of Lodi shipped 40 carloads of table grapes East last season which netted them 59 cents a box f. o. b. cars.

Reports from various sections of San Joaquin county indicate considerable damage caused to the young grape vines by jack rabbits.

J. A. Chapdelain of Lodi netted $30,000 from 80 acres of Tokays this season. The perfect fall weather made it possible to pack almost every bunch.

The Woodbridge Fruit Company of San Joaquin county shipped 300 crates of Mission grapes to Austin, Texas, last season, which netted them $1.00 a crate. Mr. Mills states that he couldn't do that well every season, the prices being unusual on account of the scarcity of black grapes this year.

MISCELLANEOUS.

Directors of the South San Joaquin Irrigation District have sold $50,000 worth of irrigation bonds to the State at 83½c on the dollar.

Co-operation in Marketing will be the subject of a new course in the University of California to be given by Elwood Mead, professor of rural institutions.

The farm bureau of Ventura county is undertaking solution of storm water troubles in the steep-sided valleys, by organizing storm drainage districts.

At a recent meeting of the Farmington center of the San Joaquin County Farm Bureau, the plan of holding a Community Fair at that place was discussed.

The famous "Big Five" ranch of Lovelock Valley, Nev., consisting of thousands of acres of the richest and most productive land in Nevada, is being subdivided and sold at an average price of $100 an acre.

The work of compiling a classification of the soils of the San Joaquin Valley from a point north of Tracy has been stopped for the winter months; and the National and State experts in charge of the work have gone to Los Angeles county to do work of the same character

A STORY *of* GROWTH

DEPOSITS

Jan. 1, 1912 . . . $ 563,943.54
Jan. 1, 1913 . . . 1,446,001.68
Jan. 1, 1914 . . . 2,023,147.66
Jan. 1, 1915 . . . 3,175,548.77
Jan. 1, 1916 . 3,924,161.21

Write for 5% Booklet, Banking by Mail.



STATEMENT *of* CONDITION *January 1, 1916*

RESOURCES

Cash on hand and due from banks	$ 580,971.15
United States and other Bonds	537,121.94
Loans and Discounts	3,149,329.75
Banking House and Safe Dep't Vaults	33,973.79
Other Real Estate	9,400.00
Furniture and Fixtures	27,364.63
	$4,338,161.26

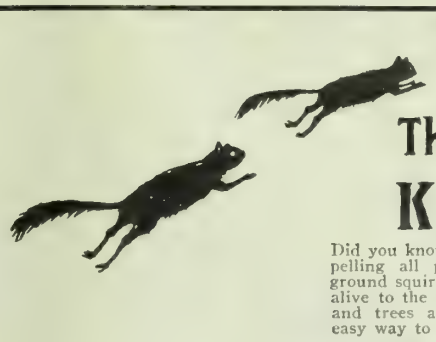
LIABILITIES

Capital, paid in gold coin	$ 350,000.00
Surplus	9,000.00
Undivided Profits	55,000.05
Deposits	3,924,161.21
	$4,338,161.26

WE PAY *5% Compound Interest* on Term Savings Accts.
Lowest Rent for banking rooms
Highest Interest consistent with safe banking

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The Law says KILL 'EM

Did you know there's a California law compelling all persons to rid their land of ground squirrels? But law or no law, you're alive to the damage these pests do to crops and trees and land. You want a cheap, easy way to fight them.

KILMOL
SQUIRLGOPHENE
Will Kill 'Em All

It is simple, sure, quick and practical. Saturate a waste ball in Kilmol, place it in burrow and after 3 or 4 minutes ignite. The deadly fumes remain in the burrow for hours—the rodent can't escape. 100 per cent efficient. Results guaranteed or money refunded. Used by Government, State and County officials. **Get Kilmol from your dealer.** Also waste balls—better and cheaper than home-made. Also ask him about new U. S. Government formula of poisoned barley. Write for interesting information about squirrel and gopher eradication.



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We can supply almost any quantity of these in all the best varieties as well as nearly every other sort of fruit or ornamental trees or plants that you may wish to set out. We are recognized headquarters for Walnuts, Olives, and Citrus stock. Do not fail to get our quotations before placing your order.

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If you live in Southern California, our representatives, Roeding & Wood Nursery Company, 1617 E. Washington St., Los Angeles, will take care of your orders promptly and in good order.

Mechanical Power on the Farm.

[Written for Pacific Rural Press.]

TRACTOR TERMS.

With the coming of tractors and other kinds of gas-propelled vehicles has come a new set of technical names which users are often at a loss to clearly understand. The following are just a few of them explained in a simple manner: The amount of power delivered to the belt pulley of the tractor which can be used for stationary work is sometimes called "belt power."

Draw-bar Horsepower D. B. H. P.)—The horsepower exerted by the tractor at the draw-bar. With good traction conditions, this is usually rated at about one-half of the B. H. P., though many tractors will seldom develop this much.

Horse-equivalent Horsepower (H. E. H. P.)—The number of good, average farm horses that the tractor will replace for hauling of any sort. Theoretically this should be the same as the D. B. H. P., but actual experience has shown that the technical figuring which gives the draw-bar rating often exceeds what the tractor will actually do in comparison with farm horses.

You will have noticed that the customary method of describing the rating of a tractor is, for example, "8-16"—8 D. B. H. P. and 16 B. H. P.

Internal Combustion Engines.—As the name indicates, the fuel in the form of a vapor or gas burns and expands (or explodes) within the cylinder and there forms a high pressure and rotates the crank. The combustion of this vapor is usually accomplished by means of an electric spark.

Internal combustion engines can be divided into three classes—gas, gasoline (distillate, kerosene and naphtha) and oil.

Motor—The mechanism that generates power — cylinders, pistons crank, etc. This does not include the transmission gears, frame, etc.

Tractor — A substantial, slow-speed, motor-driven machine built exclusively for hauling heavy loads in the fields or on the roads. Tractors do two general classes of work: 1—operate belt-driven machinery; 2—draw field implements and haul.

Horsepower—The power required to lift 33,000 pounds one foot in one minute. There are four kinds of horsepower ratings:

1—Indicated Horsepower (I. H. P.) — The absolute horsepower developed in the cylinder and registered on the indicator instrument before friction of the bearings, etc., has used up any part of it.

AMERICAN WATER POWER.

The national forests contain approximately half of the water power of the West. The department for nearly a decade has been issuing permits for its development. Unfortunately, the present law does not authorize the granting of permits for fixed periods. It should be amended, and recommendations to this end have been made repeatedly by the department.

While authority to grant term permits undoubtedly would aid water-power utilization, the fact remains that development, practically to the extent of the market, actually is now taking place on the forests.

In the Western States power development has advanced proportionately very much more rapidly than in the East, where land is privately owned. The amount of water power used in the generation of electricity by public utilities corporations, street railway companies, and municipalities has in the last decade increased 440 per cent in he West, or more than twice as fast as in the remainder of the country. There, in proportion to population, four and one-half times as much water power is used as in the remainder of the United States, and nearly three times as much as in the Eastern States.

Of the existing 1,800,000 water horsepower in the Western States, 50 per cent is in plants constructed in whole or in part on the forests and operated under permit from the department. Plants under construction will develop about 200,000 additional horsepower, while over 1,000,000 more is under permit for future construction. The chief obstacle to further immediate water-power expansion is the lack of market, for plants in operation in the West now have a surplus of power of which they can not dispose.—From annual report of U. S. Secretary of Agriculture.

LUBRICANT FOR WORN GAS ENGINES.

[Written for Pacific Rural Press by Chas. Barnum.]

A very good and most reliable lubricant for old and worn gasoline engines can generally be found on the average farm. This is Castor machine oil, usually termed "yard oil" because it strings out in an oozy fashion.

This oil costs 40 to 50 cents per gallon, and a quart of it will generally last as long as 3 of the ordinary brands of gas engine oil.

It can be used straight or mixed with various proportions of other oil, according to the thickness required. This oil is especially good for old engines whose pistons and rings are so badly worn as to cause great loss of compression. It puts in a snappy clear bark and adds about 25 per cent more to the horsepower on worn machines. It does not foul the plugs and if bearings are washed out occasionally to rid the gum, no bad effects are encountered.

The writer made this little discovery this summer while crossing hot deserts with an air-cooled engine. He never had an over-heated engine.

SPRAYS TREES BEFORE PLANTING.

Nursery trees awaiting planting should be set in trenches and the roots covered tightly with moist dirt. So situated, they are handy to spray for whatever insects, fungi, or scales may have escaped inspection. Lime-sulphur will be better than any other one spray.

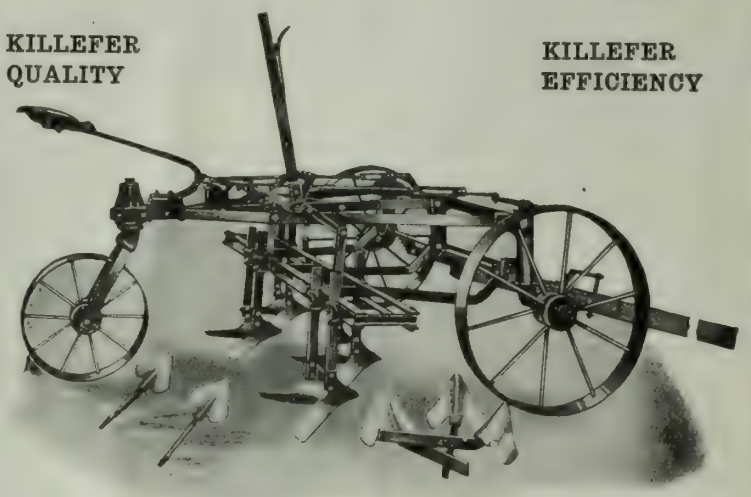
If the trees are not handled for a day or two after spraying, whatever is rubbed off in planting will not materially affect results, which it is claimed are obtained within 24 hours of spraying.

On the Cory ranch in San Joaquin county two men sprayed 6,000 trees in 15 minutes with 20 gallons of mixture, using a Bean Power sprayer and a Jumbo nozzle.

Beet Cultivator (K)

KILLEFER QUALITY

KILLEFER EFFICIENCY



The frame of this Cultivator is made of one continuous piece of high carbon steel with a truss connecting it to the main castings, supporting the two steering wheels. This construction makes a cultivator that is almost impossible to break down in the center and in consequence the wheels are always in line and under easy control.

The lower frame or tooth bar is from the same quality of steel with a strong arm at each end, which connects with the lifting rod, allowing no chance for the frame to dip or run deeper at the ends. The seat is set back far enough to give an unobstructed view of the rows. The foot control of the front wheels is adjustable with a turnbuckle for taking up wear, and is very easy on the operator. A lock is provided for the rear wheels that holds it rigidly in line except on the turns. This is the strongest and best made Beet Cultivator for sale on the Pacific Coast.

The Killefer Manufacturing Co.

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THE WINSBY PUMP

Our New 1915 Type Pump



Best Model for Low Lift Pumping

Size	1 in.	1¼ in.	1½ in.	2 in.	F. O. B. Cars
Price	$16.00	$20.00	$25.00	$30.00	Oakland

Largest Sizes at Proportionate Prices.

Complete Pumping Plants of Any Size or Type Furnished and Installed.

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Mining, Milling, Concentrating and Rock Crushing Machinery.
Ice Refrigerating Machinery, Cold Storage, Rooms and Counters.
Water Wheels, Dredgers and Hydraulic Machinery,
Fire Hydrants and Cast Iron Fittings.

WE CARRY IN STOCK

Pipe	Belting	Pulleys	Shafting	Boilers
Casing	Leather	Wood	Hangers	Steam
Valves	Rubber	Steel	Collars	Engines
and	and	and	and	and
Fittings	Canvas	Cast Iron	Boxes	Supplies

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P For Every Purpose NEW Threads & Couplings. Hot Asphaltum I Second Hand and NEW P Screw Casings Fittings and Valves Guaranteed for Pressure E

Pacific Pipe Co.

Main and Howard Streets. San Francisco, Calif.

MAGNETO.

If your motor is not working right don't jump at conclusions—don't take the magneto apart. Disconnect high tension wires from spark plugs and hold the terminal not more than one-fourth of an inch from the plug. Turn the engine over and watch to see if there is a spark. If there is a spark, it is evident the cause of the trouble is in the spark plug. (See article under Spark Plugs.)

If there is no spark, it is necessary to inspect the wiring very carefully. Start at the batteries and look for loose connections, and short circuits. Inspect the insulation closely, as sometimes the insulation gets worn off from friction, so that the bare wire is touching the motor or frame, causing short circuit. Ninety-nine per cent of the ignition troubles with the magneto will be caused by defective wires, poor connections, or defective spark plugs, for these magnetos are built very strong and durable and should outwear your motor. If you have any ignition trouble that you cannot correct yourself, take the matter up direct with the magneto manufacturer.

Caution.—When testing for spark with high tension wire removed from plug, do not hold it more than one-fourth of an inch from the plug. Under no circumstances should the wire be three or four inches from the plug when the circuit is on, and the motor turning over. This practice is hard on the coil.

SPARK PLUGS.

It is very important that the spark gap between the points at the inner end of the plug is the right distance. (Where Kingston magneto is used the opening should be sufficient to permit a ten-cent piece to just slide in.) (Where Sevison magneto is used the opening should be such that a ten-cent piece cannot enter without forcing points apart). If the porcelain in the plug becomes coated with carbon, which is a conductor of electricity, the electric current will follow the carbon and not jump the gap between the points. Defective porcelains are deceiving to the eye; plug placed on top of the cylinder and connected up electrically may spark alright to the gap, but when screwed in the cylinder and under compression the current will leak through the defective porcelain and not jump the gap. The reason for this is that air is an insulator and when a cylinder has 60 pounds cold air compression there is five atmospheres squeezed in one and would be five times as hard for the electric current to jump the gap as it would in open air. Electricity always follows the line of least resistance, so if the porcelain of the spark plug is coated with carbon or is defective, the electric current will not jump the gap and produce a spark.

ENGINE WITHOUT BATTERIES.

A subscriber at Gilroy writes us about batteryless engines as follows:

"T. P. I. of Sebastopol does not state what size engine he wants in last issue. I have been using a three H. P. engine for three years without batteries."

"It is an Ideal engine, with make and break ignition and a Hercules magneto with coil in magneto."

"This engine is used in spraying, runs corn sheller, pumps water, and runs prune grader, and has given no trouble."

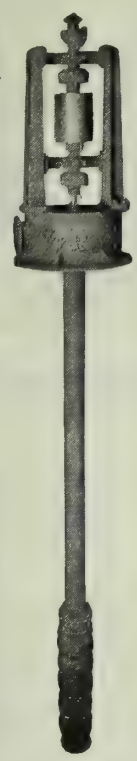
"I have two other engines of different make, one 2½ H. P. on spray outfit, with batteries, magneto and jump spark ignition. In use three years."

"This engine has given a good deal of trouble. Both these engines have same ignition system, and have given trouble where the batteryless has not. I am going to try this magneto on a 11 H. P. engine next summer without batteries."

CARBURETOR.

Do not screw the needle valve down onto its seat with pliers. If you do you may roughen up the seat and cause an uneven supply of gas—you can do this with your fingers.

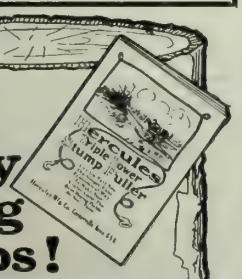
No Pit
is required with the
Krogh Deep Well Turbine Pumps



For bored or drilled wells from 10 inch inside diameter up; and for capacities of 250 to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.

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Make Money Pulling Stumps!



Add new, rich, crop growing land to your own farm by clearing it of stumps. Clear your neighbors' land. Your Hercules will be kept busy when others see what it does. Big profits for you. With the

Hercules All-Steel Triple Power Stump Pullers

you can clear an acre a day. The *known* and *proved* stump puller all over the civilized world—easiest to operate,—most durable. Special introductory price, 30 days' trial offer, 3 years' guarantee, on immediate orders. Write for big Free book of land clearing facts.

Ask about Hand-Power Puller
Low price. 120,000 lbs pull.

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RED SIDE WALL AND BLACK TREAD
THE TRADE MARK OF
Firestone
NON SKID
TIRES

Second Hand PIPE Screw Casing
ALEXANDER PIPE COMPANY
OFFICE—250 North Point Street, San Francisco, Cal.—WORKS

A Worth-While Corn Crop.

[Written for Pacific Rural Press.]

Four years ago C. L. Jessup of Stanislaus county found that Indian corn planted in sandy soil previously seeded to alfalfa, made enormous yields of silage to the acre and for the next three years he grew enough of it on two acres of such land to fill his 44 ton stave silo.

In the spring of 1915 he had about 11 acres of old alfalfa that needed plowing up, so decided to plant it to corn, cutting what he needed of it for his silo and harvesting the rest for grain. He plowed good and deep in February and kept harrowing it down till the last week in March, at which time the soil was in fine condition for planting.

Seeding was done with a one horse planter, White Hickory King seed being used, planted about two feet apart in rows three feet apart. After planting he harrowed the field twice to kill weeds and after it was up he cultivated once with a one horse cultivator, and kept the larger weeds out by hoeing.

In the parts of the field where the suckers were worst he pulled them off but in other places he did not pay any attention to them. He found though that the suckers were worst where the hills were farthest apart

Along in the fall the stalks seemed to be drying up unduly fast, so a part of the field was irrigated, but when the grain was harvested it was found that the unirrigated land had by far the largest crop of ears. Damage done by the corn worm was overcome by the blackbirds who picked the worms out of the end of the ears before they had time to seriously damage the corn.

The poorest part of the field was cut green and siloed, and in October the grain crop was harvested. After shelling there were 400 sacks averaging 121 pounds each in weight, which was sold for $1.50 a hundred.

Besides the crop of grain and silage, the stalks and the pie melons which covered the field furnished 18 head of dairy cattle and two horses with feed for two months.

While Mr. Jessup has made no attempt to breed up his corn through the most careful kind of selection he has always chosen his seed from the best of the grain and this year he expects to make a test with Eastern and Western grown seed to see whether acclimation is of importance.

WALNUT GROWERS ISSUE STATEMENT.

California harvested a banner walnut crop last year and the California Walnut Growers' Association were so successful in the marketing field that there was but two per cent of the total crop in the State the first of January. Such is the information given out by Secretary C. Thorpe at Los Angeles.

He states that the comparatively low prices which walnuts have sold at this year have undoubtedly stimulated consumption and that it is his opinion that the supply of the association's Diamond Brand will be completely exhausted early in the spring. Under less favorable conditions last year the last cars shipped by the association sold at 17½ and 18 cents.

While it has been almost impossible for the association to secure accurate European reports the past season on account of the war, one of their salaried agents in France, California's largest competitor in nuts, had this to say: "Nearly all of this year's walnut crop (in the shell) is now either sold for interior consumption, for the army principally, or for shipment to America. Since my last cables some five hundred tons more have been or are in course of shipment to the States, but of this quantity a large proportion are in Marseilles awaiting steamer opportunity. It is thus unlikely that any considerable tonnage will arrive in America in time for the Christmas trade. I estimate that not more than 500 to 600 bags of 100 pounds remain for sale at the present time. Of small lots for cracking there are still sufficient stocks available, although my estimates on this year's crop—1500 tons— may prove to be slightly overstated, as in some districts the rendering in meat is small. I should state in this respect that the 1915 crops have turned deceptive. While fine in outside appearance and fairly uniform in size, the meat in general is not fully developed and in many instances the percentage of shriveled and bad nuts is as high as 20 per cent and even more. This is thought to be due to the prolonged dry season in late summer and autumn as when I sampled them in July they were very promising."

It is interesting to note that the importations of walnuts in the shell have been many times lighter during the months of October, November and December this year than for many previous seasons past.

To show the growing demand for package goods the association reports that they have sold over 3,000,000 packages of their Diamond Brand the past year, although this is the first year that they have offered their nuts to the trade in that way.

PEACH ASSOCIATION FORMED.

Dispatches from Fresno state that the peach growers' association was formally organized Wednesday with subscriptions of growers amounting to $350,000. This and contracts for the first year's crop make the estimated assets of the new concern valued at approximately $600,000. It was commonly believed at Fresno after the meeting that the new association will be as great a success as the raisin association.

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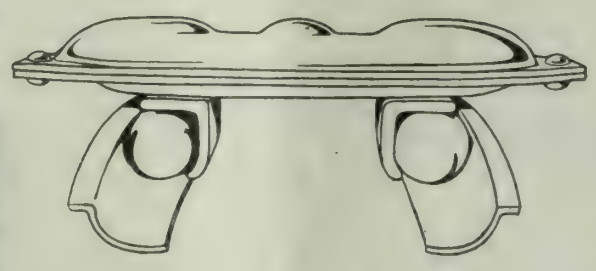
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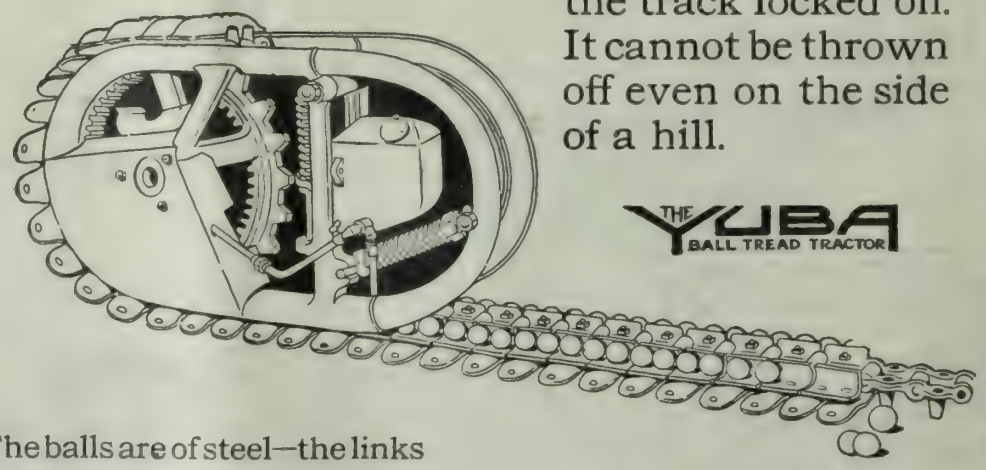


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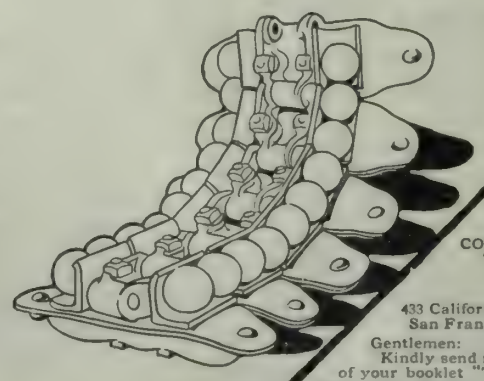


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Kindly send me a copy of your booklet "The Yuba Ball Tread Tractor"

Name.....
State.....Size of Farm.....acres
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Four Years' Work With Grades.

Right breeding, right feeding, and weighing and testing of milk bring herd average to 423.9 pounds of fat yearly.

While leaders in the dairy movement may sometimes become discouraged at the apparent lack of interest manifested by dairymen toward improving their conditions through the scales and the Babcock tester, demonstrations like the following sent us by C. A. W. Carver, of Los Angeles, indicate that surprising results are being attained by some toward more profitable dairy practices.

He writes: "Your issue of December 11 contains a very interesting account of a dairy herd in Humboldt county. Such demonstrations are of great value to the dairy industry of the State, as what one practical dairyman can do others can do also.

"Four years ago we began developing a dairy herd at Artesia, in Los Angeles county, following the plan of keeping an accurate record of the production of every cow, breeding only to the best registered bulls, raising all heifer calves, discarding every cow that does not come up to a certain minimum standard of production, and feeding a balanced ration adjusted to the producing capacity of each individual cow. The results have been more than gratifying.

"We have just completed the 1915 year's record of each cow, and give below a true and correct showing of the herd of 60 cows, the lowest one of which in fat production is far above the average of Mr. Trigg's herd, and they are all grades except one, which is a registered Guernsey.

"We would be glad to know if this record can be equaled by any other herd of grade cows of any breed in the State.

"While this appears to be a fine record, yet we expect to keep right on along the line on which we are now working, and believe we will soon have a much larger herd, all of which will exceed a minimum requirement of 400 lbs. of fat per cow each year. When that is attained the average of the herd, of course, will be much higher."

BREED	Age	Months in Milk	Lbs. Fat
Dur.-Jer.	8	11	562.2
Jersey	10	12	544.6
Holstein	5	11	535.5
"	8	11	535.5
"	7	10	508.5
Jersey	10	11	181.1
Guernsey	5	11	479.5
Holstein	6	11	475.8
"	6	12	474.0
"	5	12	466.9
"	6	11	466.2
Guernsey ...	4	11	461.2
Durham	9	11	457.4
Holstein	6	11	455.7
Guernsey	4	10	452.4
Jer. Hol.	12	11	449.9
Holstein	6	11	445.4
Jersey	10	12	444.2
Holstein	3	11	440.2
Jersey	10	11	439.1
Holstein	4	11	433.6
"	10	11	433.2
"	9	11	430.8
Guernsey ...	5	12	428.8
"	5	11	427.7
Holstein	6	11	425.2
"	5	11	420.9
Jersey	11	11	420.4
Holstein	7	11	416.7
"	4	11	415.9
"	8	11	415.3
"	5	11	413.3
"	7	11	403.4
"	8	9	407.1
Jersey	6	11	401.5
"	2	11	394.8
"	4	11	415.9
"	8	11	415.3
"	5	11	413.3
"	8	9	407.1
Jersey	13	11	403.7
Holstein	6	11	402.9
Guernsey ...	4	11	401.6
Jersey	6	11	401.5
"	2	11	394.8
Holstein	4	11	394.1
"	10	11	392.1
"	9	11	387.6
"	2	11	386.2
Jersey	9	10	386.0
Holstein	3	11	384.1
Holstein	9	12	382.3
Jersey	11	11	382.3
"	3	11	382.0
"	4	11	381.9
Holstein	9	11	381.5
"	6	12	381.5
"	5	11	377.9
Guernsey	2	11	376.2
Holstein	4	11	376.2
Jersey	5	12	373.8
Holstein	4	11	371.3
Guernsey ...	4	12	370.5
"	4	12	370.5
"	5	11	366.5
Holstein	5	12	366.2
TOTAL FAT.....			25,434.2
Average Per Cow.....			423.9

WANTS BETTER GOATS.

To the Editor: I would like to know where the Angora goat, originally from Asia Minor, can be bought. It is kept in Switzerland to a great extent. Its mohair reaches to the ground and women's hair goods are made from the best specimens. Is it to be found anywhere in America? Do you suppose that the so-called thoroughbred Angoras that we see here in California are this kind degenerated. I have seen Angora and Kashmir goats with white heavy fleeces 12 and 18 inches long and wouldn't mind having a few like that if they were to be had in this country. The Angoras we have so far hustle in the brush the greater part of the year, require very little shelter and care, and each goat gets about as much grain as the average hen.—M. S., Lassen county.

[The reason that you do not see more Angora goats of your description is that importations from Asia Minor have been very limited, the Turks zealously guarding against exportations in order to gain a monopoly of the mohair business. Restrictions have also been placed on shipments of livestock from Asiatic countries by the United States government to safeguard against contagious diseases. The American type is different from that of Turkey because the original imports were small and delicate, and these were crossed on the common goat to obtain a larger and hardier animal. Although the length and quality of the mohair has suffered somewhat from this crossing, it has produced a goat better suited to our climatic conditions.

Where the finest fleeces are found in Turkey each farmer possesses 20 or 30 head, to which he devotes his entire time, many times living under the same roof with them. Of course the average Californian does not want to take such measures. By selection and proper mating, however, it is possible to work a wonderful improvement in both the length and quality of mohair on native stock.—Editors.]

The U. S. Dept. Agr. averages losses from livestock diseases in U. S. for 30 years at $5,000,000 on account of hog cholera; Texas fever and cattle ticks $40,000,000; tuberculosis $25,000,000; contagious abortion $20,000,000; blackleg $6,000,000; anthrax $1,500,000; scabies of sheep and cattle $4,600,000: glanders $5,000,000; parasites $5,000,000; poultry diseases, $8,750,000; other livestock diseases $22,000,000.

D. W. Wallis, cattle superintendent for the firm of Miller and Lux, has resigned his position. Mr. Wallis was superintendent for that company for about 15 years.

LAYNE & BOWLER PUMPS WIN AGAIN

Layne & Bowler Corporation Gets Largest Single Order Ever Placed in the West---Phoned from Denver---Shipped to Tennessee by Fast Express



IN preference to all other pumps, Layne & Bowler Pumps were chosen by the American Zinc Company of Denver to clear the company's big zinc mines in Tennessee of water. This is the largest order that has ever been placed with a western pumping concern and calls for the immediate delivery of five huge turbine centrifugal deep well pumps, capable of raising 10,000 gallons of water per minute. The big order was placed by long distance telephone from Denver and is being shipped across the continent by Wells Fargo Express, three special baggage cars being used.

The engineers for the American Zinc Company chose Layne & Bowler Pumps because a dependable pumping system is absolutely necessary to dewater the mines. A breakdown might mean thousands of dollars' loss. This great zinc company could have purchased pumps in the east and saved an express bill of $13,000 and perhaps several days' time, but they knew that only Layne & Bowler Pumps could do the work quickly, efficiently and inexpensively. Layne & Bowler Pumps, made in Los Angeles, are highly recommended by the world's leading hydraulic engineers. Western ranchers invariably select these pumps.

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More and Better Hogs in California.

[Written for Pacific Rural Press.]

ALFALFA FOR HOG PASTURE.

While some breeders feed alfalfa hay to hogs, they all admit a great waste. The waste makes good bedding but rather expensive. L. F. Killenbeck of Orland has noted that hay is a better form than to cut it and feed green in pens because the pigs eat so much at once that they cloy on it and don't like it afterward. Henry Webb of Madera has brood sows in a big barn in which the pigs play about in the hay, keeping clean and cool. C. E. Barrows of Los Molinos notes that they waste 2-3 of alfalfa hay, but eat all of it if chopped and softened with steam or water, mixed with a little mill feed.

Best Fed as Pasture.—Alfalfa pasture is the great way to feed this forage. The hundreds of breeders who do this with no damage to the alfalfa, prove the practicability of this plan. As a rule, they fence off several fields and change hogs from one to the other before damage is done. L. D. Collins of Denair has 60 sows and shoats on 5 acres fenced into six yards. G. A. Smith of Corcoran has 80 acres in half a dozen fields, for several bunches of hogs. Seventy-five brood sows kept a trifle too fat on 20 acres of alfalfa and 60 acres of grain stubble from June to September and later. Joe Carrico of Orland had 67 head of shoats and old stock on 20 acres and had to mow it in order to keep it tender so they would eat it. L. W. Barnhart of Turlock, with seven gilts and their half-grown litters eating sweet potatoes, had to mow the 4-acre pasture frequently to prevent the alfalfa becoming too old and tough. Mr. Tweed of Willows is sowing 180 acres alfalfa in order to go into hogs heavily next year; he has over 200 head now.

Two sows and six half grown pigs forage happily on a half acre for A. L. Stephenson of Los Molinos, being shut up 24 hours at each irrigation. E. B. Chase of Orland has two sows and nine pigs from one of them in a panel pen 10x15 feet. This is moved up one side of an alfalfa check 30 feet wide and 100 yards long and back along the other side, by which time the alfalfa is ready for another round. He irrigates every two weeks in summer, leaving the hogs in the water. A platform would obviate this objection, which is not serious because the soil drains well and requires only three hours to run the water through.

REPORT OF COW TESTING ASS'N.

[Written for Pacific Rural Press.]

One of the best indications of the improvement in grade cows in the State is the continued high monthly reports of the various county cow testing associations.

S. F. Bonner, secretary of the Gridley Cow Testing Association, sends us the records of cows in that association which made over 40 pounds of butterfat for the month ending December 31st.

Mr. Bonner informs us that the cow standing third in the above list has produced 10,622 pounds of milk containing 362.2 pounds of fat in six months and 11 days, which is surely a mark worth working forward to.

Breed	Pounds of Milk.	Per cent of fat.	Pounds of fat.
Holstein	1280	4.5	62.10
Holstein	1095	4.7	51.46
Holstein	1709	4.0	48.36
Durham	1020	4.6	46.92
Durham	971	4.3	40.89
Holstein	1230	3.6	44.28
Durham	1240	3.3	40.92

ARE DRAFT HORSES SAFE?

To the Editor: I have bought two shares in an imported Percheron stallion and have a chance to buy a home-raised Percheron mare that is registered for $600. The mare weighs 1950 pounds and the stallion 2,000. Can you tell me whether horses are going to be good property for some time to come, or do you think that the truck is going to do away with them?—R. E. H., Manteca.

[If this mare is sound and a sure breeder we should say, buy her, that is if she is a comparatively young animal. We take it that you contemplate purchasing her for foundation purposes, and if this be true we would advise you to pay more attention to the above points than to weight, as it is just possible that she is carrying more flesh than is desirable for breeding animals. Of course no one can tell at this distance whether she is worth the money or not. If you are not familiar enough with horses to find defective parts, get a good horse man or veterinarian to give his opinion.

It is now generally conceded that the truck is here to stay, but we believe there will be many uses for the heavy horse, in city and country, for a great many years, which will continue to make their raising profitable, and especially practicable, to the farmer breeder.—Editors.]

RAISING THE RUNT PIG.

In commenting on his method of raising runt pigs successfully, O. G. Marlsbary, of Parlier, Fresno county, writes: "I breed two sows as near the same day as I can. I put them in the same pen together several days before farrowing time. After the pigs are born they will mix together and the sows can't tell their own from the other's. In a few days the strong pigs will throw the weak ones out and they soon show their weakness. Then I take the sow that had the smallest litter and put her in a pen by herself and give her the weak ones, and if there are still too many with the other, one or two strong pigs can be put with the former sow and in a very short time there will be no runts; in fact in 10 days you can't tell the runts from the others."

W. H. Rough of Riverside county is reported to be considering the moving of his purebred herd of Poland Chinas to Kings county in the near future.

D. L. Henley of Lemoore reports Duroc-Jersey hogs as follows: One boar to Chas. H. Benner, Parlier; one boar to E. E. Brown, Lemoore, and one gilt to E. L. Hotchkiss of Lemoore.

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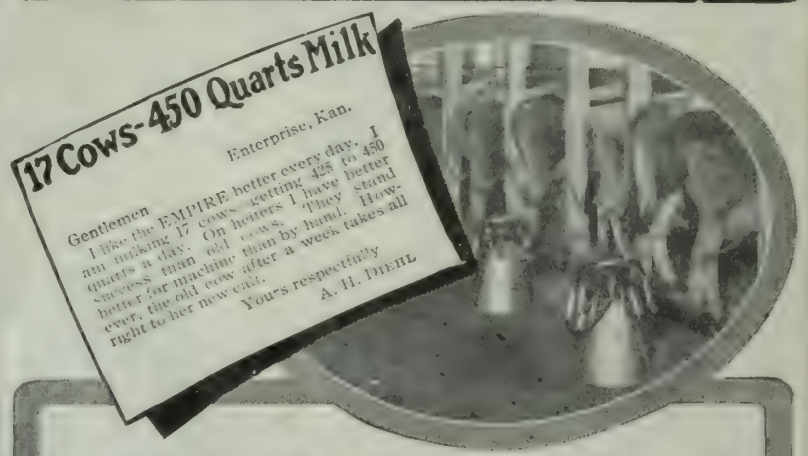


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THEY HAVE GRAND CHAMPIONS BEHIND THEM.

Draft Horse Future Bright.

Writing to this office, Wayne Dinsmore has this to say of the horse outlook: "1916 ushers in what promises to be one of the most favorable seasons horse breeders have ever faced. Draft horse producers have especial reason to feel optimistic. The marked improvement in the industrial world has brought transportation facilities again into active service and all transportation agencies — railroads, motors, and teams—are being used more freely than for two years past. Draft geldings have been in good demand at higher prices, and the farm demand for useful draft mares is already so strong that horse dealers are being eliminated as buyers of good draft mares.

"Purebred draft horses are also in keen demand. The elimination of imports since August 1914 have resulted in a marked stimulus to horse breeding in this coutnry, and more satisfactory prices have been paid to the breeders and raisers of good American bred draft colts than at any time in our past history.

"The total number of horses on farms, April 1st, 1910, was 19,833,-113 head, and the Government estimates for Jan. 1st, 1915 credited this country with 21,195,000 head,—an increase of 6.86 per cent over 1910.

"From these and other statistics we gather that after replacing the stallions which are annually retired from the breeding ranks and replacing the grade stallions which are now in use with purebred animals, we actually need around 7,000 good draft sires annually to fill the services of horses dropping out of service.

"During the fiscal years of the various draft horse record associations ending in 1915, approximately 12,000 American bred draft horses were recorded. This includes both sexes and all ages of Percherons, Clydesdales, Belgians, Shires, French Draft and Suffolks. Less than half of these were stallions so that we are producing annually now, less than 6,000 draft stallions. It is recognized by all horsemen that at least one-fifth of the stallions that are recorded are not good enough to be of any real service in improving the draft horse stock of the country. It therefore follows that we are really producing less than five thousand good pure-bred draft sires annually, when we need at least 7,000 per year, at the lowest calculation.

"Good blood and liberal feeding will pay better in draft horses than in any other class of stock, always providing that a man buys no more mares than he needs in his farm operations, and exercises good management—essential to success in any line."

THE MANTECA DAIRY.

[Written for Pacific Rural Press.]

There have been many large purebred establishments started in California in recent years, but few where the foundations have been more prominently or wisely laid than on the old Henderson ranch, now known as the Manteca Dairy Farm, 35 miles south of Sacramento near the little town of Kennefick.

The Henderson family have farmed the 600 acres contained in the ranch since 1850, practicing the usual early day practice of raising wheat and barley till those crops became unprofitable.

In more recent years the Henderson family decided that dairying was more constructive and accordingly the old buildings were torn down and modern milking barns, silos, implement sheds and calf nursery erected, with the aim of making the plant one of the finest in the State. Irrigation water was developed by the sinking of wells over the ranch and the installation of pumping plants. The water in these wells rises to about 20 feet from the surface and power is furnished by a large porable gasoline engine.

Holstein cattle, hogs and chickens were decided upon as the most promising combination for the new undertaking and no expense has been spared in starting the purebred Holstein herd, which is to be of first importance, on the highest possible level.

This is best shown by the quality of the three herd sires which have been purchased. The senior sire of the herd is King Pontiac Segis Inka, a son of the bull King of the Pontiacs, who has 161 A. R. O. daughters, leading all other sires in A. R. O. daughters and the first sire to have a two-year-old daughter to produce one thousand pounds of butter in a year, also the sire of the only 44 pound cow and Segis Inka 3rd, a two-year-old world record heifer from De Kol 2nd's Butter Boy 3rd, who has 118 A. R. O. daughters and more A. R. sons, who have had more 30-pound daughters than any other sires of this breed, and Segis Inka, the good old cow that made King Segis famous.

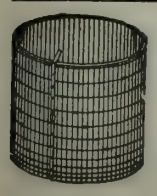
The junior bull of the herd will be King Pontiac Wayne Segis, a half brother of King Segis Pontiac Alcartra, the $50,000 bull, and King Segis Pontiac Chicago who at three months of age sold for $20,000. He is a son of King Segis Pontiac who has more sons at the head of important herds than any other bull in the United States. His dam is Elsie Veema Wayne, a thirty-pound daughter of Sir Veeman Hengerveld, a sire who has a greater per cent of thirty-pound daughters than any other bull of the breed. This young sire is a great acquisition to the State of California.

A third young sire in this herd is King Lillian Walker Segis, a son of the King of the Black and Whites, and Lillian Walker 2nd. His blood traces back to Colantha Johanna Lad, a sire attracting much attention through his high testing daughters, and King Segis, the best bull of the breed. This young bull's nearest fifteen dams average over thirty pounds of butter fat a week and the thirty nearest dams average over twenty-seven pounds per week.

The company has purchased some A. R. O. daughters of the King of the Pontiacs, King of the Black and Whites, King Lyons, King Walker and many other sires of equal importance. It has also several thirty-pound cows and expects to have many more in the near future. They have also bought several families headed by thirty-pound dams.

All the members of the family take a lot of interest in the place and all the milkers and herdsmen co-operate with the company in their efforts toward a high standard in dairy husbandry.

J. B. McKindly of Acampo is gradually replacing his grade cows with registered Holsteins.



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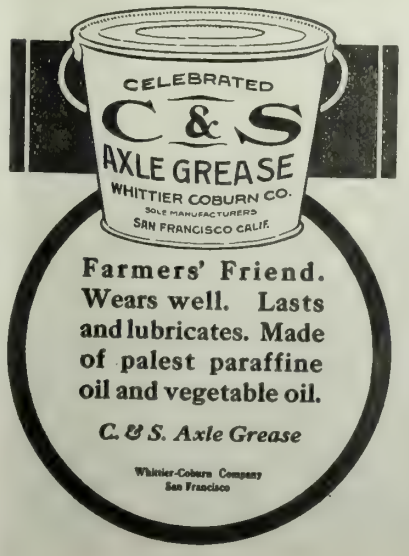
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PURE BRED HOGS

under the auspices of the
California Swine Breeders' Association
will be held at the
State Fair Grounds
SACRAMENTO, JANUARY 27, 1916

100 head of pure-bred hogs of various breeds will be sold. These represent the TOPS of some of the best herds to be found in California. All hogs sold will be registered and be GUARANTEED BREEDERS by the consignors.

Catalogue ready about January 12th, and may be secured of

J. L. THATCHER, Riverside, Cal. **OR** **J. I. THOMPSON,** Davis, Cal.



Farmers' Friend. Wears well. Lasts and lubricates. Made of palest paraffine oil and vegetable oil.

C. & S. Axle Grease

Whittier-Coburn Company
San Francisco

A Rainy Day Need Not Be Dull



Cheer up! Get to work in a FISH BRAND

Reflex Slicker
$3.00

Strong, easy fitting, light, and *waterproof, absolutely.*

Reflex Edges stop water from running in at the front.

Black, Yellow or Olive-khaki.
Protector Hat, 75 cents
Satisfaction Guaranteed
A. J. TOWER CO.
815 BOSTON

TOWER'S FISH BRAND

With the Live Stock Men.

DAIRYING.

Over 900 cows have been signed up for a cow testing association which is being proposed in Merced county.

Buyers from Los Angeles are reported to have shipped 200 head of heifers, mostly Holsteins, from Tulare county last week.

Twenty-seven head of Holstein bulls were sold at auction at El Centro, Imperial county, this month, which brought an average of $208.88 apiece.

A. H. Pozzi of Monterey county has purchased the half interest of his brother A. Pozzi. This is one of the largest cheese making concerns in the Salinas valley.

The Oakdale creamery has just completed the installation of new machinery which will enable them to increase their output from 1400 pounds to a ton a day.

The supervisors of Imperial county announce that they are going to purchase several purebred dairy bulls in order to promote the livestock raising industry of that county.

The erection of a cheese factory at Salida, Stanislaus county, now seems assured. W. S. Carpenter of Fresno will build the factory, which will not be a large one to start with.

The California Central Creamery are preparing to ship two carloads of butter from their plant at Eureka, at an early date, to fill a part of their government contract, recently awarded them.

A purebred Holstein, Ruby Kathleen Aaggie Robles, owned by the Santa Ysabel ranch at San Luis Obispo, gave over three gallons of milk for two years and as much as six gallons when she was fresh.

San Francisco and Los Angeles capital has been enlisted to increase the capital stock of the Imperial Valley Creamery company which will enable the concern to expand, especially in the marketing of their butter.

The Holstein breeders of Arizona have formed an organization to be known as the Arizona Holstein-Friesian association. A meeting will be held at Phoenix, January 19, to perfect the organization and elect officers.

Because the Nevada-California-Oregon railroad cannot afford to furnish refrigerator cars to him, H. C. Watson, creamery owner at several points in Lassen county, will hereafter ship his butter to California points by parcels post.

Estimates made by the Wells Fargo Express agent at Newman, Stanislaus county, are that the cream shipments from that town the past year have increased at least 10 per cent. The average for 1915 was about 300 cans daily.

M. H. Tichenor and H. S. Fleishhacker are reported to have leased 600 acres of the Stanford land at Palo Alto and will establish a herd of registered Holsteins on the property at once. They will build a modern dairy barn having a capacity of 300 head.

The Central Forest company are to become active in the Holstein breeding game at their ranch in Glenn county, if present plans carry. They purchased 22 head of Holsteins of the Carnation Stock Farms and expect to enlarge both their dairy and hog herds.

Representatives of the University of Nevada and several State veterinarians are looking over dairy cattle in different States with a view of buying a herd of 50 registered dairy cattle for the State prison at Carson City. The State has appropriated $10,000 for the purpose.

The N. H. Locke company report the following monthly records for cows in their herd: Gertie's Fox Alene, 56.1 pounds of fat; Fern's Norma, 47.2 pounds fat; Dereen's Lassie of L., 65.2 pounds fat; Lady of Lockeford's Midget, 61.6 pounds fat; Fox's Powers, 54 pounds fat.

The Santa Ysabel dairy of San Luis Obispo has recently sold two carloads of grade Holsteins. P. A Welty, who has charge, has found the best producers by a year of tri monthly milk weighing of three days at a time and monthly fat tests They have 10 cows out of one of Aralia De Kol's sons.

H. R. Thisen of Lodi has just completed the erection of a 250 ton silo and expects to build a modern dairy barn soon with a capacity of two strings of cows. He will breed purebred Guernseys and Holsteins and will be equipped to either sell whole milk, make cheese or sell his butterfat to the creamery.

Oregon "wet goods" consumers will turn from their usual beverages to buttermilk, now that the State law has put a ban on booze dispensers, according to prominent creamery men of that State, who claim that the creameries are having a bigger demand for buttermilk than they can supply.

Stanislaus county still holds the State butter production record for counties, according to the annual report of Secretary Andreason of the State Dairy Bureau. During the year 1915 that county produced 9,973,320 pounds, or a gain of almost one and three quarter million pounds over the production of 1914 in that county. Imperial county again holds second place with 6,334,316 pounds, a gain of 624,029 pounds over 1914. Humboldt county gained 339,983 pounds during the year, producing a total of 5,591,870 pounds. A more complete report of this will appear in next week's issue.

SWINE.

Two carloads of hogs were shipped from Tulare county to San Francisco one day last week.

The final shipments of hogs from Potter Valley, Mendocino county, were made early this month. The total shipments from there this year exceeded expectations.

J. E. Thorpe of Stockton has just received from C. Wallace of Weisner, Nebraska, a choice Duroc-Jersey sow pig, which will be used in strengthening his herd.

Biddle and Russell of Hanford shipped eight cars of hogs to San Francisco last week, making a total of 34 cars for the season that they have shipped to Los Angeles and San Francisco markets.

The Laughlin ranch near Windsor, Sonoma county, has been purchased by H. R. Sander of San Francisco who expects to engage in the breeding of registered Berkshires on an extensive scale. J. E. Hall is to have charge of the herd, which will contain 100 brood sows.

An experiment is being carried on at the Spreckels ranch in the Salinas valley with beet pulp for hog feeding. The experiment has not been conducted long enough to prove definite results, but is being watched with considerable interest in view of the increasing amounts of pulp which are available in that section.

BEEF CATTLE.

The January meeting of the Napa County Livestock Ass'n was held at St. Helena on Jan. 8.

The State Board of Health appointed E. Ross and Dr. R. A. Peers as delegates to the Interstate Conference on Rabies to be held in Winnemucca, Nev., on Jan. 11.

The Cuyama ranch in San Luis Obispo county is to be stocked with Arizona cattle recently brought for the purpose by Supt. E. W. Black of the Santa Margarita Ranch.

The Secretary of Agriculture has authorized the grazing of 30,550 cattle and horses, 2300 swine, and 99 sheep and goats in the Sequoia National Forest for the grazing season of 1916.

The famous Shorthorn bull, "Champion of Scotland," recently purchased by the Paicines ranch, Paicines, from Dan R. Hanna of Ohio, is now en route to its new owners.

G. W. Maxon and J. Carty of Los Angeles have leased the Wheeler ranch near Tulare. The ranch consists of 1500 acres, 220 being in alfalfa and the rest used for grazing purposes.

D. M. McLemore of Merced county purchased 524 head of cows and heifers and over 20 bulls in the Klamath Falls section of Oregon last week and shipped them to Merced county where they will be used for breeding purposes on a large acreage of the old Chowchilla ranch.

R. M. Dunlap, who is well known in California beef cattle circles, through past association with some of the most prominent purebred herds in the State, has gone into the livestock commission business with H. L. Murphy of Sacramento county. Mr. Dunlap has just returned from the East, where he made heavy purchases of registered cattle as follows:

One carload of Shorthorn bull calves for Parrot Inv. Co., Chico; 10 Shorthorn cows and a $600 bull for W. H. Hammond, who is establishing a purebred herd and erecting modern buildings on his 2000-acre farm near Chico.; a carload of bulls to Russ Bros., Ferndale, and other smaller orders.

Mr. Dunlap states that good bulls are scarce and high in the East, particularly Herefords, and that he is advising customers to purchase bull calves to hold over till next year, when he thinks values will be much higher. He will make another trip east shortly to fill orders now on hand, this time to Kansas City and adjacent points.

HORSES.

A new intestinal parasite of the horse has been discovered by Irwin C. Schumacher, a recent graduate of the University of California.

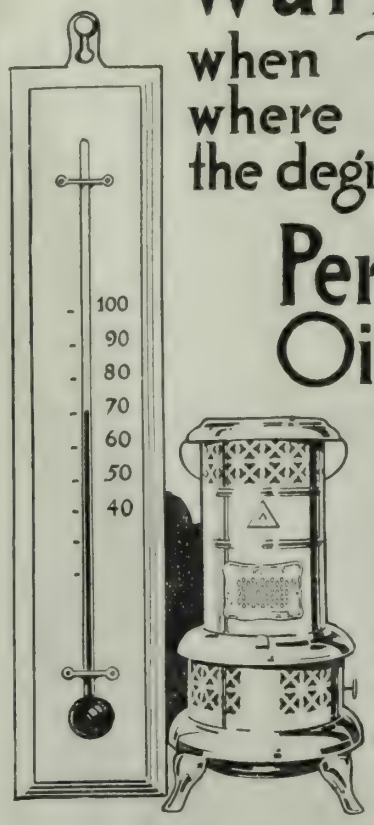
Wm. Casey and A. G. Almstead of San Lucas have recently purchased from Ruby & Bowers, Davis, a fine Percheron stallion, "Ingrat."

It is stated that the allies have purchased 195,000 horses from the National Stock Yards at East St. Louis, Ill., at a cost of $34,000,000. The British buyers have discontinued their purchases at that point.

SHEEP.

A report from Marysville states that a rise in the waters of Dry





creek caused the drowning recently of 1300 sheep belonging to Andy Robson.

Practically all the hay in Surprise Valley, Modoc county, has been purchased by the sheepmen of Lake county, Oregon, who are feeding their flocks in that section this winter.

Sixteen sheep owners living north of Cloverdale and in southern Mendocino county have in the last 12 months paid out themselves $1,500 in bounties and other protection against coyotes.

SILAGE FOR SHEEP, HORSES AND MULES.

Moldy or extremely sour corn silage is a dangerous feed for sheep. Eleven ewes were lost in an experiment at the Missouri Expt. Sta., one week from accidentally feeding moldy silage. A ration of corn silage, clover hay, and grain proved to be the most efficient means of utilizing silage.

Ten yearling mules, weighing approximately 650 lbs. each, were fed for 90 days an average daily ration of 6.5 lbs. of ear corn, 8.6 lbs. of mixed hay, and 4 lbs. of corn silage. The mules made a gain of only 4.8 lbs. during the period. No ill results were seen from the use of the silage, but the mules did not consume large quantities of it. This it is thought may have been due to the fact that the silage was made from rather immature corn.

Successful experiments in feeding silage to horses and mules, conducted at the North Carolina and Pennsylvania stations, show that corn silage should always be fed in combination with other feeds, and that under no circumstances should spoiled silage, either moldy or rotten, be fed to horses and mules.

A LIQUID CATTLE BRAND.

A simple and apparently humane method of branding dairy cows, so that they may be more easily identified in weighing and testing their milk, is to paint the number on their hips with potassium hydroxide. The liquid can be applied with a small brush, and like other caustic, burns its way slowly through the hair and hide, leaving a brand that is easily distinguishable, until the hair from the sides grows over it. If the brush is a small one it sometimes requires a second burning in about two months to make the scar permanent.

Mr. A. B. Goodwin, of Manteca, San Joaquin county, has branded his entire herd in this manner and states that the cows do not seem to suffer from the treatment and that the burns soon heal over.

The San Francisco Wholesale Dairy Produce Exchange has issued a report regarding receipts of butter, eggs and cheese received in San Francisco during the calendar year of 1915. It is stated that 18,887,317 dozen eggs were received; the yearly average price on fresh extras was 31.21 cents and on pullets 26.79 cents per dozen.

LIVESTOCK DIRECTORY.

DAIRY CATTLE.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

FRANK MEACHAM, Petaluma, California.—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Purebred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa. Cal.

SUNNYBROOK RANCH, Willits, Cal.—Breeders Registered Holstein stock. Young bulls for sale sired by Ruby Gem Cavary Lad. Prices reasonable.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

REGISTERED HOLSTEINS—A ten-month-old bull, $125, one five months for $100, and bull and heifer twins for $100. K. W. Abbott, Milpitas, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs butter as two-year-olds. A. A. Jenkins, Tulare.

THREE-YEAR-OLD registered Holstein bull, "Prince Fayne Concordia," for sale. Write for price, pedigree and photographs. H. E. Wilson, Princeton, Cal

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

TWO REGISTERED HOLSTEIN BULLS out of A. R. O. dams. Sired by King Mead. Ready for service. J. H. Harlan Co., Woodland, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class, thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

TWO REGISTERED HOLSTEIN BULLS old enough for service. Very light in color. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEIN BULLS — Serviceable age. From finest strains. Panama-Pacific Dairy. Sutter Creek, Cal.

HOLSTEIN-FRIESIAN CATTLE and Berkshire Hogs. H. B. Goecken, Breeder, Goecken Heights, Livermore, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

BREEDERS OF A. R. O. Holstein Freisian cattle exclusively. Dirk Dairy Farm, Lemoore.

CREAM CUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

PALENDALE HERD of Registered Holsteins. Young bulls for sale. J. A. Pelanda, Modesto, Cal.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

REGISTERED JERSEY BULLS from register of merit cows. D. F. Conant, R. "B," Modesto.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls from tested cows for sale.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Son, Chino, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guerneseys, Santa Cruz, Cal.

BREEDER of Registered Holstein Cattle. Ernest Otto McClure, R. 2, Modesto, Cal.

BREEDER OF REGISTERED HOLSTEINS—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd. D. & H. Rowles, Modesto.

JERSEY BULL—8 months old. A bargain. O. J. Ames, Oakdale, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

BEEF CATTLE

EIGHT BULLS AND EIGHT HEIFERS—All pure-bred Shorthorn beef stock over 18 months old. Near Tulare, Cal. $175 each for the lot. Macomber, 1741 Bushnell Place, Berkeley, Cal.

WANTED—7 coming two-year-old, unregistered, red shorthorn bulls and one registered Valley Farm & Stock Co., 149 New Montgomery St., San Francisco.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Palcines Ranch Co., 320 Sharon Bldg., San Francisco, or H. J. Macomber, Palcines, Cal.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON-NEWMAN CO., Breeders of registered Herefords. Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

FAIR OAKS RANCH, Willits, Cal.—Registered yearling Shorthorn bulls for sale. Sired by Landseer 379318, grandson of imported Villager 235884.

HEREFORD BULLS—H. H. Gable, Diamond G. Ranch, Esparto, Cal.

HORSES AND MULES.

FOR SALE—Large-boned, purebred mammoth Jacks. Best of breeding. Prices and terms reasonable. Satisfaction guaranteed. J. A. Dickinson, Fresno, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

SWINE.

BIG TYPE POLAND CHINAS—One to a carload. Any age, either sex. 600 on hand. They have plenty of size, extra good hams and shoulders, strong arched backs, great length, depth and thickness of body, with good looks as well. Many are sired by IOWA WONDER, a 1000-pounder in show condition. I believe his pigs are the best in California. Visitors say they are the best they have ever seen. He sires the kind that grow faster and larger, have more, better and stronger pigs, and are more practical and profitable—the kind that are highly satisfactory Extra special prices on account of being overstocked. I have hogs galore. Prices will surprise you. Satisfaction guaranteed. Write Geo. A. Smith, Corcoran, Cal.

BILLIKEN HERD of registered O. I. C. Swine. Pigs of both sexes from March, April, May and June farrows. Four sires used: Chief Again, Iowa Boy, Missouri Lad and Woodview Earl. All the dams are the smooth, big type. A few bred sows to offer. Everything is cholera immune. Write for prices and catalogue. C. B. Cunningham, Mills, Sacramento County, Cal.

REGISTERED DUROC-JERSEYS—Prize-winning stock from Iowa, Nebraska and Wisconsin. 75 head—bred sows and gilts. Also weanlings in groups of from one to five and boar unrelated of Crimson Wonder, Golden Model, Advancer, Golden Hero, Orion, Chief and Colonel blood. Price $10 and up. Haden Smith, Route 1, Box 97A, Woodland, Cal.

RANCHO RUBIUS HERD DUROCS—Won 1st under six months, Junior Champion, Reserve Grand Champion, Champion Sow bred by Exhibitor, 2nd Sow under 2 years, and two other premiums, all on four entries at P. P. I. E. A few service boars and weanling pigs for sale. Elmer Lamb, Ceres, Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

LARGE TYPE POLAND CHINA HOGS—Superba: 26 times first, 4 times Grand Champion. I have 3 young boars for sale, sired by Superba, and out of a richly bred, prolific sow. Prices right. Hale L. Marsh, Route "A," Modesto.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

REGISTERED DUROCS of all ages. Gilts bred to Crimson Monarch 2nd, prize winner at 'Frisco, son of the world's Grand Champion Crimson Elizabeth. J. M. De Vilbiss, Duroc Farm, Patterson, Cal.

FANCY BELTED PURE BRED BELTED HAMPSHIRE BOARS AND SOWS—Good, sound young breeding stock; registered. Write for prices. Ben F. Thorpe, Mgr., C. A. Canfield Ranches, Bonsall, Cal.

REGISTERED PUREBRED BERKSHIRE PIGS — Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

DUROC JERSEYS—Offering stock from sire of Junior Champion Boar at Panama-Pacific. Also sows bread to Junior Chapion. J. K. Fraser, R. D., Denair, Cal.

POLAND CHINAS—Some July farrowed pigs, both sexes, now ready for sale. Will register, if desired. C. L. Vanschoiack & Sons, P. O. Box 752, Chico, Cal.

BLATCHFORD'S PIG MEAL weans easily and safely; no trouble; no milk. Write for free folder, "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Price and description on application. R. J. Merrill & Son, Morgan Hill.

DEL DAYO FARM—(Old Haggin Bottom Ranch)—Breeders of Registered Berkshires, both sexes for sale. P. O. Box 1140, Sacramento, Cal.

LAKESIDE STOCK FARM POLAND CHINAS are money makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

REGISTERED BERKSHIRE weanling pigs, both sexes. $10 each. Money back guarantee. J. M. Bomberger, Modesto, Cal.

PLAINFIELD STOCK FARM—Registered Berkshires and Durocs. Young stock for sale, both sexes. H. M. Bullard, Woodland, Cal.

PURE-BRED DUROC JERSEYS—7 months old boar and weanlings, both sexes. Geo. N. Martin, Route 2, Box 120A, Turlock, Cal.

REGISTERED BERKSHIRES—For sale bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

POLAND-CHINAS — While the advertisement is short the hogs are long—of the big-boned type. C. A. Cooley, Durham, Cal.

REGISTERED DUROC-JERSEYS—Blue-ribbon stock. 8 gilts and one boar 9 months old. $20 each. H. E. Tong, Route 2, Modesto.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H Croley Co., Inc., 631-637 Brannan St., San Francisco.

BLUE RIBBON HERD OF DUROC JERSEY HOGS—With 125 head of choice gilts and boars sold in year of 1915, I am going to sell 150 head in 1916. They sell because they are choice, and people are given a Square Deal on good ones. I have no $10 and $15 kind. I don't have to auction them off. John P. Daggs for prices, Modesto, Cal.

GLENVIEW POLAND-CHINAS—Baby Pigs from best families for sale. From $15 up. Chas. R. Hanna, R. 3, Riverside, Cal.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the State. $20 up. M. Bassett, Hanford.

REGISTERED DUROC JERSEYS from choice Eastern sows. Spring boars and gilts. S. S. Southworth, Napa, Cal.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

ROSS' DUROCS—A tip-top lot of weaned pigs. Also 27 bred sows and gilts. R. J. Ross, Route A, Modesto.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED HAMPSHIRES—Winners at P. P. I. E. Stock of all ages. W. T. Gatton, Box 231, Gardena, Cal.

PURE-BRED BERKSHIRES—Stock of all ages. Brae Bourne Ranch, Route 3, Box 172, Santa Rosa, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

FOR SALE—Duroc pedigreed boars, April farrow. Reasonable. Chas. C. Perkins, Perkins, Cal.

REGISTERED BERKSHIRES—Boars and Gilts 6 months old. W. M. Mikesell, Manteca.

REGISTERED POLAND-CHINA HOGS—Cholera immune. W. D. Trewhitt, Hanford.

REGISTERED BERKSHIRES—Young boars for sale. Alexander and Kellogg, Suisun, Cal.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED BERKSHIRES — Prize-winning stock. Sunnyside Stock Farm, Perkins, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Padoras Ranch, El Cajon, Cal. M. S. Allen, Manager.

REGISTERED POLAND-CHINAS—Large and medium type. Prize-winners. W. A. Young, Lodi, Cal.

REGISTERED BERKSHIRES—Big-boned. Cholera immune. Riccomi Bros., Mountain View.

REGISTERED BERKSHIRES—Weanling pigs, $10 each. G. A. Casey, R. 7, San Jose.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED BERKSHIRES—All ages. Choicely bred. U. Hartman, Ripon, Cal.

REGISTERED POLAND-CHINAS—Bred sows. Roy J. Turner, Trowbridge, Cal.

DUROC-JERSEYS—Registered boars and gilts. John Decker & Sons, Turlock.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

READAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED BERKSHIRE PIGS—Write or call. Greenwood Ranch, Brentwood, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

FAIR OAKS RANCH, WILLITS, CAL.—Registered Duroc and Berkshire Swine.

REGISTERED DUROCS—Service boars. Small pigs. H. E. Boudier & Son, Napa.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Lakeport, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

SHEEP.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers, Shropshires.

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28.9 lb. Holstein Bull 14 Months Old $500

His Dam, Korndyke Ormsby 2nd, as a 5-year-old, made in 7 days 28.91 lbs. butter fat, test 4.26. His Dam's Dam, Korndyke Ormsby Hengerveld, has a 26.74-lb. record and three A. R. O. daughters. In his sire he combined the blood of Creamelle Vale, second only in milk production to Tilly Alcartra, official record 1155.85 lbs. of butter from 29,591.7 lbs. milk, and the great sires Dutchland Sir Peiterje Hengerveld, who has 15 A. R. O. daughters; Pieterje Hengerveld Count De Kol with 49 A. R. O. daughters and Pontiac Butter Boy, one of the real great sires of the breed.

The Bull is a dandy, straight, nicely marked, being half white. He is just what you are looking for and is worth twice what I am asking.

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Descriptive catalog upon request.
J. L. Gish, Laws, Inyo County, Cal.

Veterinary Queries and Replies.

[Answered by Dr. H. B. Wintringham, Petaluma.]

Correspondents desiring a reply by mail should send money order for $1.00. No charge is made when questions are answered through this department.

WARTS ON TEATS.

To the Editor: I have a young cow that has small long warts on her teats. Sometimes they bleed, making it annoying to milk her. What should I do?—W. S. L., Fresno.

Paint the warts with a 3 per cent solution of Chromic Acid, twice daily till they disappear.

PERIOD OF HEAT.

To the Editor: Is there any way of telling when a cow will come in heat? Some tell me the 9th to 25th of each month. I have a cow that had her second calf September 17. I believe she was in heat about November 5, but she hasn't shown any signs since. Can you tell me when she will come in again?—J. E. B., Fresno.

The period of heat or oestrum in the cow is every 18 to 21 days.

RHEUMATISM AND GARGET.

To the Editor: What can I give to a cow that has rheumatism in hind quarters? She is hardly able to move after resting. Also how can a slight case of garget be cured? —A. J. G., Princeton.

Give this cow one dram each of Sodium Salicylate and Hexamethylamine dissolved in water, three times a day. For garget use potassium iodide in dram doses, three times a day, in water.

CATTLE LOSE EYES.

To the Editor: I have three yearlings that have gone blind in the left eye, the eye-ball turning blue. They have been out on pasture for several months. Do you know of any cattle disease that would turn them blind in this manner?—J. I. S., Los Gatos.

There is a disease called epizootic keratitis which would leave the eyes as you describe them. However, this condition would infect the whole herd. Very probably these animals got foxtails in their eyes.

INFECTIOUS DYSENTERY.

To the Editor: Some of my calves die when about a month old. Considerable clotted blood passes from the rectum, the duct is watery, dark and bloody. They eat considerable but not with much satisfaction, and have a high fever. I feed eight pounds skim milk with middlings and alfalfa hay. They usually die in eight to ten days after taking sick. What is the cause and treatment?—S. R., Modesto.

This is infectious dysentery. Give the following every hour for five hours, then every two to three hours as needed: Tincture of Capsicum 10 drops, Compound Tincture of Gambir ½ oz., and one 30 grain tablet Sulpho-Carbolates. If calf is very weak give a wine glass of brandy.

LOST QUARTER.

To the Editor: We have a cow that has lost a quarter. When she freshened about three weeks ago we attempted to regain the quarter by the use of a milk tube. We drained the teat three times and removed the tube, but the opening closed up each time and we had to make a new one. We finally decided to leave the tube in, but she lost it in four days. The quarter is now badly swollen and sore. She eats well and gives about half the amount of milk she did before we commenced doctoring the teat. What treatment would you suggest?—E. H. S., Delevan.

Get a teat plug of the self retaining type and leave in between milkings until opening heals and remains open of itself. Be sure to boil the plug each time before re-inserting.

COMPACTION.

To the Editor: we are having considerable trouble with our cows. The local veterinarian called it compaction of the stomach. He prescribed Epsom salts and linseed oil, but the cows refused to eat and continued to be droopy, finally getting over the spell in about three weeks but almost going dry. We feed alfalfa hay, beet pulp and bran, twice daily. We have had two such cases in four weeks. What should we do? —C. S. D., Grass Valley.

The following treatment for impaction is the most successful one the writer has used. Withhold all feed from the cow until she begins to chew her cud. This may take 4 or 5 days, or even longer. Don't let them have even small amounts of feed, but all the water they want. Give ½-dram doses of fluid extract Nux Vomica every four hours and one dram of Salol three times a day during this period. When they start chewing their cud again, give one quart raw linseed oil and bring them back to full feed gradually.

FISTULA.

To the Editor: In your issue of December 25, under Veterinary Queries and Replies, A. M. V., Nevada, asks for a cure for fistula of the withers. Your veterinary says "the knife and only that." Now I have no desire to quarrel with the doctor, but for the benefit of your subscriber I beg to say that there is a cure. If he will write Flemming Bros., Chemists, Union Stock Yards, he will get the medicine that does cure most cases of fistula. It is a proprietary article and may not be ethical in a professional sense, but it will cure a man's horse.—J. A. Romine, Kings county.

If the writer were a strictly ethical man he would in all probability not be trying to alleviate disease through the columns of a paper, but as ethics are almost unheard of, to the writer's regret, in the veterinary profession, he does not feel that he is transgressing in giving to the readers of this paper the best that he knows as a veterinarian. The writer, however, does not believe in patent medicines. There are many formulas that are used for the cure of fistula, but none of them are infallible and the experience of veterinarians as a whole indicates that operative treatment in this condition is the only method which will give a radical cure in the most economical way. To the writer it seems more sane to lay an animal up for a maximum of two months and get a cure than to use some preparation for periods varying up to a year and finally wind up where the start was made. It is a fact that in a small percentage of cases drugs alone will do the work, but had the knife been used in these cases a cure would have been accomplished in a much shorter time.

STATE SWINEBREEDERS' SALE.

We are advised by J. I. Thompson, secretary of the California Swine Breeders' association, that there have been 111 head of hogs consigned for the auction sale which is to be held by the association at Sacramento January 27. Included in the offering will be Berkshires, Poland Chinas, Duroc Jerseys, Chester Whites, Hampshires and Yorkshires. A banquet will be held the night before the sale at the Travelers' Hotel in Sacramento, which should be well attended.

NOTICE!



Wishing to devote my whole time to other business, I have decided to sell out my

Shire Stallions at Cost

in order to dispose of them quickly. Included are the stallions which have been at the head of my stud for the last two seasons. All are sound and good stock horses.

I can also spare one pair of "in foal" mares and three stallion foals.

If you are in the market, do not miss this opportunity.

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A Ranch Devoted to Purebreds.

[Written for Pacific Rural Press.]

In many ways the livestock operations on the Hopland Stock Farm in Mendocino county are unique in character and large in scope.

In the first place all of the various purebred undertakings were preceded by experience with grades and, like the time-worn expression, "the proof of the pudding has been in the eating." Outside of all ambition ot maintain the finest livestock breeding establishment in the West on his Hopland ranch, A. W. Foster and his sons have been brought into the breeding fraternity largely through practical demonstrations of the worth of purebred sires in their own operations.

For years Mr. Foster's Hopland ranch was used primarily as a race horse breeding farm, but today all energies are expended in developing herds, flocks and studs made up of Shorthorn cattle, Berkshire swine, Shropshire sheep, Holstein cattle, Hungarian ponies and poultry. In all fairness to the other branches, with the possible exception of poultry and hogs, the Shorthorn herd is of commanding importance because it naturally presents desirable opportunities for development.

Started some seven years ago on what is known as the Lakeview ranch, located in Marin county, the present herds comprise about 100 head. A great deal of care was exercised in purchasing the foundation cows, and the result of that care together with intelligent selection of herd sires since has had much to do with the present excellence of the young stock.

From this Lakeview foundation was secured a large number of heifers, sired by the bull Tule King, a son of the well known bull King Edward. These heifers were taken to the Hopland ranch to act as the nucleus of the present herd there, being bred at first to the bull Music Master, a bull of remarkable breeding, now dead. At present the herd sire is Right Choice, a fine individual sired by the bull Choice Goods.

The policy is to keep all of the female offspring for enlargement of the herd at Hopland, intending eventually to have the entire herd at that place.

In line with this program the ranch has been equipped with suitable feed sheds, barns and silos. Several hundred acres of this ranch is bottom and the balance hill grazing land. Part of the bottom land has been seeded to alfalfa while the rest is partly farmed and partly used for pasture, furnishing winter grazing for the cattle, which is supplemented with chopped alfalfa hay and alfalfa silage.

There are five silos on the ranch, only one of which is filled with corn, the others being filled with first cutting alfalfa. During the winter the cattle are housed at night, but are out in the fields during the day. For summer pasture the hills are utilized, they being well fenced and cross fenced, providing an abundance of natural grasses.

As we inferred at the beginning, the purebred herd of Shorthorns is the outgrowth of former operations with grade cattle on the Lakeview ranch. For a great many years the cattle on that ranch were bred up by the use of purebred Shorthorn bulls, and as a result of that continuous breeding two-year-old steers were turned off last year averaging 1069 pounds each. While it is true that this was accomplished on exceptionally good Italian rye grass pastures, seeded 20 years ago, no grain or other concentrates were fed, and Mr. Foster believes that these results are the best form of arguments for the purebred sire.

WHERE ARE STOCK YARDS?

To the Editor: Are there stock yards at any of the markets in this State, where I can ship stock at any time, like the Kansas City and Chicago markets? Are there stock buyers and commission men, and if so, will you give me their addresses? Which is the best market place in this State?—H. G. N.. Dinuba.

[There are stock yards both in Los Angeles and San Francisco, but not in the sense you mean. The railroad companies maintain stock yards at San Francisco, in which stock can be held and feed purchased, but we would not advise you to do so. The only market where this condition does not exist on this coast is at Portland, Oregon, where a company known as the Portland Union Livestock Company maintains stock yards such as the ones maintained in Kansas City and Chicago. These yards provide for farmers sending their stock direct to market, where they are purchased at the highest bid made by the various packers' buyers. Provision is made at those markets for feeding the stock as long as the farmer sees fit, or till the market price meets with his approval, he, of course, standing all expense of feed, etc.

There are practically no livestock sold in this manner at the California markets with the exception of a small percentage of hogs, which are sometimes consigned to the packers, relying on their integrity for a fair price. Country buying is the rule, and unless you have carload lots to sell it will not pay you to try to ship to either San Francisco or Los Angeles direct. In that case you should correspond with one or more of the large packers, who will either send a buyer to your farm or advise you how they can best handle your offering.

Except for the possible difference in freight rates, Los Angeles and San Francisco prices correspond very closely, a slight variance sometimes occurring according to the needs of the local conditions, which cannot be overcome where each sale is a strictly private transaction.—Editors.]

MOLDY SORGHUMS.

Late harvested sorghums, especially feterita, are much harder to keep from heating in the sack than those harvested earlier in the fall.

Some of the farmers in the southern part of San Joaquin county who delayed planting till well along in the summer last year found it exceedingly difficult to store their grain after harvesting. When sacked and put into piles, the grain absorbed moisture from the air badly, although covered with heavy canvas in damp weather. The result was moldy grain.

In some cases it was taken directly to the mill and run through a fanning mill. This lowered the temperature and by piling afterwards in tiers, with air space on the sides, the grain kept in good condition.

This work is unnecessary when the crop is planted early enough in the season to permit of thorough ripening in the head by the middle of September.

FIRST SEMI-ANNUAL SALE
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Kings County Poland China Breeders' Association
will be held at
The Fair Grounds, Hanford, Calif.
Saturday, Feb. 5th, 1916.
On this date there will be one hundred and fifty head of Registered Poland Chinas sold, consisting of
Bred Sows, Bred and Open Gilts
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Some of the best animals from the leading herds of Kings County will be sold without regard to price or value.
This sale will be absolute AND WITHOUT RESERVE.
No protection measures of any kind will be permitted.
Sale under cover and will be held, rain or shine.
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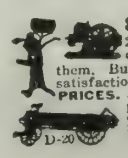
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WINNINGS, P. P. I. E., 1915.
Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock any age, Second. Flock, any age, bred by Exhibitor, Second.. Flock one year old, First. Flock one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total including American Shropshire Specials of 15 Firsts, 9 Seconds, and 6 Championships.
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Seasonable Hints for Hatching.

To the Editor: Last fall as a beginner I took your advice and brought out two settings of chicks. No doubt numerous others, on a large or small scale, took your advice. Mrs. Swaysgood gives seasonable hints for spring hatches. Dare I suggest your giving occasional seasonable hints on fall hatches, to help at least the new hands, to bring their chicks on successfully through to a finish.—J. S. A., Los Angeles.

[Answered by Geo. H. Croley.]

If our correspondent had stated some trouble he was having, it would be much easier to offer advice or give seasonable hints on rearing fall hatched chicks. The best adviser in any difficulty is usually one who nas had a struggle with disappointments before gaining satisfactory results.

In handling fall hatched chicks we had so little trouble, as compared to the exacting attention we found necessary in raising late spring hatches, that we are puzzled to know what to write. To be sure, we were careful with our fall chicks and gave them ample attention; but the provisions against rain, cold, and natural winter conditions, while different required no more effort or expense than to provide shade, cool water, protection from blighting north winds, etc., for the growing spring hatched chicks. And when proper preparation for winter was made it invariably produced joyful results, whereas on the other hand it often seemed that no matter what we did for them in July and August, the chicks hatched in April and May—and sometimes March—just refused to thrive.

Perhaps a hint or two may be worked into this reply by relating an experience we had about twenty-five years ago. In September we moved our plant from a "winter swamp" to higher ground a mile distant. We first built a cottage, incubator house, and moved everything but the brooder house, leaving this until we were more comfortably settled. The first week in October we filled the incubator with about 500 Brown Leghorn eggs, producing not quite 400 strong chicks after disposing of a very few weaklings not worth rearing. In the meantime unusually heavy, early rain prevented moving the brooder house.

This was awkward, but we met the emergency by brooding the chicks in apple boxes, about 50 chicks to each box. A single thickness of clean grain sack was placed on the bottom of each box and the chicks were put on this; a similar piece of sacking was laid on the top of each box. At night these boxes of chicks were stacked in the incubator house containing incubators in operation; each alternate box was turned half way around, affording ventilation through the sack covering of the two portions of the boxes that extended beyond the box on top of it.

During the day these boxes were carried outdoors and each placed in a run about 5 feet wide by 8 feet long and two feet high, made by placing two 12-inch boards on edge, one above the other. At the back end, a portion of these runs was covered with a three board Arkansas roof. Under this roof the boxes were placed after the chicks were dumped into the runs, which were carpeted with short, young grass. When a storm occurred, they were scooped up in double handfuls and replaced in the boxes. If a severe and cold rain, the boxes were covered with the sacking, otherwise they were left open on top.

Five or six of these fowls were killed by varmints and two, when about half grown, died from some unknown cause, but the others grew into splendid broilers or breeders and large, thrifty pullets.

All this required much time and care; the brooder house was so much more desirable that we let nothing stand in the way of moving it before another hatch came off. These chicks were at first fed dry mixed infant chick feed and later with mixed whole grain and moist mash. Dry mash feeding had not yet become popular.

POULTRY NEWS NOTES.

By Geo. H. Croley.

A poultry association has been organized at Ramona, San Diego Co.

At the Modesto poultry show the silver cup for best display of White Leghorns was won by McHenry Poultry Farm.

Nearly all the Bronze Turkeys entered in the Exposition poultry show by eastern exhibitors were sold to Pacific Coast breeders.

We have recently received enquiries for Gray African Geese, White and Silver Laced Wyandottes. Who has them for sale?

A lot of 206 cases of Chinese eggs, the first lot to arrive since Sept. 10, 1915, reached San Francisco on the steamer Hazel Dollar on Dec. 29.

There has recenly been some enquiry for Narragansett turkeys that were once quite popular in California. This variety is not so inclined to wander as the Bronze turkey and for that reason they are better suited to small ranges near villages or in thickly settled country districts. There were fifteen entries of this breed at the Panama-Pacific Poultry show but were all exhibited by eastern breeders.



Poultry Breeders Directory

MAHAJO WHITE ROCKS—Incubator Chicks, $25 per hundred. Hatching Eggs $10 per hundred. The best all-purpose fowl for farms and the most profitable one. Lay well and consistently; best for capons and broilers. Beautiful snow white plumage. Gentle dispositions. Colonize them in your orchard and reap double profits. Send for catalogue. At Panama-Pacific Poultry Show were awarded sweepstake on Cock (295 Egg type), as best utility bird in show—200 Birds competing. Mahajo Farm, Box 597, Sacramento, Cal.

BABY CHICKS—All sturdy youngsters from good stock and hatched right. Rhode Island Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. Lay most when prices highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for heavy laying. Eggs, chicks, stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

WHITE PLUMAGE POULTRY FARM and Hatchery. Sells day-old chicks from healthy, vigorous breeders. White Leghorns at $10 per 100, $90 per 1000. Barred Rocks and Rhode Island Reds at $15 per 100. We sell the Victor Incubator and Brooder. Circulars free. H. A. Schlotthauer, Exeter, Cal.

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PENN'S QUALITY BARRED PLYMOUTH ROCKS—At the World's Poultry Exhibition, San Francisco, our **Western Bred** Rocks ranked among the best in the world, both in untility and exhibition points. Catalogue free. Breeding stock and eggs for sale. Golden Rule Poultry Farm, St. Helena, Cal.

WE LEAD IN CAPACITY—THE SANTA CLARA VALLEY HATCHERY AND POULTRY RANCH—We can serve you with the best the Valley can afford; 8 varieties of baby chicks. White leghorns in 1000 lots a specialty. Your correspondence solicited. Information cheerfully given. Route 6, Box 336C, San Jose, Cal.

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ROOFDEN CHICKS are hatching every week. When do you want yours? White Leghorns that are worth while, by hundred or thousand. Black Minorcas, beauties, great layers of big eggs, and a hardy strain. Rhode Island Reds, the breed for meat and winter eggs. We can supply you with prices that are **right.** Ask us. Circular free. Roofden Poultry Ranch and Hatchery, Campbell, Cal.

BUFF ORPINGTONS, BUFF LEGHORNS, BOURBON RED TURKEYS, BUFF DUCKS—Winners at Riverside, Pasadena, Los Angeles and San Francisco. Breeding stock. Hatching eggs. Baby stock. Free illustrated booklet. The Ferris Ranch, R. 2, 144D, Pomona, Cal.

HERE IS YOUR CHANCE to get thoroughbred White Leghorn hens Hoganized heavy-laying strain. $18 per dozen. Cocks, $3. No culls. Correspondence solicited. Stoldt Poultry Ranch, R. 6, Box 258, San Jose, Cal.

BABY CHICKS — White Leghorns, Black Minorcas. We guarantee safe arrival and full count. Strong, vigorous chicks. 1916 catalogue contains instructions on care of baby chicks. Free Lasher's Hatchery, Petaluma, Cal.

BROWN LEGHORN, WHITE LEGHORN day-old chicks that are well-hatched and strong, from healthy vigorous breeders. SAN JOSE HATCHERY, 373 Meridian Road San Jose, Cal. "Chicks well hatched are half-raised."

INCUBATORS AT MANUFACTURERS' PRICES—To assist the poultry industry, we are making this concession. Write the GEO. H. CROLEY CO., INC., 631-637 Brannan St., San Francisco, for particulars.

WHITE ROCK BABY CHICKS from good winter layers. Booking orders now. Early hatched chicks make early Fall layers. Few Hoganized cocks for sale. Mrs. J. B. Tupper, Ceres, Cal.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized heavy-laying strain. Correspondence solicited The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

BARRED ROCK COCKERELS—$2.50 each. Am booking orders for Rhode Island Red and Barred Rock chicks for February, 15c each. G. L. Hawley, Madera Cal.

PERFECTION FIRELESS BROODERS—There is none better. Simple, inexpensive, easy to operate. Free trial. Ask for particulars. H. E. Teal, Willits, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorca, White Leghorn stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

WHITE LEGHORNS—Hoganized. Bred to lay. Booking orders now for hatching eggs. $6 per 100, $50 per 1000. No chix. R. H. Dickinson, Los Gatos, Cal.

BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trap-nested stock Fairmead Poultry Farm, Fairmead, Cal.

WHITE ORPINGTONS—200 egg strain and Buttercups, the new farmer's fowl. Write for prices and description. M. S. Woodhams, San Mateo.

ORPINGTONS: BUFF AND WHITE—Black Minorcas and Carneaux pigeons. Cockerels ready for service. Susan Swaysgood, R. 2, Pomona, Cal.

WHITE LEGHORN BABY CHICKS that are hatched right, from good stock. Order now for spring delivery. Mrs. G. Logan, Morgan Hill, Cal.

HATCHING EGGS from Hoganized S. C. W. Leghorn two-year-old hens, $1 per setting, $5 per 100. Allendorf Egg Ranch, Kerman, Cal.

EAST SACRAMENTO HATCHERY—Capacity 16,000. Special low price for large lots of chicks. Box 1205 M St. Road, Sacramento, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and cockerels. B. C Quessenberry, R. 4, Lodi, Cal

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

RHODE ISLAND RED BABY CHICKS and Eggs. Heavy laying strain. Send for circular. Rosedale Ranch, R. 1, Hayward, Cal.

TRAP-NESTED LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue W. G. Suits, 378 Bandini Ave., Riverside, Cal.

BLACK MINORCA, R. I. Red, Buff Orpington Cockerels. Eggs for hatching. Mrs. R. A. Holdridge, P. O Box 282, Dixon, Cal.

TRAPNESTED LEGHORNS—White and Buff Stock. Eggs, chickens. Arthur E. Schroeder, Box 179E, Mountain View, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

S. C. RHODE ISLAND REDS—Hatching eggs, Baby chicks and cockerels. Mrs. V. P. Hewitt, Dixon, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

BLACK MINORCAS—Cockerels. Reasonble. Chester Fosgate, Quito Road, Campbell, Cal.

HARES AND RABBITS.

LEADING RABBITRY IN AMERICA—Flemish Giants and New Zealands. Cut your living expenses. Catalogue free. Empire Rabbitry, Empire, Cal.

BELGIAN HARES—Young stock for sale. Hurd Bros. St. Helena, Cal.

TURKEYS, DUCKS AND GEESE.

TURKEYS—Bourbon Red, White Holland, Mammoth Black. Pens headed by 1st prize winners at World's Fair, San Francisco, 1915. Young males, $8 and $10. Old males, $12 and $15. Young hens, $3.50 and $4. Old hens, $5 and $6. Choice sturdy stock. Eggs, $5 per dozen. Mrs. B. Hocking, Guasti, Cal.

BOURBON RED TURKEYS and eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914. Just as fine this year. A. E. Balmer, Alhambra Valley, Martinez, Cal.

MAMMOTH BRONZE TURKEYS—THE BEST IN THE WEST—Extra special prices. Further information cheerfully given. Write now to secure best birds. Geo. A. Smith, Corcoran, Cal.

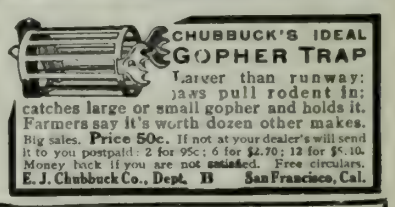
HART'S BRONZE TURKEYS—Vigorous young stock. Also large yearling hens, $5 each. Eggs in season. Circulars free. Albert M. Hart, Clements, Cal.

ROCKWOOD FARM WHITE HOLLANDS are selling rapidly. Let us quote you stock. 201, R. 6, Santa Rosa, Cal.

THOROUGHBREDS—White Holland Turkeys, White African Guineas for breeding. T. M. Calvert, McFarland, Cal.







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POULTRY DEPARTMENT, HOPLAND, CALIF.

Best Equipped Poultry Farm in California.. Sanitary conditions perfect.

EGGS FOR HATCHING AND BABY CHICKS.

Breeding Pens now mated with large-sized, healthy matured breeding birds. All open-air housed, thus promoting strong sturdy chicks.

STANDARD-BRED SINGLE-COMB WHITE LEGHORNS.

Hatching Eggs, $1.50 per setting	$5.00 per	100
Baby Chicks, Jan. and Feb. delivery	12.00 "	100
" " March "	10.50 "	100
" " April "	10.00 "	100

WHITE PLYMOUTH ROCKS.

Hatching Eggs, $2.00 per setting	$ 7.00 per	100
Baby Chicks, 20c each	15.00 "	100

In the Utility Class at the P. P. I. E. Poultry Show our Leghorns received 4 awards, and on Eggs 1st and 2nd.

Our White Plymouth Rocks received 7 awards, and on Eggs 1st and 3rd.

BOOK ORDERS NOW TO MAKE SURE OF DELIVERY.

Terms—10% deposit with order, balance before shipment.

Farm Poultry for Profit.

[Written for the Pacific Rural Press by Susan Swaysgood, Pomona.]

RUNNING THE INCUBATOR.

If your incubator is in a good cool cellar or building with plenty of fresh air the conditions are right for your work. If, on the other hand, you are attempting to run an incubator in a bedroom, a kitchen, or in any place where the temperature varies ten to as much as thirty degrees, don't expect to get a big hatch of strong chicks. I admit you may do it, but the chances are bigger that you won't. I know it because I have been all through that part of the game. There is nothing in it; build a small cellar or a separate place.

How to Start.—Never start your hatch with a dirty burner or an old wick. After things are ready start your lamp and run the incubator until it reaches 103, or whatever degree you wish to start at, then regulate it and keep at it until you get it so that it stays at 103 without losing or gaining. Not until it has run thus several hours is it safe to put the eggs in. In placing eggs on a tray, there is always the desire to put just a few more on each tray, and that extra few cause more losses than they ever do good. It is as bad, in a way, as crowding chicks in a brooder. If you have more eggs than the machine will hold, hire a couple of good hens to set on them until you can test the machine out, then you will have room for them. Place the eggs in a slanting position, never on end; the germ does not lie at the end of the egg but midway between, a little nearer the large end than the small one. When the egg sets slant-wise the heat can strike the germ of each egg, but if placed on end in order to crowd a few more eggs on a tray, the heat rays cannot do what they should do and you take the eggs out later as having started, but not grown. There is your loss for crowding.

It is better to put eggs in early in the day, and then watch the machine until the thermometer gets to the degree you set it at. Don't be in a rush to change it, unless it tries to run too high. In case it does, work patiently until you have it adjusted. The life of the hatch often hangs on the first five days; eggs will stand more abuse after that time than before. Be sure everything is right before you leave it and then it will in all probability stay right, if you burn good oil.

Testing the Eggs.—The first and second day just attend to your lamp; don't open the door until the third day, then move the trays into different positions and turn the eggs. Then if you are an old hand you can test out white eggs and make room in the trays. Have your room fairly warm, or cover the eggs so that they won't chill and work fast, one tray at a time, getting the eggs in already turned as quick as possible. If the eggs feel cold to the touch put them back without testing all, but turn them, as they must not stay in one position any longer. If you are not an expert better leave the testing until the fifth or seventh day.

On the third and fourth day you will notice a small black spot with blood streaks running from it, but it is so small that you will not be able to tell whether it is a growing germ or a dead one unless you have tested a great many eggs. Of course anybody can tell the clear eggs that can see, and those can all be taken out. With dark colored eggs it is not safe to test at all under five days, and seven is safer. Dark eggs are very deceitful, and no matter how many you have tested unless you have a very strong light you are liable to take good fertile eggs out: eggs that would mean chicks.

After ten days test again and if there should be a bad egg escape you, you will certainly smell it on opening the incubator door. Once you smell it, find it if it takes an hour.

After the fifth day turn the eggs twice a day and if weather is cold that will be all the airing they need until the tenth day when you can leave them until they feel cool to the touch. Also at every turning or taking out roll the eggs a little, being careful not to break them. Rolling eggs is exercise for the chicks and makes them stronger, and is also an aid towards preventing cripples.

If you notice, the last chicks to hatch are the cripples, very rarely any that hatch early are so deformed; and the reason for this is that the shell, or rather chick, has been laid in that one position so long that the limbs are deformed. Rolling helps them to hatch quicker. The moisture question is usually given consideration by the man that sends out the machine and I always think he knows more about that particular machine than anybody else, so if you have lost the directions and are at a loss to know what to do, don't ask anybody, but just write the maker, tell him your troubles, and he will set you right if anybody can.

After Hatching.—It is not good policy to open the incubator until the hatch is off, though it is done many times with no seeming ill results, but for the amateur it is wise to keep the door closed until near the end or he may chill eggs that would hatch good strong chicks. As soon as all are hatched that are going to hatch, open up the doors and take out the shells and trays, give the chicks some fresh air and leave them right in the nursery for 36 hours. Adjust the air and heat by the contentment of the chicks. You will notice if they are too cool they will huddle together, and if too warm they will gape for breath. These things are wrong, but I am telling you so you will know what is the trouble if they occur. A contented chick sits down and "cheep cheeps" quietly and lazily or stands wondering why he is kept in that box when he wants to run.

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SAVE MONEY
STAR OIL GAS BURNER
For cook stove or furnace. Heat as intense as city gas. Burns cheap engine distillate. No smoke, dirt, or odor. Absolutely guaranteed. Agents wanted. Make money selling to friends and neighbors.
Star Oil Gas Burner Co.
Pasadena, Cal.

California Poultry Practice

WRITTEN TO TEACH BETTER POULTRY METHODS ON THE FARM.
By Mrs. Susan Swaysgood.

Every poultry raiser of California should have this book. It is very practical and will help make your business profitable. In the preface of the book the author says:

"This book is not an accident; it is born of a desire to help others to avoid the stumbling-blocks in the poultry business, and at the request of many readers of The Pacific Rural Press, and other papers.

"With forty-two years of experience with poultry it is expected that I have learned a few things about it; it's a poor business that does not teach lessons in that length of time. Don't you think so?

"There are books, yes, books without number, on poultry matters, but many of them are mostly theory. This book tells you just what I have done and how I would do it.

"It is a book of action, and it is action that counts these days. We have to act in the living present if we want to live. I want to live and I want others to live, too, and as I have learned these things by experience it is fitting that I should tell others how to obtain results without paying such a big price for the experience.

"The things told you in this book are original, unorthodox, but strictly practical; and if you will read and then heed, you will be well satisfied that the author has given you your money's worth. California is an empire in itself, and I am sure there are enough men and women engaged in the poultry business, or wanting to get into it, to call for a million copies of this book, though its only claim is that it is needed."

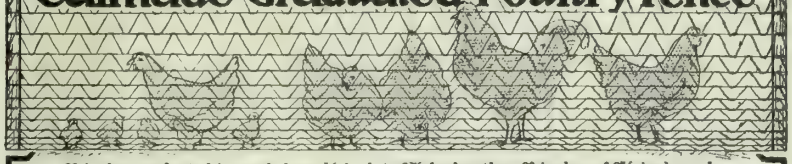
The book contains 157 pages, besides illustrations. The 45 chapters cover every phase of poultry culture from eggs to hens, and from hens to market. Feeding, housing and parasites.

Price, cloth-bound, postpaid, $1.00.

Pacific Rural Press, Publishers

525 Market Street, San Francisco, Cal.

Send For A Sample Of Calmade Graduated Poultry Fence



10 inches graduated in mesh from ½ inch to 1⅞ inches then 20 inches of 2¾ inch mesh, topped by 4½ inch mesh for the height of the fence.

The Fence Without a Sky Line

It is the most economical as well as the most practical of all poultry fences. It costs no more to buy than the old style poultry netting and costs much less to put up.

It is the only fence made with a bottom mesh smaller than one inch. It will turn the smallest chickens. Because of the straight line, continuous weave of "CALMADE GRADUATED" Fence, baby chicks won't hang in it, large fowls can't climb it.

"CALMADE GRADUATED" Fence will not slip at the joints nor unravel when cut. Uniform in weave and width. It unrolls flat as a board—it is easily put up and stretches without bulge, kink or bend on posts 16 feet apart. Learn all about these advantages and let your next fence be a "CALMADE GRADUATED." Write at once for free samples of wire used, free illustrated folder and name of nearest dealer.

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Highest Award -- GOLD MEDAL -- of Honor at Exposition



Highest awards on Lamp Heated Incubators and Brooders.
Highest awards on Electric Incubators and Brooders.
We guarantee our machines to be better than any others or money refunded.
CATALOGUE FREE

Victor Iucubator Co., Decoto, Alameda Co., Cal.

BABY CHICKS and EGGS

We will book your order for Chicks or Eggs for future delivery.
EXTRA SELECTED BLACK MINORCAS & WHITE LEGHORNS OUR SPECIALTY
Our Chicks are hatched in the
BEST VENTILATED HATCHERY IN CALIFORNIA
INSTRUCTIONS HOW TO RAISE CHICKS FREE

HICKS JUBILEE HATCHERY, Route 2, Box 22, Petaluma, Calif

When Grain is High Feed DIGESTER TANKAGE

Whether intended for show or market, the hog attains perfect condition and more quickly and economically if his ration includes some DIGESTER TANKAGE. The growing pigs need DIGESTER TANKAGE as a bone and muscle builder. Write for free pamphlet on hog-feeding.

WESTERN MEAT COMPANY,
Animal Food Dept., 704 Townsend St., San Francisco, Cal.

The Home Circle Page of the Pacific Rural Press

MRS. BEST'S BULLETIN.

My dear Friends:

Amid this season of "Sales" I am sure that some startling new wares are being unpacked in the basements and lofts. Some few are already finding their way to view as the post-holidays bargain pursuers clear off the counters.

Somehow I am afraid that the fine leather garments now in the height of their smartness in New York are "catching on" rather slowly here. The progressiveness of our smart dressers is hardly to be considered at fault, however; rather it is a result of climatic conditions. The impressive leather redingotes, jerkins, waistcoats and cap collars—to say nothing of turbans, which are more in evidence here on the coast than costumes in leather—may be very chic and snug where zero blasts toy with the ladies. But here they might be a little beyond comfortable except in an open automobile. But they are the rage in the East in all shades of color and in many kinds of finish from the glaze of patent leather to the velvety suede.

More in favor are the knit sport coats in this modified climate. The outfit generally includes a toque and scarf of the same material and shade. One very snappy outfit was in pink thread silk with the wide belt and a generous knot in front, embellished with appliqued bands of vivid green tartan plaid on the collar, cuffs and pockets, and on the toque and ends of the scarf. Such scarfs are usually priced at $10 with the other goods in proportion.

Saw a regal jet bead overdress for evening wear at $27.50, fit to wear at a court function.

In hats I saw a small black velvet shape with closely curled brim that was made bewitching with one black medium-sized plume flowing rakishly back from the front where it was fastened with a large plain silver buckle.

Something to interest Small Son—a baseball uniform set at $1.10. It includes a 2-piece striped cotton uniform, cap, belt and socks.

As a help to the amateur in photography there is an exposure meter device for fastening to the shutter with data for exposures suitable to the various times and diaphragm openings.

For a mantel knick-knack there is an alabaster model of the Coliseum at Rome, for $1.

The woman's mackinaw coat has arrived. It is like the men's except that it is cut very, very full and skirts quite long and ample.

And I think this chat has been quite long and ample and I will forbear, With kindest of regards,

ROSABELLA BEST.

(Note—Readers wishing information from Mrs. Best, care of the Rural Press, will receive a reply if they enclose a stamped addressed envelope.)

THIS WEEK'S BEST HOUSEHOLD HELP:

To clean painted woodwork—simply moisten a rag with coal oil (kerosene) and rub the surface to be cleaned.

Often Enough.—"Pa, what is repartee?" "Oh, merely an insult with its dress-suit on, my son."—Puck.



A COMFORT OF HOME IS THE COMPANY SHELF.

"We have never found Mrs. S—— unprepared," say all her friends, of a woman noted for her ready hospitality. But their admiration is of second consideration. Since her foresight in having what she calls her "company shelf" has saved her from embarrassment and flurry on many an occasion, to her own satisfaction. On this shelf she keeps practically untouched, except on emergencies, a supply of those eatables that may be quickly served. Once begun, this shelf is maintained with little expense, well stocked with ammunition against surprise. Here is a list of suggestons for this shelf, which is considered apart from the regular larder.

1 doz. box sardines.
½ doz. cans baked beans (large size)
½ doz. cans salmon.
3 cans tunny.
3 cans chipped beef.
6 cans deviled ham.
3 cans herring.
Olives
1 jar cheese.
1 bottle salad dressing.
1 pkg. seeded raisins.
6 cans soups.
1 large can corned beef
Bouilion cubes.
3 packages egg noodles.
6 pkg. macaroni & vermicelli.
1 doz. pkg. crackers & cookies.
Bottled grape juice.
Jellies and jams.
3 cans oysters.
3 cans tamales.
Canned corn, tomatoes, peas.
1 can tomato sauce.
1 pkg. rice.
1 pkg. minute tapioca.
Pickles (mustard, sweet, sour and dill).
Bottled pineapple juice.

With a supply like this, one can start an indoor or outdoor picnic any time. But the main idea is to keep it replenished.

THE IDEA EXCHANGE.

Who knows the best recipe for a "Mulligan"? This popular stew is demanded by the brawny menfolks at the ranch of Mrs. K. D. V., Sonoma county.

We have it from a reader at Santa Ana that potassium permanganate at the rate of a teaspoonful of the crystals to a gallon of water will prolong the freshness of cut flowers standing in it.

Thanks to Amelia R. of Yuba City for her appreciation of the plum pudding suggested in the Dec. 25 issue.

If the correspondent signing herself "Sycamore," Fresno, will provide her name and full address the formula she desires will be mailed to her.

COMMUNITY PROPERTY.

Something that no doubt will command the attention of women all over the state—married women above all—is the agitation just begun through the California Federation of Women's Clubs for amendments to the constitution affecting property rights of the sex. A recent conspicuous domestic disturbance provoked the agitation, which will be put before the legislature on its general merits. The reforms aimed at are: First, to relieve the wife of paying inheritance tax on the community property; Second, to treat the husband and wife alike in inheriting the whole of the community property without formality, except for the usual rights of the children in the deceased partner's half; and Third, to make it obligatory that all community real estate stand in the name of husband and wife.

HERE'S A SAVORY DISH.

Are you preparing a meal with macaroni? You need not cook a meat dish separately.

Have your macaroni in the pan and start it baking. Then twenty minutes before it should be done lay small pork sausages on top of the dish and let them bake with it, turning them once so that they brown on both sides. The flavor of the sausages will permeate the entire dish of macaroni. And the tempting sight and the aroma of it as it reaches the table will make all hitch their chairs closer.

HAVE YOU TRIED:

Putting in a bit of salt when cooking very sour fruits to need less sugar?

Using a scrap of waxed paper instead of beeswax on ironing day?

Washing the cook stove with clean soapsuds as a substitute for polish?

Using a teaspoonful of vinegar in the lard while frying doughnuts to keep them from soaking it up?

Sprinkling a pinch of flour over eggs when frying to prevent grease popping?

SATISFACTORY SWEET MUFFINS.

(This Week's Preferred Recipe.)

A quick and most satisfying formula for muffins is the following: Mix and sift 1 cup sugar, 3 cups flour, 2 teasp. baking powder and 1 teasp. salt; add 1 pint sweet milk, 1 beaten egg, 1 tablsp. melted butter, and 1 teasp. vanilla extract. Beat vigorously and bake in greased muffin pans. This recipe will make 18 delicious muffins.

YOUNG PEOPLE'S FILMS.

All over the country the subject of motion pictures is receiving renewed attention. The fact is that children under a mature age are absolutely not catered to by producers, and therefore they have to see pictures that in many cases they do not understand or appreciate, or that may be positively harmful to them.

It is a question that is hard to solve. In the first place a picture perfectly satisfying to a young child is the most baffling thing to undertake imaginable; in the second case the manufacturers find it commercially advisable to cater directly to the more mature spectators. This is the case even where they are in sympathy with the complaints that reach them about lack of adaptability of the film subjects to the infant mind.

In an effort to assist grown people to select such a program of films as will not be objectionable for children, the National Board of Censorship issues a periodical list of films it has reviewed which it thinks can do no harm to children under 16. Such a list of titles is given herewith as a sample, this being the latest issued, and some of the films are probably on the market yet.

Brown's Summer Boarders, Getting Rid of Aunt Kate, The Ranch Girl and the Cowboy, Lake Louise, Canadian Rockies, Dreamy Dud in the Old Swimming Hole, Sonny Jim and the Great American Game, A Prince in Disguise, In the Palace of the King, The Honeymoon Pact, In Double Harness, The Barnyard Mixup, When the Light Came In, The Wizard of the Animals, Captain Kent's Educated Seals.

A Two-Cent Mystery, The Kid Magicians, The Hired Girl, Whiffle's Busted Alibi, An Intimate Study of Birds No. 1, One Reel Feature, Dreamy Dud in King Koo Koo's Kingdom, Grand Canyon, Old Good-for-Nothing, The King of the Air, Dreamy Dud Goes Deer Hunting, In the Mountains of Jutland, A Slavey Student, The Quest, Twice Won, Mr. Paganini.

Dreamy Dud: A Visit to His Uncle Dudley's Farm, Willie Stayed Single, The Ring-Tailed Rhinoceros, Mr. Jarr and the Visiting Fireman, The Elephant Who Worked for a Living, A Ten-Cent Adventure, The Fox Woman, Tracked Thru the Snow, His Two Patients, The Fairy Prince.

Of course it is impossible for the board to guarantee that the children will vastly like a program made up from this list. Some of the titles are not very promising for a hilarious shout of glee from the little ones. For instance Lake Louise, Canadian Rockies, would not send them rolling off their chairs in enjoyment, though it is doubtless very improving.

In the writer's opinion it is a mistake to ram all the educational films down the throats of the small children, while the grown-ups dodge them and select something with a thud and smash in it. However, several minds are now seeking to devise lively dramatic and comedy films particularly intended for children. It is to be hoped something comes of it.

HIS ONE TUNE.

Pietro is old and is bent and is grey,
A worn barrel organ he turns all the day,
And one tune you hear every time you pass by,
That old childhood favorite, sweet "Rockaby."

"Rockaby baby, on the treetop"—
Into his cap the pennies now drop,
"When the bough breaks the cradle will fall—"
What tender visions those old notes recall.

Men who are busy with weighty affairs
Pause for a moment forgetting their cares,
Memory quickly goes back to the day
Their own mother sang it her own loving way.

"Rockaby baby, mother is here—"
Surely she is; you can see her face dear,
"Angels of slumber, hovering nigh—"
Pietro, there's gold in your old lullaby.

Pietro's one tune echoes on year to year;
Poverty's gnawing he never need fear,
Rivals may come with their ragtime more spry,
But Pietro will win with his sweet lullaby.

"Rockaby baby"—memory's wings
Take the man back as his money he flings,
"Rockaby baby—" evening draws nigh—
O, Pietro, once more with your old lullaby.

—By J. E. Sanford.

AN AID TO THE SHY.

"As I think back," said Aunt Martha, "I wonder how we can ever get along without the phonograph."

"We would talk for a time to the shy young man caller about the weather, and then we would discuss the coming church picnic and hope that we would have good weather for that, but that about used up our topics of conversation.

"It helped a little for me to play two or three pieces on our good, old square piano, but when I swung around on the piano stool — there were not so many piano benches then—we would come to another silent spell; and then pretty soon the shy young man would say:

" 'Well, I guess I'll have to be going now.'

"But now," went on Aunt Martha, "why, now when the conversation lags you have the phonograph.

" 'Oh, have you heard this?' you say to the shy young gentleman, and then you put on the disk and crank the machine.

"From that on there is no trouble. In the course of time, when the young man rises to go, you hear not, 'Well, I'll have to be going now,' but this: 'My! I didn't know it was so late;' spoken with animation. He has had a pleasant evening.

"Really, it seems to me that to shy young people the phonograph is nothing less than a blessing. I don't know how we ever got along without it."—N. Y. Sun.

Ruth's Reply.—Ruth went to call on her little friend Mary. She was met at the door by Mary's mother, who told her that Mary had had the mumps and she must not come in, for then she would be exposed, and she, too, would have the mumps. Ruth reflected for a moment, then said: "O, I can come in, for I'm sure I won't take them, for I was exposed to a very bad case of broken leg last week and I didn't take it."

FIRST BASEBALL MITT.

About 1867-68, a baseball team came to Rockford, Illinois, writes an "old timer" in All Outdoors, to play our nine. They called themselves the "Unconquered Clippers of Illinois," and plastered our town with big posters. We made up our minds to give them a drubbing, and at the end of the game the score was, Rockford 76, Clippers 0.

There was a little chap playing third base who grabbed everything that came near him, and held it, too. I noticed that he wore a kind of glove. When the game was over, I went to him and asked what it was that he wore on his hand. He told me that he was a machinist, and had got his hand badly hurt a week before, and he showed me the wound in his palm. He said the boys did not want him to play in that game, but he got a piece of thin sheet steel and made it slightly concave, but so that it did not quite touch the sore place. He then made a short glove to cover all the hand excepting the first joints of the fingers, and doubled the leather in the palm so that he could slip the plate between.

I asked him if it hurt, and he said it did not, and that he could take a hot one and hold it better with the glove than without it. That is the whole story. I don't think that Spalding ever talked to the little chap with the iron fist, as the boys dubbed the third baseman, but everybody in Rockford knew about the mitt; and he may have got the idea from him. Anyway, that was the first glove that any ball player ever wore.

IT SOUNDS MODERN.

Overalls for women are becoming the fashion among Georgia housewives, says a story from Savannah, Ga. The demand for these useful garments has become so great that storekeepers are laying in supplies of them in boys' sizes and cut especially to fit the female figure.

"Overalls are the ideal dress for housework," says Mrs. E. W. Davidson, who uses them and makes no secret about it. "The unconventionality of the garb should not count, because women are not supposed to be on exhibition when housecleaning.

"If you wear a nice dress you soil it, and if it isn't a nice dress you don't look well in it. I find that undoubtedly the proper dress for cleaning windows and sweeping floors and the like are overalls. They can be neat and white, and they don't need to be unlovely.

"Did you ever set out hotfoot after old Mr. Dust in a dress, and, while you were chasing him, seem adorable, and at the same time eliminate the dust instead of transferring it to your own garments?"

Took the Only Thing Left.—"Did the trained nurse take your temperature?" asked the man of his convalescent friend. "Yes," responded the sick man. "After the surgeons got through with their charges, that was about all there was left to take."

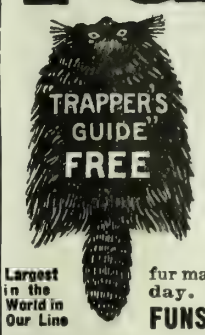
Hopeful. — Traveler — Isn't this train pretty late? Station Master—Yes, she is a bit behind, mister, but we're expectin' her every hour, now. —Harper's Magazine.

Only One.—Victim of Accident—Did you notice the number of that machine that hit me? Si Botts—Sure. Victim—What was the number? Si Botts—One; how many did you think it was?

Good Advice. — Arthur — About how much salary should a chap get before marrying?

The Bookkeeper—Oh, just a bit more than he ever will.—Chicago News.

A Happy New Year
is assured to all those who sleep on the famous
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IT WILL LAST A LIFE TIME.
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FUNSTEN BROS. & CO., 393 Funsten Bldg., St. Louis, Mo.



The Markets.

Unless otherwise noted, prices quoted are f. o. b. San Francisco.

San Francisco, Jan. 12, 1916.

WHEAT.

Buyers are taking a little more interest, and there is said to be a little more movement in the country, though growers are generally holding for an advance. Values show no quotable change.

Cal. Club, ctl.	$1.70 @ 1.72½
Northern Bluestem.	1.80 @ 1.82½
Northern Club	1.72½ @ 1.75
Northern Red	1.65 @ 1.80

BARLEY.

The market has stiffened up a little in the last week, as buyers are again coming into the market, and both grades are moving at an advance. Most offerings, however, are firmly held.

Shipping, ctl.	$1.35 @ 1.37½
Choice Feed, ctl.	1.30 @ 1.35

OATS.

There is no heavy demand here, the movement being mostly of a jobbing nature. Northern holders, however, report a demand from the East, which may develop into a large movement. White oats are a little higher.

Red Feed	$1.30 @ 1.35
Red Seed	1.45 @ 1.65
White	1.40 @ 1.45

CORN.

Yellow continues to stiffen up in the East, resulting in a further slight advance here, and desirable lots of California corn bring about the same figure. The sorghum grains are unchanged, but continue in very good demand.

Eastern yellow, ctl.	$1.75 @ 1.80
Milo Maize	1.40 @ 1.45
Kaffir	1.65 @ 1.70
Egyptian	1.45 @ 1.55

BEANS.

The first decline noted in several months has occurred on cranberry beans, which are 20c lower. Large whites and pinks have again been marked up a little, other lines standing as before. A few shipping orders have come in since the first of the year, but the demand so far is nothing like what it was a month ago. Stocks, however, are light in most lines, and with a much greater demand expected in the spring the market is firm.

(On wharf, San Francisco.)

Bayos, per ctl.	$5.00 @ 5.10
Blackeyes	3.50 @ 3.60
Cranberry Beans	4.90 @ 5.00
Horse Beans	3.25 @ 3.50
Small Whites (south)	5.80 @ 5.90
Large Whites	5.75 @ 5.90
Pinks	4.30 @ 4.40
Limas (south)	4.60 @ 4.70
Red Kidney	6.50 @ 6.75
Mexican Reds	4.50 @ 4.65

SEEDS.

The varieties quoted receive only slight attention at present, as most of the planting has been done. The seed market in general, however, is quite active. Values show little change.

Alfalfa, per lb.	18 @ 19 c
Melilotus Alba	30 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	4¼ @ 4½c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Sudan Grass	40 c

HAY.

Current arrivals have been very light, in fact rather below current market requirements, owing to unfavorable weather. While the demand here has been light, all offerings have moved readily, and prices have averaged a little better than before. With more favorable weather, a heavy movement is expected, as many buyers who have been holding off are now disposed to put in stock to last till spring. Whether this will stiffen up the market is uncertain, as the favorable crop outlook will no doubt bring in a lot of hay that has been held back.

No. 1 Wheat	$12.00 @ 15.00
No. 2	10.00 @ 11.50
Tame Oats	10.00 @ 16.50
Wild Oats	8.00 @ 11.50
Alfalfa	10.00 @ 14.00
Stock Hay	6.00 @ 9.00
Straw, per bale	.25 @ .40

FEEDSTUFFS.

The feed business in general is keeping in good shape, and alfalfa meal has been marked up again. Cracked corn also is higher in sympathy with the advance in corn, and rolled barley is firmer.

(Wholesale prices per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$21.00 @ 22.00
Alfalfa Meal, per ton.	19.00 @ 21.00
Alfalfa Molasses Meal per ton	21.00 @ 22.00
Bran, per ton	25.00 @ 26.00
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00 @ 25.00
Cracked Corn	39.00 @ 40.00
Middlings	32.00 @ 33.00
Rolled Barley	26.50 @ 27.50
Rolled Oats	29.50 @ 31.00

VEGETABLES.

The effects of the frost have been apparent for the last week, lettuce, celery, cauliflower and artichokes especially being hard hit, though southern vegetables did not suffer. Arrivals were very light for a few days, but have been much heavier this week, consisting largely of damaged stock. This has caused very easy prices on ordinary offerings, though desirable lots in practically all lines are firmly held. Lettuce especially is in heavy supply. Rhubarb is coming a little more freely, and is easy but not quotably lower.

Cabbage, ctl.	35 @ 50 c
Cauliflower, doz.	35 @ 75 c
Sprouts, lb.	3 @ 4 c
Rhubarb, box	$1.00 @ 1.25
Peas, southern, lb.	.08 @ .10
String Beans,	.08 @ .12
Lima Beans	.08 @ .10
Peppers, bell, lb	.05 @ .08
Tomatoes, L. A., crate	.50 @ 1.00
Eggplant, lb.	.05 @ .07
Celery, crate	2.25 @ 2.50
Artichokes, doz.	.50 @ 1.00
Lettuce, small, crate	.75 @ 1.25

POTATOES AND ONIONS.

Potatoes and onions of all kinds are higher, as the California stock is cleaning up, and the market is drawing rather heavily on outside markets. Delta onions are cleaned up along the river, with only a few cars in storage, and Oregon stock is up to $2.

(On Wharf.)

Oregon Burbanks	$1.60 @ 1.85
Salinas Burbanks	1.90 @ 2.00
Delta Burbanks	1.25 @ 1.60
Sweet Potatoes, ctl.	1.30 @ 1.75
Onions, Delta, ctl	1.60 @ 1.75
Oregon	1.50 @ 2.00
Garlic, per lb.	10 @ 12½c

POULTRY.

The turkey market is irregular, short arrivals some days sending prices up, while a slight increase of shipments causes a drop; but the quoted figures cover the average range. Chickens, etc., show no change for the week, but the market is firmer in tone, as the demand has picked up appreciably and arrivals of most lines are moderate.

Turkeys, dressed	24 @ 30c
Live Turkeys, old, lb.	19 @ 20c
do, young	20 @ 21c
Broilers, 15 lbs. to doz. and less, lb	30c
do, over 15 lbs. to doz.	23 @ 25c
Fryers	21 @ 22c
Hens, extra, per lb.	16 @ 17c
Small	15 @ 16c
Smooth Young Roosters, per lb.	17 @ 19c
Squabs, per doz.	2.00 @ 4.00
Geese, per pair	2.25 @ 3.00
Ducks, young, lb	18 @ 19c
Old	14 @ 15c
Belgian Hares	9 @ 11c

BUTTER.

Creamery men are greatly interested in the amended law which took effect Jan. 1., requiring that butter bearing a geographical name shall be marked with the place of origin. Extra grade is rather scarce, and prices are a little higher than last week, being also above the level of last year. There has been a sharp advance in the north, and liberal shipments are going that way, consisting largely of storage stock. The outlook is considered favorable for increased shipments to Australia this year.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	26½	26	27½	28	28	27½
Prime Firsts	25½	25	25	26	26	26
Firsts	25	24½	24½	24½	24½	24½

EGGS.

Extras have dropped 3c. during the week, and pullets also are slightly lower, as production continues to increase and the local demand is nothing extra.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32	31	30	30	29½	29½
Sel. Pullets	29½	29½	28	28	28	28½

CHEESE.

There is little new in the cheese market, fancy flats being slightly higher on light receipts, while other lines are steady at the former figures.

Y. A.'s, fancy	17 c
Fancy Calif. flats, per lb	15½c
Monterey Cheese	16@17c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	28	28	28	28	28	28
Eggs	33	32	30	30	30	30

DECIDUOUS FRUITS.

Apples constitute practically the only offering in this line at present, and they are now all coming from cold storage. The local demand for the last week has been very light, and while there has been some inquiry for shipment, business is not very active. Oregon stock receives more attention than local.

Apples, Cal. Newtown	$ .75 @ 1.25
Pearmain	.65 @ 1.00
Greening	.65 @ 1.00
Baldwin	.75 @ 1.25
Oregon Spitzenbergs	1.50 @ 2.50
Jonathan	1.20 @ 1.75

DRIED FRUITS.

The market locally is very uninteresting. The only quotable change is on prunes, on which the range has narrowed down considerably, with 5½c. as the top figure, and rather extreme at that. In fact, nobody wants prunes very urgently at present, and anyone anxious to sell might have to offer special inducements. The quantity on hand, however, is not heavy, and holders generally are confident that the market will stiffen up as the season advances, so there is not enough pressure on the market to cause any distinct weakness. In other lines packers say there is nothing doing, mainly because there is practically nothing left in the state, aside from small and widely scattered lots. These, if of desirable quality and offered when there happens to be demand, should bring good prices: otherwise it is hard to tell what they will bring. Just now the trade is not taking much interest in anything, and offerings will probably be better received in another month. Raisins at present are quiet, but steady, the movement up to the holidays having been very satisfactory. The Associated Company announces its intention to pay a ¼c advance for sultanas for the next two years. The New York Journal of Commerce says:

Though very little material change is apparent in the New York market for prunes, Coast advices state that the general tendency among packers is somewhat firmer, and that prices appeared to be slowly moving toward a higher level. With stocks of California figs growing very scarce on the Coast, operators report that the market is very quiet and that only a moderate buying is in progress in any quarter. Coast apricots, though quiet are maintained on a very strong basis. Peaches for future shipment from the Coast are steady, with no change in the general range of prices.

Apples	6½ @ 7½c
Apricots, per lb.	9 @ 12 c
Figs, white	5 @ 6 c
Black	3½c
Calimyrna	8 @ 10 c
Prunes, 4-size basis	5 @ 5½c
Peaches	4½ @ 6 c
Pears	4 @ 7 c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6¾c
Thompson Seedless, No. 1, 16 oz	7¾c
Sultanas, 16 oz.	7¼c
Loose Muscatels	6¾c
London Layers, 3-crown, 20-lb. box	1.25
Imperial Clusters, 6-crown, 20-lb. box	2.50
Bulk, layers, 50-lb. box	2.75

CITRUS FRUITS.

The eastern citrus auctions show a little higher prices for navels than before. The lemon market is in good shape and prices well maintained. Tulare county has practically closed its most successful orange season, the average being about $1.90 per box paid to the growers.

At New York on Monday, Jan. 10th., the auctions averaged for navels from $1.85 to $3.65 per box; for lemons $3.20 to $4.20. At Chicago the same day, prices averaged for navels from $2 to $3.25, and lemons $375 to $4.25 per box.

Grapefruit has found little demand for the last couple of weeks, and with accumulating supplies prices have been marked down sharply. A little better movement has resulted. Oranges and lemons are doing a little better the last day or two, but have been quiet most of the week.

(Wholesale prices, San Francisco.)

Oranges, Navels	$1.50 @ 2.75
Tangerines	1.25 @ 1.75
Grapefruit	1.75 @ 2.50
Lemons, box	1.50 @ 3.75
Lemonettes, box	1.25 @ 1.75

HONEY.

The local demand for honey has not revived to any extent, sales being almost entirely in very small lots, though there is an occasional lot shipped to other markets. There is enough of most grades on hand for all requirements, though fancy comb honey is rather scarce.

Water White, comb	13 @ 15 c
Amber	8 @ 12 c
Water White, extracted	7 @ 8 c
Light Amber	3 @ 4 c
Dark	2 @ 2½c

NUTS.

The general demand is naturally light at this season, though any desirable lots of walnuts would find a fair market, owing to the scarcity. There is still a fair supply of almonds, but the crop is expected to

Special Live Stock Market Report.

The strong tone of hog and mutton markets all over the country has been an influencing factor in bracing up the local market and as a result several classifications have been marked up. As an evidence of the strength of the hog situation, Chicago receipts broke all previous records on Monday with a run of 85,000 head, the market only breaking 18 cents, which was entirely recovered the day following. Light hog arrivals are still fairly free here, but supplies are getting pretty well cleaned up in the country on all lines and it now appears certain that feeders who were generous with grain and kept their hogs will realize satisfactory results.

The mutton market is improving and while the larger packers are drawing on their feed lot supplies to meet requirements, others are compelled to go to Utah and Idaho and it looks as though this condition will continue for some time.

The fresh meat market here is recovering from the effects of the Christmas glut and is expected to get back to normal by next week. At the present time trade in cattle is slow, owing to the above condition, but the apparent seriousness of the hay situation is responsible for heavy offerings from the country, which are not, however, meeting with any response from the buyers. This condition is expected to improve some as soon as the dressed meat market gets right again. Both the Portland and Seattle quotations on cattle are higher than the local buyers will offer.

WOOL.

A wire from Boston today says: "Boston market is extremely active on fine wools and medium grades are strengthening. Now looks as though we might have slightly higher prices. Advice here is to sell on the market. Selling freely and advancing prices with sales." There is still little if anything being done in the local market and no activity reported.

clean up well before this year's crop is ready.

(Prices f. o. b. San Francisco.)

Almonds (1915):	
Nonpareil	15 c
IXL	13½ c
Ne Plus Ultra	13 c
Drakes	11 c
Languedocs	11 c
Walnuts (1915):	
Budded, per lb.	17½ c
No. 1	14 c
No. 2	11 c
Jumbo	17 c

LIVE STOCK.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, S. F.)

Steers, No. 1	6¾ @7 c
No. 2	6¼ @6½ c
Cows and Heifers, No. 1.	5¾ @6 c
No. 2	5¼ @5½ c
Bulls and stags	4 @5½ c
Calves, light	8½ @9 c
Medium	7½ @8 c
Heavy	6½ @7½ c
Hogs, grain-fed:	
100 to 150 lbs.	6 c
150 to 240 lbs	6⅝ c
240 to 300 lbs	6¼ c
Prime Wethers	6¾ @7¼ c
Full Wool Lambs	8¼ @8¾ c

DRESSED MEATS.

Steers	10¼ @10½ c
Veals, large	12½ @13 c
Small	13 @14 c
Prime Wethers	12½ c
Lambs	13½ @14½ c
Hogs	9½ @10 c

WOOL.

(Prices paid in the country.)

Sacramento Valley, lb.	16 @17 c
Southern, year's staple	13½ @14½ c
Six months	12 @13 c
San Joaquin (defective)	9 @10 c
Northern, free	10 @15 c
S'thern Mountain, free	11 @12 c
Tehama Co., free	12 @14 c

HORSES.

The local market has been without interest since the first of the year, as no shipments of any importance have come in, and there is no indication that additional offerings could be sold to advantage. A renewal of shipments is expected, however, within the next few weeks, and from all indications there should be a better demand for heavy stock in the spring.

(Approximate values at San Francisco, based on auction sales.)

Drafters, 1700 lbs. and up	$200@225
Drafters, 1550 to 1650	150@200
Chunks, 1350 to 1500 lbs.	150@175
Wagon horses, 1050 to 1350 lbs.	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@ 75
Farm Workers	50@100

GROCERIES.

Sugar has been marked down a little. Rice is reported a little easier. Advances are expected on canned tomatoes and canned salmon. Local grades of flour are higher.

(Wholesale prices, San Francisco.)

Flour, Family Extras, per bbl.	$6.20@6.60
Sugar, granulated, per lb:	
Cane	6.30c
Beet	6.11c

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	28.60	28.00		28.80
" 9	25.33	26.66	26.00	28.16
" 16	27.50		26.83	
" 23	30.66		30.66	
" 30	28.66		28.00	
Feb. 6	26.68		26.80	
" 13	26.74		27.00	
" 20	29.00		27.16	
" 27	29.10		27.00	
March 6	27.00		25.25	
" 13	24.66		24.00	
" 20	23.00		22.50	
" 27	22.91		23.00	
April 3	23.00		22.23	
" 10	23.08		22.00	
" 17	23.00		22.00	
" 24	23.00		22.00	
May 1	23.08		22.00	
" 8	23.00		23.08	
" 15	23.58		23.00	
" 22	23.58		23.00	
" 29	23.50		23.00	
June 5	23.90		23.00	
" 12	24.08		23.83	
" 19	25.16		26.00	
" 26	25.50		26.16	
July 3	25.83		26.16	
" 10	26.21		26.00	
" 17	26.58		26.00	
" 24	25.41		25.50	
" 31	27.00		26.00	
August 7	27.00		26.00	
" 14	27.00		26.00	
" 21	27.50		26.00	
" 28	28.00		26.00	
Sept. 4	28.00		26.00	
" 11	28.00		26.00	
" 18	27.00		26.00	
" 25	26.50		26.00	
Oct. 2	25.91		26.00	
" 9	26.91		26.00	
" 16	27.00		26.00	
" 23	27.00		26.00	
" 30	27.00		26.00	
Nov. 6	26.55		26.00	
" 13	28.11		26.33	
" 20	29.59		28.66	
" 27	28.90		28.80	
Dec. 4	27.41		26.50	
" 11	27.33		23.83	
" 18	43.08		36.00	
" 26	26.40		28.00	

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00		30.33	
" 23	30.50		30.00	
" 30	28.16		26.66	
Feb. 6	23.33		23.75	
" 13	23.00		25.10	
" 20	23.60		23.58	
" 27	21.40		20.80	
March 6	20.50		19.00	
" 13	20.66		19.00	
" 20	21.00		19.66	
" 27	20.83		18.50	
April 17	22.00		23.08	
" 24	21.80		22.25	
May 1	26.16		22.00	
" 8	23.33		22.00	
" 15	23.16		22.00	
" 22	23.75		21.91	
" 29	23.08		21.83	
June 5	22.50		20.70	
" 12	22.00		21.00	
" 19	22.00		20.00	
" 26	23.33		23.83	
July 3	23.83		22.50	
" 10	25.50		25.00	
" 17	24.83		24.66	
" 24	25.41		25.50	
" 31	25.80		25.80	
August 7	30.50		28.00	
" 14	31.16		28.66	
" 21	31.25		30.16	
" 28	30.58		29.16	
Sept. 4	30.08		30.16	
" 11	34.33		31.66	
" 18	37.08		33.37	
" 25	38.66		34.66	
Oct. 2	40.08		37.33	
" 9	40.08		38.00	
" 16	45.50		40.00	
" 23	48.08		42.00	
" 30	48.58		42.83	
Nov. 6	51.08		43.00	
" 13	54.25		45.33	
" 20	53.83		45.00	
" 27	52.90		43.40	
Dec. 4	43.91		40.16	
" 11	41.16		37.33	
" 18	27.83		28.00	
" 25	40.80		36.60	

Publisher's Department

We learn that the veteran publisher of Los Angeles, Henry Kruckeberg, has secured the floricultural magazine California Garden, which has been published in Pasadena for the past ten years, and will move it to Los Angeles and issue it as a monthly under the title of "Suburban California." We suppose the new title means that the scope of the paper will be enlarged to take in the various agricultural activities comprehended in the name, and as "Krucke" likes fine printing we anticipate his producing a beautifully printed wide awake journal. Here's to your success.

Second Thousand Questions.

Our newest book "Second Thousand Answered Questions in California Agriculture" is just from the press and is being sent to those who gave us advance orders. This book is made up of questions and answers which have already appeared in the Pacific Rural Press. Prof. Wickson has given a good deal of time in re-editing and arranging the matter. Many of the questions are answered by staff and special writers, among them being Prof. F. W. Woll, Dr. H. B. Wintringham, Mrs. Swaysgood, Geo. H. Crowley, E. O. Essig and others.

The book contains 256 pages, is cloth bound and well printed. The matter contained is entirely different from the first book, issued two years ago, of which it is the sequel. The book covers fruit growing, vegetable growing, grains and forage, crops, soils, fertilizers and irrigation, live stock and dairy, feeding animals, diseases of animals, poultry keeping, pests and diseases of plants. The man growing fruit, grain or vegetables, or the stock and dairyman, poultry keeper or general farmer will find many a bothersome question answered.

The first volume of this work met with a rapid sale, and may be reprinted. Every buyer of "1000 Questions" will want this second volume and those who failed to get a copy of the first should surely secure this book. Price $1.50 postpaid. A special offer is made to our paid-in-advance subscribers (new and old). Send us a postal request and we will give you a chance to get this book at an attractive price.

"Please find a check for renewal of my subscription to the Pacific Rural Press. I still read it and like it, although too old to do much out of doors. This is the thirty-third year that I have taken it continously.

"Concord. Mrs. Sylvia A. Stowell."

Made-In-California Pumps Favored In East.

The largest single requisition for pumping machinery said to have ever been received by a western concern was that recently telephoned from Denver, Colorado, to the Layne & Bowler Corporation of Los Angeles. The American Zinc Company, owning extensive zinc mines near Mascot, Tennessee, through its chief consulting engineer, A. C. McDaniel, of Denver, ordered five large centrifugal turbine deep well pumps from the Layne & Bowler Corporation for the purpose of dewatering its largest mine in Tennessee. These pumps are capable of raising 10,000 gallons of water per minute. Owing to the great demand and high price of zinc, due to the war, the mining concern was in urgent need of the pumps and had them shipped to Tennessee from California by fast express, three entire baggage cars being necessary to transport the pumps and other apparatus. The express charges alone on these five pumps amounted to $13,000, but speed in shipping was of vital importance as the zinc company lost $5,000 every day the order was delayed. Three of the best installing engineers on the staff of the Layne & Bowler Corporation went to Tennessee to install the large pumps.

During the meeting of Plymouth Rock Club of Southern California, held Dec. 10, the use of the score card for judging poultry shows was endorsed.

Classified Advertisements.

MISCELLANEOUS.

SAVE MONEY ON YOUR PUMPING PLANT—We are reducing our stock of Gas Engines, Oil Engines, Centrifugal Pumps, Friction Clutch Pulleys, etc., and can name you very low prices indeed. Write us at once. Commercial Iron Works, 481-497 Fifth St., San Francisco, Cal.

MOGUL TRACTOR, 45 H. P.; used one season; fine condition; will demonstrate; have no use for it; will sell for half cost and give terms, or exchange for horses or mules Drills, discs and other farm machinery for sale. Address W. H. Hord, 704 Market St., S. F.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

APPLES!—Buy direct from producer. Newtowns, 90c; Missouri Pippins, $1.00; Bulk pack, 4 and 4½ tiers, equal proportion. No. 2 grade for cooking, 65c. Edwd. A. Hall, Watsonville, Cal.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds $3.00 delivered. Order with remittance, WM. J. SCHROTH CO., 112-B Market St., San Francisco.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.

ETTERSBURG STRAWBERRIES — Plants: dozen 25c; 100, $1.50; 1000, $10. Delivered. E. Welty, Ripon, Cal.

ASK FOR SNOW'S GRAFTING WAX—If your grocer does not have it, send to D. A. Snow, R. 3, Box 255, San Jose, Cal.

A BARGAIN—One 60 H. P. Mogul Tractor Engine in good order. Cheap. F. P. Smith, Davis, Cal.

BALED WHEAT HAY FOR SALE in carload lots. Write H. E. Van Hensen, Hollister, Cal.

TREES AND NURSERY STOCK.

SUDAN GRASS SEED for sale by the grower, direct to farmer at a saving of 60 per cent—less than Seed dealer's prices! Choice seeds; none better. Send in your orders now while it lasts. Greatest forage crop known for dry or irrigated land. Better and finer hay than Timothy. **Wm. P. Spalding, R. F. D., No. 1, Box 64, Los Molinos, Cal.** 30c in less than 50 lbs.; 25c per lb. in lots of 50 lbs. and over.

WALNUT TREES — Late blight-resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California black root, as the California Black root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

WALNUT TREES—San Jose Mayette, Barry Mammoth—on California Black Root, at lowest prices. San Jose Mayette, Barry Mammoth and Franquette Grafting Wood for sale. California Black Seedling Trees. Write for our low prices. Mammoth Walnut Nurseries, P. O. Box 597, Watsonville, Cal. Nurseries at 80 Tully Road, San Jose, and Watsonville, Cal.

TRIBBLE NURSERIES, ELK GROVE, CAL.—Grafted walnuts and grafted paper-shell pecans. Exclusive propagators of Tribble, Mayette, Kerr Parisienne, Glady and Improved Franquette. 19 other varieties. Fine stock of almonds, prunes, Bartlett pear on resistant roots, and other fruit trees and plants. New list ready.

1000 SACKS OF AMERICAN WONDER and High Top Burbank, clean seed Potatoes, from fields that produced 388 sacks to the acre, winning third prize in State Contest. Act quick as they will not last long. H. A. Hyde, Watsonville Nurseryman.

ORCHARD TREES, BERRY PLANTS, long on Gooseberries and Currants. To introduce my catalogue, I will send 1 doz. best bush and climbing roses for $1.50; 1 doz. different German Iris, Choice, for 75c. H. A. Hyde, Watsonville Nurseryman.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

WALNUT TREES—Eureka and El Monte varieties a specialty; also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

EUREKA WALNUTS are the best grafted on native black roots You'll be surprised at our prices. Write today—tomorrow never comes. Geyer Bros.' Walnut Nursery, 214 S. Almason St., Alhambra, Cal.

PAPER SHELL PECANS—Standard varieties—Success, Stewart, Frotcher, Delmas and Van Dieman. 7-8 feet, $2; per 100, $150. 5-6 feet, $1.50; per 100, $100. R. Fischer, San Gabriel, Cal.

RHUBARB PLANTS—Crimson Winter 1 year, per hundred, $2; 2 year clump, each 10c. Seed per pound, $3.50. Wagner's Giant, 1 year, per hundred, $3.50. Currier Bulb Co., Seabright, Cal.

FRANQUETTE AND MAYETTE grafted on California Black. Sizes 3 to 10 feet. Prices reasonable. Special discount on large orders. Sunset Nursery, 525 W. San Carlos St., San Jose, Cal.

FOR SALE OR EXCHANGE—1500 San Jose Mayette Grafted Walnuts. Six to ten feet. Price low or will exchange on light auto or good heavy team. Chas. Story, Rivera, Cal.

FOR SALE—Two and three-year-old Mission Olives, propagated from my own trees—no mistake about variety. Also Thompson Seedless Vines. W. A. Hayne, Box 461, Marysville.

SOUDAN GRASS SEED—California grown and pure. For prices write undersigned and state quantity wanted. George Boock, Los Molinos, Cal.

WAGNER'S CRIMSON GIANT WINTER RHUBARB—Subdivided plants. $15 per 1000; $2 per 100. G. E. Shelford, Healdsburg.

SPINELESS CACTUS for seed, $5 per ton. G. E. Fillbrook, Lakeside, Cal.

BARTLETT PEAR TREES—$10 per hundred. N. M. Cunningham, Red Bluff, Cal.

PRUNE TREES—12 cents. Walnuts, 30c. Cash Nurseries, Sebastopol, Cal.

APPLES, PEACHES—10 cents. Gage Nursery, Corning, Cal.

WANTED.

WANTED POSITION as manager of Orange Grove, Highland, Redlands, or Riverside district by orchardist and nurseryman of life experience. Middle-aged, married. Thorough, conscientious work guaranteed. Best references. Orchardist, P. O. Box 102, West Riverside, Cal.

MACHINE MILKER with Milking Machine and Babbock tester wants position. Understands modern dairy testing and management. Will rent fully equipped dairy. Box 201, Pacific Rural Press.

EXPERIENCED, RELIABLE RANCH SUPERINTENDENT wants position. Diversified farming, dairying, irrigation, registered live stock, poultry; references. Box 202, Pacific Rural Press

WANTED—About sixty young men and women to enterr the WESTERN NORMAL on January 1, 1916, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We save you time and money. For information address, WESTERN NORMAL, J. R. HUMPHRIES, Principal, Stockton, Cal., Box 704.

WANTED—Position as manager of large orchard, vineyard, dairy, alfalfa and grain farming by a man with many years of practical California experience. Reference, Room 114, Hotel Andrews, San Francisco.

EXPERIENCED ORCHARDIST is open for position as manager of orchard, general farm or dairy. Address Box 200, Pacific Rural Press.

Experienced Swiss Dairyman wants dairy on shares—10 to 15 cows. Box 203, Pacific Rural Press.

LAND FOR SALE.

CALIFORNIA LAND—Money-making little farms, high class, low-priced properties in all counties. Call or write the oldest land office in California; we will save you 25 to 50 per cent. C. M. WOOSTER CO., 303 Phelan Building, S. F. Catalogue free.

WANTED TO RENT for term of years, about 40 acres, with house and barn; other improvements—alfalfa preferred. Box 16, Rural Press

LONG LEASE ON SHARES—Old established nursery. Wholesale and Retail. Good terms. Full particulars, write Tribble Nurseries, Lodi, Cal.

WANTED GOOD FARM, or unimproved land from owner H. L. Downing, 145 Palace Bldg., Minneapolis, Minn.

Throttle-Governed CUSHMAN
GAS ENGINES.
Steady Running. For Spraying, Woodsawing, Etc. Write
THOMAS R. BROWNE,
Stockton, Calif.

Overland
TRADE MARK REG.

You Can Now Get the Big Comfortable 35 Horsepower Overland for $695

En bloc 35 horsepower motor
Electric starting and lighting system
Electric control buttons on steering column
Four inch tires

Roadster $675
f. o. b. Toledo

Demountable rims; with one extra
106-inch wheelbase
Deep divan upholstery
One-man top; top cover

Model 83 B

With unerring judgment of value—

With a rush that swallowed up a record production in jig time—

The public took more than 50,000 of the $750 Overlands in six months.

In six months we've absorbed all the overhead; absorbed all the development expense; realized on all the experimental cost that is usually spread over a year.

We covered our material requirements at before-the-war prices—saved three and a half million dollars on aluminum and another million on steel.

We have increased our production capacity of 300 cars per day last June *to 1000 cars per day.*

So again we have broken *all* records.

Again we have planned and bought material for a bigger production program.

And again we are setting a new and supreme standard of value—

You can now buy the big, roomy, comfortable, thirty-five horsepower Overland for $695.

Here is the value which has clearly dominated the automobile market for the last six months—now made even more clearly dominant.

Here is the car with a performance record never even approached by any car of its size ever built—fifty thousand in every day service.

And though the price is reduced the car is improved.

It has an up-to-the-minute power plant, en bloc type, developing full thirty-five horsepower. It has abundant power and speed and an exceptionally quick get-away.

The value is pre-eminent—unapproached.

We guarantee that the price for this model will never be lower.

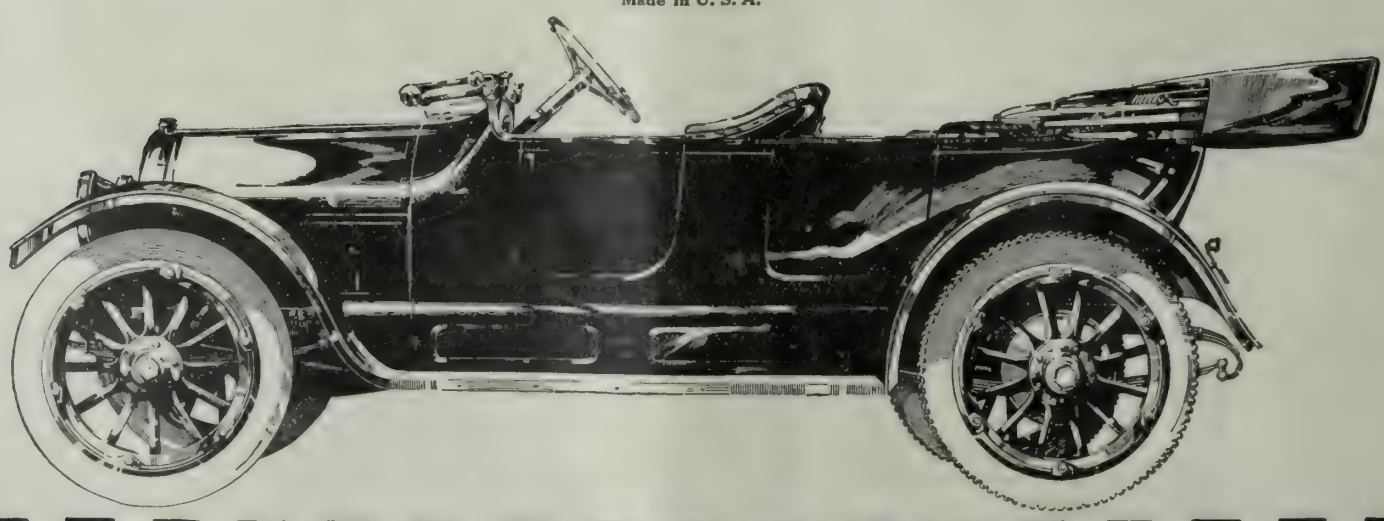
But this price reduction is made in the face of a rising material market—we cannot guarantee that it will not be higher.

See the Overland dealer now—anticipate your requirement if need be—but make sure of your delivery *now.*

Catalog on request. Please address Dept. 619.

The Willys-Overland Company, Toledo, Ohio

"Made in U. S. A."



Vol. XCI—No. 4 Forty-sixth Year.

THE PACIFIC RURAL PRESS

California State Library 7-1

SAN FRANCISCO JANUARY 22, 1916. LOS ANGELES

What Should California Do for Bread?

Fourth of a series of sketches in which the Editor presents suggestions drawn from long experience, of what Californians should think and do for the advancement of California Agriculture.

WITHIN a century California has twice passed from a considerable surplus in wheat production to a considerable lack of it for the uses of her own population—not by flood nor drouth, nor by any other natural phenomenon, but by her own choice. In 1818 the missions produced 82,500 bushels of wheat; in 1840 the Californians were exporting to Mexico as much as 12,000 bushels; in 1850 the argonauts were crying for bread and wheat and flour were brought in ships from all the quarters of the globe. In 1860 California produced wheat beyond her own needs and began her career as a world-supply country. In 1905 California began to eat more wheat than she produced and has now for a decade ranked as a consuming country.

Of course California does not stand in general cereal production as these facts about wheat might indicate, because she is now, by a long lead, the largest barley-producing state in the union and is approaching in barley as high a producing and exporting mark in barley as she ever attained in wheat—but that is another story. Californians do not eat barley and they are rather shy in drinking it, as some other peoples do. Therefore what we do in barley does not compensate for our sin of omission in wheat and does not answer the question: "What should California do for bread?"

A Dramatic Affair.—Surely California's career as a wheat supply country from 1860 to 1895 was dramatic. If we were handy at film language we would try at a "scenario" in the hope that some moving-picture millionaire would make the films for it—but we must be briefer than that.

So long as California was turning out from fifty-five to sixty-five millions' worth of gold a year, as she did in the '50s, her small population of that day could retain its unique hold upon the world, but when that output was halved, and the people to subsist upon it were doubled, as occurred in the '60s, it became absolutely necessary to hit the world in some other way. Previous to the gold discovery the scant pastoral population secured all they wished from the outside world by sliding hides and tallow down the bluffs of the southern California shoreline upon the decks of a few trading ships, but that, of course, would not do as a means of maintaining a self-conscious American state. During the first decade of greatest gold output there was wide trial of agricultural production, chiefly for home use and to displace imports. This was successfully done with many things which did not require much skilled labor, but the crops which could be most easily, quickly and cheaply produced were demonstrated to be cereal grains. Wool, dairy products, fruit, etc., were all shown to be superlatively suited to the natural conditions but they all required more men, money and time to grow than grains did—besides grain had been hawked around the globe since the dawn of civilization and was saleable at sight and without argument wherever there were hungry people. And so, for these reasons, Cali-

Continued on page 98.



UP-TO-DATE METHOD OF HAULING CALIFORNIA GRAIN TO SHIPPING POINT.
Caterpillars and other tractors displace many teams in moving crops from field to railway station or river landing.

PACIFIC RURAL PRESS

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FRANK HONEYWELL - Publisher and Manager
W. H. SCHRADER - Advertising Manager
D. L. SCHRADER - Subscription Manager
R. E. HODGES - - Assistant Editor
J. C. LOOMIS - Assistant Editor

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., January 18, 1916.

Eureka	2.86	21.19	21.22	50	36
Red Bluff	.76	13.02	12.26	46	28
Sacramento	1.92	12.27	9.01	52	32
San Francisco	3.71	17.75	10.52	54	38
San Jose	2.02	11.02	7.64	58	32
Fresno	1.28	6.34	4.54	66	32
Independence	3.14	2.70	4.47	42	—
San Luis Obispo	4.84	16.13	8.64	60	30
Los Angeles	6.22	12.92	6.67	60	40
San Diego	*2.94	†6.68	4.40	60	38

*For 6 days.
†Seasonal to Jan. 17th. 6.68, report of 18 missing (San Diego).

THE WEEK

Those who like to base conversation on the weather surely have an enduring foundation this week. The great weather powers decided to anchor a storm off the California coast rather than off the mouth of the Columbia river, and it has resulted in a drenching such as our State seldom gets—pouring down from three to four inches of water within twenty-four hours at several points near the Southern California coast—than which, to indicate wetness, nothing more need be said—except that other parts of the state, from coast to snowy mountain districts, received their full share of the downfall. There has been regrettable hardship and loss of property from high wind, rising rivers and overflow here and there, but on the whole, of course, plenty of water is incalculably valuable and insures crops even in many places which are often too dry. This is California's share of weather disturbances, which have covered the whole continent since January began. At a point in Montana the temperature record is 48 degrees below zero. Even in Washington the cold has been sufficient to close saw-mills—which is surely a high point in efficiency.

In California we have the variety which is characteristically ours. The ocean-born storm raised the temperature in citrus places and fought the frost-bearing winds from the northeast more cheaply and effectively than orchard-warming appliances can do it, and the chances are that our great, good, warm-hearted neighbor, the Pacific Ocean, will regulate our temperatures during the remainder of the rainy season. Our recollection is that the third week in January ends the freezing—not including, of course, the spring frosts, which may visit the deciduous fruits after the citrus districts have safely passed their peril. How we may have a breath of summer even amid our severest measure of storms is shown by the fact that fresh strawberries reached San Francisco last from some point in the Imperial Valley. On the other hand globe artichokes on the coast of San Mateo met cold enough to arrest their usual winter work, which will make the crop late, and in some cases even the active plants were injured.

The abundant moisture will encourage activity in tree planting, and those who have not yet followed our advice, to make sure of the trees they needed from the nurseries, should not delay their orders. There is much new acreage going in and inter-planting among vines, which it may be necessary to displace, is being widely practiced. In the important grape section around Lodi it is estimated that the demand for fruit trees will be far greater this year than it has been for the past four or five years, during which it is estimated 100,000 trees have been set out each year. The same thing is going on in other districts.

Old Men and Old Trees.

Thinking about fruit-tree planting, we remember an old friend in the foothills who used to meet all questions as to why he did not plant some fruit trees on his place, with the answer that he was too old. And he went on that way although he lived long enough to find himself living on a bare spot in a forest of orchards which his neighbors planted. Men of ordinary old age are not too old to plant trees in California. It is interesting to note how old trees and old people get mixed up in this State. We read in an exchange that a "doctor has written a book to prove that California is the land of longevity, and declares that the average length of life in this State is 74 years, as against 44 in other States. He says that we have 400 centenarians in California and thirty in San Francisco. It is a most interesting book, and the eye is caught by pictures of a white man aged 118, a white woman 105, Indians going up to 180 and the Grizzly Giant, credited with 8000 years." Evidently the writer gets so enthusiastic that he forgets to intimate that the Grizzly Giant is a tree and not a man. But it does not matter much.

Waking Up the Traders.

The latest tidings about the California peach society is given on another page, and we hope peach-growing readers will give heed to it. Some of the environing facts about the undertaking enforce the old observation that just as soon as growers begin to hustle a little toward marketing their own products all the old dealers get enlargment of the heart. It is perfectly sure to go that way. Just as soon as a neglected spinster gets one assiduous sweetheart all the other eligibles in the vicinity begin to tumble over each other in quest of her. It is just that way with other peaches. Down Tulare way a lot of peach-growers are reported to be angry because one of them was not named as director of the society which is now a-borning. How much reason there is in their stand we do not know, but the result is what might be expected. The following is telegraphed thence: "A protest has been made and it is declared that if some satisfactory action is not taken the Tulare county crop of dried fruit will be marketed to independent buyers, who are in the field with many good offers." If the Tulare growers have swung that club as a bluff to get a director, it is no worse a thing that other lovers sometimes do, but if they meant it it shows that they have no appreciation of the fundamental requirement of co-operation which is to stand together till the heavens fall. That, however, is only incidental. What we wish to point out is that dealers are watching their chance to get the peaches, and if they can stir up strife they will soon have things going their same old way again. And then see what they are doing around Yuba City, according to this report: "Many packers are active here signing up growers on a basis of 5 and 6 cents under a five-year contract. It is believed this is being done to discourage the peach growers' organization." These things show us something more, and more important perhaps, and that is, that the drive on peaches for the last two years was not because the dealers did not want peaches, but that they wanted them too much because of the money they could make if they could get the product on the run. They practically did it, and now, because their game is threatened they are willing to get nearer to what dried peaches are worth. There is an old proverb that when knaves fall out, or get knocked out, honest men get their due. It is a peach of a proverb.

The Two Colonels.

The war is on in California. It is a little humiliating that no higher military rank than colonel can be claimed by either of the commanders—for both are assuming field-marshal services, and we hope we can have them brevetted for gallant conduct in the field before the historian begins his work. As we have weekly reported advance movements by Col. Weinstock since last November, his campaign cannot be fully understood from what is said about it in this issue, nor do we make special reference to that. His general advance is, however, intercepted by Col. Irish, whose sharp firing on another page must attract attention. Why Col. Irish hits the other Colonel in the corset and not in the collar-button, where he has won such undisputed victory in the past, we do not know—except that it may have higher strategic value as a flanking movement. In view of the difficulty of locating the cause of the European war, we wish to state, frankly, that we caused this one. We provoked it; we commissioned the officers on both sides; we are supplying the munitions, and we shall fight it out, unless our troops run away. If any of our contemporaries have protests to make, over not being admitted to this initiative, will they kindly address them to this office? Having ourselves some of the qualms of political conscience, which stand-patters, reactionaries and "loil democrats" enjoy, though we have never been all these things at once, we had an idea that the progressives should not be allowed to put this thing over without giving our readers a glimpse at what could be alleged against it. As we have long known Col. Irish as an expert in all kinds of political thought which have existed during his generation, we asked him to go to it—which he kindly does on another page of this issue. He does not shell the trenches—that is, not yet; he only shoots a little range-finder this time. What we wish to secure as the result of this war is this knowledge: Do California farmers wish to have things done for them, or do they not? Do they wish the State to do marketing, rural credit, State building by colonization, etc., or do they not? Our colonels are in fine fighting trim, and if we can keep Mr. Ford out of the State, we may find out a few things worth knowing.

A Pre-Requisite to State Marketing.

On another page will be found a few of the tentative conclusions which Col. Weinstock has reached during his recent observations on the sale of California products at the East. These will serve to keep our readers thinking and talking over such thoughts as they awaken, in their conversations and assembly discussions. One thing we particularly desire to emphasize, in view of the inchoate organizations of peach-growers and prune-growers, is the position which Col. Weinstock takes in these words, which are attributed to him:

"Undreamed-of possibilities were disclosed to me on my trip. The foundations have been laid with large banking interests in New York to finance dried-fruit growers of California, if they will organize into associations and establish standards for packed products, and permit these products to be inspected and labeled by the State. If I had had with me in New York last month warehouse receipts from any California dried fruit so standardized, I could have borrowed millions of dollars at 3½ per cent interest, up to eighty per cent, the value of such products."

Now, if Col. Irish wishes to take a shot at this declaration of what the State can do for the producer by inspection, labeling and approved warehousing, or if he can propose some other better way to do it, it's up to him. He fights under his own orders, not under ours—we only supply the highway and the munitions. But this is not our purpose in throwing out this declaration of Col. Wienstock. This is the purpose. He clearly states that he can only work through organizations of growers. When we tramped through Europe with him in 1913 we found all government undertakings proceeding through producers' organizations. Our conviction is that there is no other way. To paraphrase scripture, without disrespect, we must say: Co-operation is the principal thing: therefore, get co-operation; and, with all thy getting, get understanding also.

The Rural Credit Business.

Now it does seem that rural credit is getting to be a great business for non-ruralists in this State. Since our last issue we have read some very interesting things. Charles Remington, financial writer for the Chronicle, wrote this: "The annual report to the stockholders of the Agricultural Credit Corporation of California shows that the business of extending rural credits can be profitably conducted by private capital, as distinguished from public aid. A dividend of 8 per cent has been declared, payable to stockholders of record December 31, 1915." We have no critical objection to this statement except that it seems to intimate that some one must have thought that the rural credit business was not a good one. Perhaps there were such people. Our judgment was that it was too good a business, and the dividend of eight per cent on the money which the bankers put in to conduct the business, seems to demonstrate that. It is of course not high, in fact rather low perhaps, as compared with ordinary banking profits, but it still shows that the stockholders in this concern, if it had been a rural credit concern by ruralists on the European plan, could have taken 4 per cent for the use of their money and put the other 4 per cent in the reserve fund. Of course it is a good business for bankers, if skillfully conducted, and perhaps the manager is warranted in saying this in his report:

"The propaganda for State aid to assist farmers in competition with existing money-lending agencies was defeated, a result which might be expected for any propaganda to assist any one class of our citizenship at the expense of the other classes. This movement was not backed by real farmers, but was a propaganda calculated to secure the sympathy of farmers for the politicians and rural editors who were behind the movement."

And so the "real farmers" for fear that, if they paid less interest, they would injure another class, to-wit: the bankers and capitalists, generously voted not to pay less interest, although the politicians and rural editors did exhort them to such inhumanity! But we are not objecting. If the farmers wish to have the business done that way, they surely have the right. But how does the manager know that the farmers beat the amendment? If they did we imagine that it was not on the rural credit feature. However, they will have other chances to answer that, probably.

Queries and Replies.

Querists must give name and address.

Pruning Pears and Satsumas.

To the Editor: How shall I prune pears and Satsuma plums? My trees have been set three years and have been cut twice.—S. P., Clearwater.

Cut them again, shorting the new growth about one-half and wholly removing branches which are crossing others or making the tree too thick inside. Branches going in wrong directions should be shortened to shoots, which will occupy free space. Leave the short twigs alone as they should bear some fruit next summer, probably.

Apricot-Gumming.

To the Editor: Some of my apricot trees exude large amounts of gum on the trunk. This seemed to be fatal to several young trees, at least the dead ones had large balls of gum near the root-crown. In large trees I have seen no bad effect so far, though they were affected in the summer.—A. L. P., Kingsbury.

There are several possible causes of which, perhaps, the most probable in your case is a root-trouble, caused by too little or too much water—aggravated in some cases by alkali in the soil. We should dig out a young tree which takes to gumming badly with foliage action clearly interfered with. Gum-spots on old thrifty trees are frequent and seldom destructive. They should be treated in the way prescribed for prune-growing in answer to another question.

Plum Pruning and Gum Disease.

To the Editor: I have Wickson plum trees, one year's growth. Should they be trimmed, or let them grow as they are? Also have old French prune trees, which have gum disease. What is the best method of treatment, and when?—H. B., Reedley.

Wickson is a rapid, upright grower. You should cut back last summer's growth quite severely, just as you would a peach tree; also spread the tree by cutting to buds pointing outwards. Choose three or four well-placed shoots, cut them back as advised and remove all others. Gum disease is induced by several causes, which an experienced grower can usually discern. It may be caused by insects, by sunburn, or by soil or moisture conditions affecting the root, etc. One cannot prescribe confidently without seeing the trees. The local treatment, if there are isolated gum patches, is to cut around, remove the diseased bark and cover with Bordeaux paste. Our "Second Thousand Questions," just issued, has the formula for this and for all other fungicides and insecticides needed in doctoring trees.

Asphaltum or Whitewash for Crown Borers.

To the Editor: In connection with your answer about "digging out borers" in your issue of January 8, allow me to ask if it is necessary to apply "Asphaltum D" annually? Does not whitewash (much cheaper) give just as good results, providing trees are annually inspected and borers not allowed to get established? If asphaltum is used on all trees, especially if necessary each year, it seems that the expense makes it prohibitive.—A. H., San Jose.

We are not aware that this proposition has ever been comparatively demonstrated. but historically it is this way. Years ago whitewash mixed with crude oil, coal tar, etc., was quite freely used, but it did not serve as complete protection because such preparations disintegrated and left openings. After such experience Earl Morris, your county horticultural commissioner, used asphaltum for years, and reported that asphaltum made a covering which gave the insects no chance to get either in or out. It is not necessary to wholly renew the six-inch asphaltum band every year, but it has to be looked over and all openings in it patched with more asphaltum. We cannot speak from personal experience in the matter, but would guess that the cost of such treatment would be a small matter compared with the advantage of successfully protecting the tree. We would like to have our readers' experiences in this matter.

Fall Irrigation of Almonds.

To the Editor: I have irrigated my almonds in the fall for the past three years, with the result that they leafed and blossomed late in the fall. My soil is rather sandy loam, and trees are at least 25 years old. I have not fertilized at all. I finally attributed the cause of the second crop of foliage to fall irrigation and accordingly have not irrigated yet this fall. I do not cultivate excessively. My trees have threatened to come in blossom this fall, but a few cold nights have pretty well prevented it, and but few blossoms have appeared. What is your opinion on fall irrigation and when would you advise irrigating? I have a pumping plant in orchard and can irrigate any time in the year.—E. T. S., Hollister.

It is probably true that in your light soil allowed to go uncultivated, the moisture disappears and the trees are forced into dormancy late in the summer. If you irrigate in the fall while the temperature is high you surely start the unseasonable growth which you speak of. The trees should be well cultivated to lengthen soil moisture, and irrigation should be given before the leaves get too dry to stay on the trees and use it in finishing and maturing the season's growth. Such trees will be more likely to bear well the following year. If you are not willing to give such a late summer irrigation, wait until the cold weather comes and winter-irrigate to supplement the season's rainfall. Your trouble seems to be due to irrigating too late in the summer or too early in the fall. Fall irrigation is good for an active tree, except in places where hard frosts may injure immature wood. as is often the case in the more northerly regions of the coast, or in the mountain valleys of this State.

Peach Association Elects Trustees.

[Written for Pacific Rural Press.]

The California Peach Association with almost 3,000 orchardist members became more than a wild dream at Fresno January 12, when the legal machinery was put in motion for the incorporation of a million-dollar association of peach growers.

Although only a beginning of the vast amount of work that will be necessary in uniting a sufficient number of peach growers so that the association may control 75 per cent of the crop of the State this year, the success of the enterprise seems assured from the fact that over $360,000 has already been subscribed, trustees have been elected and both individual and community aspirations have given way to the broader view-point of State-wide representation.

The Fresno meeting put into the hands of growers the destinies of the association, thereby automatically relieving the Promotion Committee of five of further responsibility. This was done by the choosing of 25 trustees from all parts of the State who in turn will choose seven directors. These directors will sign the articles of incorporation, the by-laws and growers' contracts, and also prepare new subscription agreements. They will be selected from the trustees already elected.

The campaign for subscriptions will be again started as soon as the directors take office as there is approximately $240,000 to be raised by June 1, 1916, if this year's crop of peaches is to be handled. The rules laid down by the Fresno meeting to be followed in securing subscriptions is embraced in the following resolution, passed at the meeting:

Resolved: That it is the sense of this meeting of the subscribers to the capital stock of the California Peach Association to be organized after the election of trustees for said subscribers, that the association so organized should not undertake to exercise any of the powers to be specified in its articles of incorporation, so far as the same may involve the buying, selling, handling of or otherwise dealing in peaches or other fruits, until subscriptions to the amount of six hundred thousand ($600,000) dollars (including stock already subscribed), and crop contracts covering 75 per cent of the acreage planted to drying peaches in California shall have been procured.

And we hereby authorize and direct our trustees to be elected at this meeting and the directors for said association to be elected by them, to take immediate steps to secure such additional subscriptions and crop contracts before exercising such powers.

Peach growers in all parts of the State should rally to the support of these directors in order to insure the success of a movement that promises to be worth many millions to the State. Whether or not this relief will come in 1916 remains entirely with the growers of the State.

GRAPE GROWERS' PROTEST.

At a large convention of grape growers held in this city January 8 the following declaration of opposition to proposed legislation was made:

"Whereas, There are to be submitted to the voters of California at the general election in November, 1916, two drastic amendments to the Constitution of the State, one prohibiting the manufacture, sale, giving away or transportation of wine and another making it a crime to serve California wines with meals in hotels, restaurants, cafes and clubs and preventing the sale of wine in sealed packages (not to be consumed on the premises) in grocery and other stores; and whereas, the adoption of these amendments will destroy not only California's wine industry, but will also cripple the raisin and table grape industries, which find an outlet for their surplus production through the wineries; will throw out of employment over 100,000 people engaged in these industries; annihilate an investment of $150,000,000; make non-productive 170,000 acres of wine grape land; destroy a revenue to the State and Nation and increase taxation, which must be made up by other industries; and whereas, the principles of the proposed amendment are contrary to the established policy of the State and Nation, which since 1862 have fostered viticulture and viniculture in California; therefore, the members of the California Grape Protective Association express our strong opposition to the adoption of either of the amendments first mentioned."

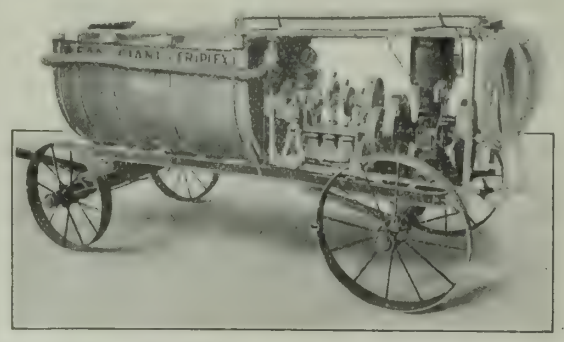
A strong movement in support of the grape growers point of view is to be organized in all grape growing sections.

FROST POTS PAINTED.

When the smudge pots are taken up in the spring, H. E. Wilkinson, a San Fernando lemon grower, has the dirt and asphalt cleared off from them and has them stacked until all are ready to dip in smudge oil. After the dipping, they are allowed to stand in the stacks until fall. Just before they are set out into the orchard again, they are dipped into hot asphalt mixed with stove distillate in the proportion of ten pounds per five gallons.

On the Limoneira Ranch in Ventura county the pots are thoroughly cleaned in the orchard by special apparatus on a wagon; coated with engine or stock paint, and set back under the trees on the highest ground possible as a general rule. They have been in the practice of setting them on newspapers, but since last winter rather doubt the desirability of this; because when a man sets a freshly painted pot on a piece of newspaper before setting it down, he practically always gives it more or less of a twist which wipes the paint off and leaves a freshly cleaned metal surface ready to rust as it stands under the trees through the summer. They are beginning to doubt, too, the desirability of leaving them on the ground all summer, for a little rust is a dangerous thing where leaking oil may kill trees or catch the frost fighter unprepared.

Pears are being planted on the C. W. Keen ranch near Acampo.



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Peach Blight and Worms.

Two sprayings are necessary for the control of peach blight. The first one having been made before Dec. 15, the second should be made as late in the season as possible before the blossom buds burst into bloom. This completes the treatment for peach blight and is just in time to control curl leaf and the twig borer. Either the fall or the spring application, if lime-sulphur is used, will control pernicious scale (San Jose scale). The work should be completed just as the blossoms are appearing. In order to accomplish this the grower must be guided by the number of trees he has to spray, the weather and the capacity of his pump. In this second spraying it is only possible to do effective work with a power outfit, as the material must be driven into the rough places in the bark under a pressure of 150 to 200 pounds, instead of simply coating the branches, as was recommended for the first spraying. For this application the lime-sulphur only should be used, but it must not be used in winter strength after the trees are in bloom. If the commercial sprays, "Ortho" or "Rex," are used, dilute 1 to 11 or 1 to 8 respectively, and stir constantly while spraying.

Borers.—Twig borers were particularly destructive during the spring of 1915; and with favorable conditions for their development, they may occur again next year. The first damage from this pest is to the young shoots, causing them to wilt and die. Occasionally young trees are killed outright, but more frequently become misshapen and distorted in their growth. Later, larvae enter the fruit, causing wormy peaches. Larvae of the twig borer spend the winter just under the bark in the crotches of the limbs. By close observation, they may be detected by the frass or sawdust that is pushed out from the burrows. They leave winter quarters about the time the leaf buds open, so if the spraying is done as late as possible before the blossom buds bloom, the larvae are killed.

But to accomplish this, the liquid must be forced into the rough bark under a pressure of 150 to 200 pounds and the nozzle held close to the bark.

Curl Leaf.—It is equally important at this time to thoroughly coat the twigs and small branches for curl leaf and peach blight control.

Almonds.—Almond growers have very generally neglected to spray and many almond orchards are severely infected with peach blight. Where neglected, almond trees should be well pruned and the fall and spring treatment applied, as indicated above.

Apricots.—The shot-hole fungus of the apricot is so similar to peach blight that all apricot trees should have this treatment. In fact, all deciduous fruit trees would be benefited by a thorough application of the lime-sulphur spray while the trees are dormant. These two sprayings then are the most important a peach, almond, or apricot grower can give his trees and should not be neglected under any circumstances.

Rain.—An unusual amount of rain after the blossoming period may necessitate a third spraying. In this event, after the fruit is well set, Prof. Smith recommends Bordeaux mixture composed of three pounds of quick lime, two pounds of bluestone and fifty gallons of water. Spray followed by rain within 24 hours should be repeated.

TREATING ROOT APHIS ON PEARS.

To the Editor: In your issue of January 1st in article headed "Inspect and Treat Roots," your writer says, in reference to the woolly root aphis: "It may be easily killed by washing dirt off and dipping the roots in a mixture of Black Leaf 40, one pint per 200 gallons of water."

Sorry to say that this treatment is not efficacious in all cases, and unless a correction of this statement is made growers will be lulled into a false sense of security where trees have been thus treated. The dense masses of pear root aphis clustered among the fibrous rotos are often so protected by their woolly covering that mere dipping will not cause the liquid to penetrate the protective covering. Professor Gillette of Colorado emphasized this fact in his address at the Palo Alto fruit growers' convention last July.

Every pear or apple tree that leaves our nursery is sprayed under pressure of from 150 to 200 pounds with a strong solution of Black Leaf 40 and whale oil soap, the high pressure being necessary to break down the woolly covering and reach the aphids beneath. In the foothill belt the root aphis on pear is doing more damage than blight. When once established in an orchard eradication is almost impossible, therefore nurserymen must make every effort to send out trees so treated that they cannot possibly carry this pest. **A. L. Wisker.**

Grass Valley.

BAND WALNUTS FOR CODLING WORM.

[Written for Pacific Rural Press.]

Codling moth worms have only recently become a serious pest of the walnut. In 1914 some districts lost 25 per cent of the crop. According to Santa Barbara county horticultural commissioner C. W. Beers, there was considerable damage in that county in 1914, especially in one district about 1 by 1½ miles in extent. The season of 1915 was 10 to 14 days earlier, so that the lack of damage is presumed to be due to hardening of the nutshells before larvae arrived. Every district and most of the orchards were examined. Some nuts were found with as many as five eggs on the shuck; the larvae had pierced to the shell in many cases; but only where blight had weakened the shell and spoiled the nut already, did the worms get in.

The remedy is not spraying, if bands are placed around the trees in time. The larvae will crawl up the tree in springtime according to Mr. Beers, and they may be trapped under overlapping burlap bands placed tightly around the trees just below the crotches. This prevents whatever larvae may climb that high. They may be removed and killed periodically. Banding should be done as early as possible.



Good Bye! Mr Gopher

-and it's so easy! No bothersome traps—no uncertainty. Simply locate the tunnel, place in it a waste ball saturated with Kilmol. In 3 minutes ignite and cover up the opening with dirt. The deadly gases quickly reach every part of the burrow and it's good-bye, Mr. Gopher!

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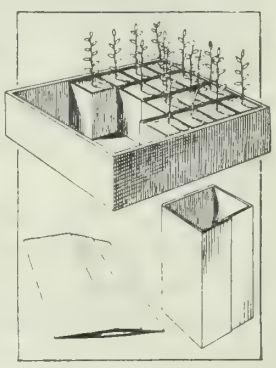
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Prune Growers Enthusiastically Organize

A mass meeting of over 600 growers adopts the form of organization submitted by the Prune Growers' Committee of 1915.

[Editorial Correspondence.]

San Jose, January 19.

The convention of prune and apricot growers, of which our columns have carried announcements for several weeks, assembled in a theatre auditorium in this city this afternoon. There were at least 900 present, and they were enthusiastic throughout in approving the work done by the Prune Growers' Committee during the last year and in approving the plans for further organization proposed by the committee. The attendance was largely from the Santa Clara Valley, but delegated representatives were present from the counties north of the bay, from Sacramento Valley and from Southern California.

J. H. Bone, chairman of the growers' committee, presided, and H. O. H. Shelley acted as secretary and presented the committees' report of the tranactions of 1915, which was approved.

Dr. Coleman of Cupertino made a stirring address, outlining the situation in prune packing and selling, expressing satisfaction with the achievements of the growers through their committee appointed last year, and urging more definite, formal and state-wide organization. He expressed the favoring attitude of the Santa Clara growers toward such an undertaking, based upon the experience of the past year.

Other speakers also approved and advised organization, including Dr. Lawrie of Napa, G. H. Hecke of Woodland, and others. Dr. Lowrie stated that Napa growers selling through the Farmers' Union, received $30 per ton more than outside growers, and urged organization. A speaker from San Benito county stated that the growers of that district had set a meeting for Saturday to take action in accordance with the recommendtions of the convention. Letters were read from prune growers in Sacramento, Sonoma and Butte counties.

Mr. Merrill presented a report prepared by a sub-committee recommending an organization to be known as the Prune and Apricots Bureau of Information, to be composed of growers of the fruits named and to be financed by assessment upon the output of growers as the Bureau shall itself decide. The policies and transactions of the Bureau are to be defined and discharged by a Central Committee consisting of thirteen members, of whom six shall be selected from the districts of the Santa Clara district (including Alameda, Santa Clara and Pajaro valleys); and one each from the Sonoma, Napa, Sacramento and San Joaquin districts, and one selected by the State Market Director.

Col. Weinstock, State Market Director, addressed the convention at length, approving the report of the committee in providing for a Bureau of Information, but advising the growers that much more than that was necessary to protect and promote the prune product as its necessities required and its opportunites merited. His plan would include standardizing and inspection so that a state label could be used; the warehousing of the product so that certificates would be accepted as security for advances and loans, which he believed could be had at as low rates as the best millionaire-securities commanded; a distribution system of the product through auctions held in leading eastern cities at such stated times as were found desirable. To do these things he advised the formation of a corporation with a capital of at least $250,000 and the signing up of a satisfactory percentage of the product.

Col. Weinstock's address was pointed and eloquent and commanded the favor of the convention. It was, however, so different in its nature and scope from the proposition made to the convention by the committee of 1915, that it was decided to adopt at once the commendation of the committee and to hold another convention, as soon as found practicable, to consider the subject of a fuller and stronger organization as outlined by Col. Weinstock.

The report favoring the organization of a Bureau of Information, as mentioned above, was then put to a vote and carried by the convention without opposing vote.

Upon motion, B. W. Folk, S. G. Cooley and F. C. Willson were appointed a nominating committee, to name members of the Central Committee of the Bureau. They reported as follows: Santa Clara District, J. H. Bone, R. P. Van Norden, H. O. W. Shelley, S. E. Johnson, C. H. Warren, John Garner; Sonoma District, J. E. Metzger; Napa District, Henry Wheatley; Sacramento District, W. A. Yerxa. Other districts, in San Joaquin and Southern California districts, were to be represented later.

These nominations were approved by the convention and the parties named are entrusted to proceed with the organization of the Bureau of Information as contemplated.

There was keen interest and confident feeling throughout the convention and much satisfaction expressed with the progress of organization so far as undertaken.

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California Free Library Service.

[Some of its Activities of Value to Farmers.]

[Written for Pacific Rural Press by J. L. Gillis, State Librarian.]

The chairman of the Board of Supervisors in one of the richest and most populous counties in California recently said of their county free library: "It has become one of our permanent institutions, rooted deep into the very foundation of things." And their county free library had been in operation only a little more than two years!

And how is this enthusiasm accounted for? By the economical, equal and complete service which the county free library aims to give. In the article last week it was explained what the county free library is,—how its headquarters at the county seat are the distributing center for library material for that county and the connecting link between the people and the State Library; how from branches in every community in the county the people have access to as complete a library service as the resources of the State and county can supply; how the supervisors have the power to establish the library and appoint as librarian some one trained and certificated for the work; and how it is the business of the librarian to build up an economival, equal and complete service.

The forms of activity through which such service is given are numerous,—always interesting, often spectacular. Of course, the most frequent are the general community branches, where library service has long been as much wished for as school service. But school service seemed more imperative. The children were there! Custom demanded that there be a school to send them to. But a library? "If the people wanted books let them buy them!" The same thing was said fifty years about "schooling." "If he wants his boy to be educated, let him hire a teacher. Why should the rest of us help pay for it?" Co-operation changed that idea. And now co-operation has changed the library idea.

Broadly speaking, branches may be divided into two classes,—community branches and school branches. The community branches alone of the California County Free Library now number over seven hundred. This means that each community is a branch of the county free library, from which it receives its library service. Each branch has its supply of books and magazines made up both in kind and number as the needs of the place demand. And those needs are as various as are the occupations, industries and types of people. The man in the oil fields is glad to have books telling of the oil industry. At first he wasn't. Books on oil were sent back with the remark, "We see enough of that without reading about it." But interest increased, and in a few months, those same books were again asked for, and used till they resembled their topic in color.

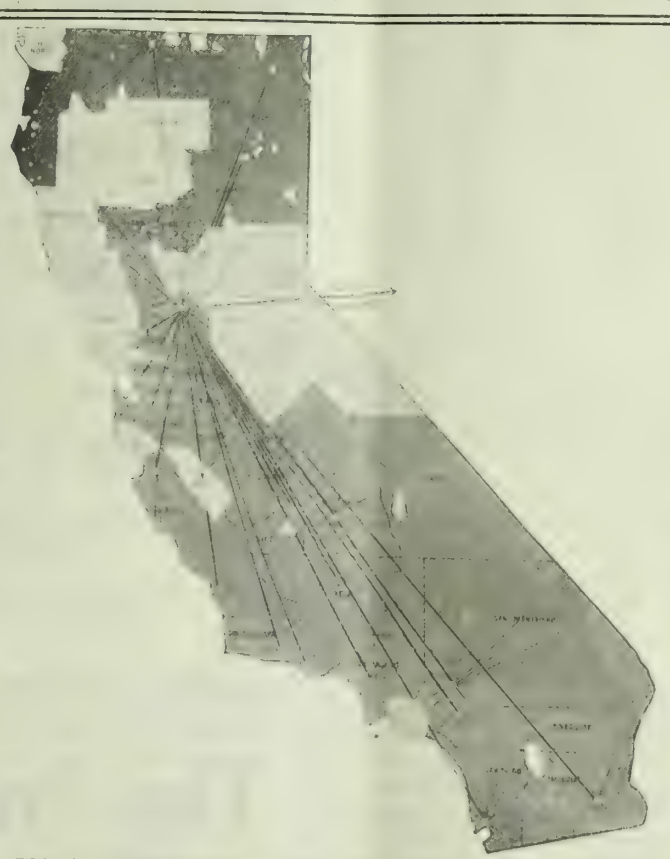
The cotton grower in the Imperial Valley wants everything written on his particular pursuit. The county free library builds up a working collection of such books on cotton as will be read generally. But the man who wishes more than the county has, will have his need supplied free from the State Library. The employees in the lumber town find a great satisfaction in reading up on woods. In the sugar refinery town the people have a live interest in books on that subject. The branches in farming communities are kept busy supplying the books in constant demand on every farm subject,—alfalfa, hogs, dairying, fruits, vines, as well as on rural social and economical problems.

Other community branches verge almost on to the spectacular because of their special interest. One has been placed on a municipal recreation pier of a summer resort, so as to be accessible to the summer crop of visitors who are the town's asset. Many of the branches typify the purpose of the library to be of "service to everbody," by being located in foreign colonies, — the Swedish branches in Contra Costa and Fresno counties, the Armenian and Negro branches in Tulare, the Portuguese in Merced, the service to Germans in Sacramento,—these are only a few instances of the work the county free library is doing with foreigners.

Then there is the branch in a light house, another out in a borax mine, one in a power plant, one in a harvester camp, where in one month over 500 books and magazines were loaned out to the men. County jails and county hospitals are always among the first places to receive a branch, as the people there are especially in need of library service. Another unusual example of location is a million acre ranch (most of it in Mexico), where the employees are mostly foreigners, and many of them are making use of the library books to help them learn English.

Not only to the foreigner is the unusual or the special service given. Women's study clubs are helped, both in the planning of their programs and in procuring material for them. Chambers of Commerce and other Civic Improvement Clubs are taking advantage of the resources of the county free library and its branches. People taking up university extension work and agricultural study clubs find the county free library an almost indispensable institution. The farm adviser too is able to recommend the books he wishes read and have them furnished by the county free library. Municipal libraries which have joined (towns with libraries are not included in the county free library unless they wish) find the county able to supplement their service, and the town library thus gains a greater prestige and becomes a stronger factor in its community's life because it itself is made stronger for service.

Such are a few of the activities of the county free library in giving service through general community branches.



This is a reproduction of the huge county free library map hanging in the Ferry Building, San Francisco

Counties that are darkened have established county free libraries. White dots indicate branches; small black lines represent service to the branches from county headquarters. Broad black lines represent State library supplemental service. Arrow toward the East represents supplemental service from the larger libraries there and from the library of Congress.

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King Cotton Invades California.

Cotton has proved a highly profitable crop in Imperial Valley where the acreage has leaped to 45,000 in the five years since the first commercial crop was grown.

[Written for Pacific Rural Press.]

King Cotton has conquered a new domain, Imperial in extent and name. He has gained in stature and capacity by the conquest. Withal, his newest subjects are most hearty in allegiance, while many from his older realms have hastened to populate the fertile 300,000 acres of available irrigated lands in the new domain. Those from the older sections have brought preconceived ideas drawn from their experience under different conditions. In many cases this has prevented the best development of the new country. Those who have undertaken cotton growing in Imperial valley, with open minds to get the benefit of the government's expensive experiments, are planting the long staple upland variety called "Durango." They are employing methods of culture patterned after the experiences found most profitable by the most open-minded progressive growers. These methods are still changing, but they tend to produce a uniform staple 1 3-16 to 1 5-16 inches long which commands a premium of as much as 5 and 6 cents per pound over the short staple 1 to 1 1-16 inches long, according to E. A. Perkins Jr. of the Cotton Growers' Ass'n.

Great Yields.—Moreover, our friends in the old cotton States who are delighted with half a bale to the acre will scarce believe the fact that a number of Imperial Valley crops have averaged two bales per acre, and one bale is generally considered only fair. The yields for the valley mentioned below are of course reduced by ill-considered and ill-attended plantings.

Argyle McLachlan, president of the Imperial Valley Long Staple Cotton Growers' Association, says flatly, "It is economically unsound practice, as well as unnecessary, to grow less than a bale of cotton to the acre in Imperial Valley." Since he, as representative of the U. S. Dept. Agr., is largely responsible for the multiplied numbers of King Cotton's enthusiastic subjects here, having been the leading figure in the introduction of Durango, and having been in the cotton growing game since it started here in 1902 right after irrigation was brought to the valley in 1901, he speaks with authority. He is one of the few who "rogue" their fields systematically to eliminate all volunteer and foreign varieties so that pure seed may be furnished to Association members. "Roguing" is simply cutting out every plant except Durango, when they are well leaved out.

First Commercial Crop in 1909.—A few Valley farmers who co-operated with the government, grew small quantities of several varieties of cotton through the years after 1902, until in 1909 the first commercial crop was ginned by temporary machinery. This consisted of 350 bales from 450 acres. Some 1200 acres had been signed up co-operatively, in order to justify installation of a gin, but some failed to plant and some failed to pick. Among those who contributed to the 350 bales was F. W. Waite, now county horticultural commissioner. He picked an average of ¾ bale per acre from 55 acres as the result of his amateur planting. W. E. Wilsie is another pioneer, and he will plant 500 acres next season. Mr. McLachlan has since left the government service and bought a ranch on which some of the best cotton in the valley is grown.

Co-operation.—Long staple is being stimulated by the association previously mentioned. This Association is purely a co-operative, non-profit marketing agent for the growers, on a similar plan to the Cal. Fruit Growers' Exchange. It handles about a fifth of the crop and has stood ready to buy all cotton offered by growers, at prices which have kept the numerous independent buyers from depressing the growers' prices.

A warehouse was provided under bonded management and loans of $40 to $50 per bale were secured on warehouse receipts according to Mr. McLachlan.

Marketing.—The Association takes a large representative sample from each bale, labeling it according to grade (color, and quantity of leaf pieces and dirt) and length of staple. The cotton is sold to new customers by sample, while to old customers, it is sold according to the Association's grade. Mr. Waite notes that Imperial Valley short staple com-

IMPERIAL'S SPECTACULAR GROWTH IN COTTON.

In 1910, 4,000 bales were ginned. In 1911, three bales of long staple were produced, helping to make the 9,000 bales from 12,000 acres. The 1912 crop was 7,200 bales from 8,360 acres, reduced because of low prices for the preceding crop. It included 150 bales of long staple and 100 bales of Egyptian, a variety with a 1½ inch staple, but which has proved ill adapted to Imperial conditions. Some 21,000 bales were produced in 1913 from 21,000 acres, nearly a bale average for the whole valley. The 1914 crop was 44,697 bales from 38,000 acres in Imperial county and 32,000 on the Mexican half of the valley. Some 20,000 acres failed that year for lack of water, sand storms, lack of ditches and finances, oversupply of aphids, crickets, grasshoppers, etc.

Loss from over-planting by inexperienced growers, ill-conservation of water, poor preparation of land for irrigation, etc., put a crimp in the 1915 planting, which was about 15,000 acres on the American side and 30,000 acres on the Mexican side. At this writing, January 14, there is still much in the fields to be picked.

The production of long staple increased from 150 bales in 1912 to 6,000 in 1913, and 8,000 in 1914. Of 600 growers in 1914, 150 were producing long staple.



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manded in 1914 a premium of $3.65 to $5 per bale (500 pounds) over that from any other section. This was largely due to the Valley's immunity from the storms that swept other sections while the previous crop was in the field. It was also partly due to the uniformity of staple (fiber) length due to control of moisture and general uniformity of conditions through the Valley.

Community Uniformity.—Mr. McLachlan points out the great advantage in marketing, which a community has where a uniform standard staple, type, and grade are grown in sufficient quantities to command attention from buyers. This can only be accomplished by adoption of a variety which tends to uniformity, and then by application of uniform cultural methods throughout the community. He believes that the variety most desirable is the long staple upland "Durango."

Many of the growers are from the older cotton states where long staple varieties have not yielded so well as short staple—hence the short staple production last year was four times as great in the Valley. But each year sees a greater acreage of Durango which really yields almost if not quite as much as the short staple Mebane which has become standard here.

Long Picking Season. — Another advantage of the Valley pointed out by Mr. Waite is the long picking season and the early planting possibilities. The first bale ginned in 1913 was July 23, in 1914 a bale was ginned at Calexico June 17 and the seed produced another crop that year. The first bale, however, came from volunteer plants. There is a practice of simply cultivating the old roots to get two or three crops without replanting, but Mr. McLachlan discourages this because it decreases yield in general, especially if practiced several years, and produces a staple which lacks uniformity. The picking season sometimes extends into Feb. because there is very little rain to injure or color the fiber.

Cultivation.—The general system of cultivation for Mebane cotton is as given by R. W. Bray of Dixieland, who says he produced 144 bales on 100 acres one year, and over 100 bales on 78 acres another. He was formerly a cotton grower in Ark., S. C., and Mo. Irrigate well, after leveling and before plowing time, which comes in March. Then run a four-horse lister through 6 to 10 inches deep throwing the ridges back into the furrows until the ground is thoroughly fined and left in ridges. Plant seeds 2 inches deep on top of the ridges and 3 to 10 inches apart, two rows at once with a machine practically like a corn planter. If the weather is warm, so the seed should come up at once, irrigate lightly right after the planter, not getting water within a few inches of the tops of the ridges. It comes up in 5 or 6 days and must be "chopped" out with hoes, when 2 or 3 weeks old, leaving stalks about 18 inches apart. Irrigate every 20 days from May through Sept. and cultivate often enough to keep weeds down. He cultivated his last crop at Dixieland only once. Some people are planting on the sides of broad, flat ridges with furrows between for irrigation. The seeds are planted half way up on the sides of the ridges so there are two rows of cotton for every furrow. This saves labor in irrigation and cultivation, and keeps the plants away from the alkali which is deposited mostly near the tops of the ridges and is more or less harmful, as in all arid countries. Mr. Waite says people are learning to plant either in March so the plants will be big enough to resist April winds, or in May to avoid those winds. They are learning also to use much less water, with advantage to the plants.

Few Pests.—Boll worm and weevil are unknown and strict quarantine is maintained to prevent their introduction, for Mr. Waite believes that where the host plant thrives, its diseases will come if allowed.

Gins.—A temporary gin was erected in 1909. Next year there were complete gins in five of the towns. In 1913 there were 8 gins, in 1914 there were 19 gins, half of which were at Calexico to care for the greatly increased crop on the Mexican side.

A greatly increased acreage will be planted in 1916, the Imperial Valley Press of El Centro enthusiastically claiming knowledge of 125,000 acres.

PRUNING THE APPLE TREE.

The months of February and March are the best months for heavy pruning, and the following suggestions may be helpful:

In removing large branches, make a smooth cut close to the stem or branch from which it is removed. Stumps left invite fungi and decay.

In reducing the height of the tree, or dehorning the tree, never leave naked stumps, but cut to a leader. This means that the side branch still would take the place of the center leader removed, and the tree would not look as if it had been dehorned.

If systematic pruning is done from year to year, there should be little occasion for the removal of large branches, as they would then have been removed when small.

Heavy winter pruning generally encourages the growth of watersprouts or suckers, and unless these are removed as soon as they appear, the amount of pruning to be done the following year will be greatly increased.

A good fruit grower will prune at all seasons of the year, for every time he walks through his orchard and sees a branch or a shoot out of place, he removes it. By such practice, winter pruning is largely dispensed with. The necessity for heavy winter pruning arises from the fact that the trees were not properly shaped and pruned before they reached the bearing age, and if the pruning and shaping has been carefully attended to up to the time the trees have reached the sixth year, the subsequent pruning would be very little. It is the neglect of the young growing trees that makes the winter pruning so heavy in later years.

E. P. Sandsten.
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What Should California Do for Bread?

(Continued from page 89.)

fornia fell into wheat at first just as all other new countries do and found out later that her wheat was in particular request because of its whiteness and softness and its blending well with the dark, harder wheats which Mediterranean and our Atlantic ports were sending to Great Britain and the north of Europe. The war of the early '60s assured good prices and California entered the list of wheat-supply countries under most favorable conditions. By 1865 the farm value of the California annual wheat crop was about equal to her annual gold product and for about 40 years continued to be greater—in some years even to doubling its value. It is really probable that, if one had the summaries, he would find that the single cereal wheat had brought to California during its export career of four decades as much value as the gold output has, from the discovery to the present day. Naturally so potent an agency, influencing life, labor, trade, invention, manufacturing, transportation, etc., has not only played a very important part in the development of California, but has shaped it to its own needs and uses. In a way, the point of view of the wheat era was born of the mining era and fitted itself to be the successor to it. As developed in California the wheat industry had an eye which could see great—as the mining industry had. It made and unmade millionaires, both in its production and in its trade. It filled the bay of San Francisco with wind-jammers, tramp steamers and other craft until the masts fairly bristled along the wharves, or the hulls were anchored in aisles or sat on the mud flats like tubs. No industry has ever peopled the harbor with ships as the wheat business did and no transportation gambler has ever made and lost so much money in any craft as in ships for wheat. Similarly, on land, no farm product has ever gathered land into such ducal areas or moved over it such capacious machinery of production or broken up so many men by its lure into speculative production or trade as has wheat. Nor has any farm land been so blackened by tragedy born of the worst passions of men as has land for wheat. In this respect also it links itself with mining in producing literary masterpieces of tragedy: for, as Bret Harte made a unique literature on the basis of California mining, so Frank Norris made, on California wheat-growing, "The Octopus," held by some critics to be "the great American novel," though he did smother his villain in a grain elevator on Carquinez straits where, to this day, there has never been one.

But we are manifestly swinging too far toward the dark side of the export wheat era. It also wrought many good things into the development of the State. It hastily subdued a vast area of wild lands which have recently been largely turned to more productive uses—to fruit planting and alfalfa growing, the latter the basis for large dairy production and for the chief part of the wonderful progress which has been made in improved livestock enterprises, for the most notable achievements with better horses, cattle, sheep and swine have been secured on lands farmed for export wheat. Wheat-growing also threw much land into good hands and the wheat trade furnished much wealth for city building. Its effect upon the development of good citizenship was also notable. Though it did wreck many families by the spirit of gambling and allied dissipation which it engendered, it stimulated a broader view of farming in others and many of the best of our second generation farmers, mentally well equipped and adequately capitalized, are the sons of the old wheat growers of three or four decades ago. It is to the wheat industry also that must be credited the most notable of the older farmsteads which one sees from train or highway—large, two-story, bay-windowed residences, generally gleaming white. As rural residence structures they are a misfit it is true, and yet it was natural enough that the builders, to emphasize their escape from cabin-poverty, should yearn for as much contrast as possible in the homes of their prosperity. And so they built white castles which could be seen from half the width of the great valley—monuments to money made in wheat or to the advance in value of lands cheaply secured for wheat growing—lands which sometimes repaid the purchase price with the first crop they bore!

An Appeal to the Prophets.—As we cannot depend upon the film artists to portray the stirring scenes we have hinted at, we appeal to the prophets to interpret their significance.

At the opening of the first "permanent" pavilion of the State Agricultural Society in Sacramento, in 1860, it was announced that "samples of California-grown wheat sent to the chief agricultural societies of both hemispheres elicit the most unqualified testimony to its great superiority—which testimony is sufficiently corroborated by the price it brings in foreign markets whither the farmers have, from the last harvest, shipped already a very large amount to various parts of the world." And the late Hon. John Bidwell, rising to this momentous fact, said this:

"From 1848 to 1853 we were dependent upon importation from abroad for almost everything — including the staff of life. In 1853 we imported 498,740 barrels of flour. How stands the case now? We are able to export half a million ourselves. In 1853 we imported 80,186 bags of wheat—now the scales have turned and we are able to export. Our success in raising to the greatest perfection this the most valuable staple of the world involves the momentous question of our capacity to augment the production with the increasing demand for the staff of life till we prove to other lands what we have already begun to exhibit, and what we can justly claim, that ours is the granary of the Pacific hemisphere." And five years later, at the State Fair of 1865 gave a confirmation of his forecast in these words:

"The soil, climate and many other features of California are unsurpassed. It is a region of wonderful variety and production. The cereals are here produced of superior quality and in larger quantity per acre



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than in any other part of the United States. It would be a poor farm indeed, and poorly cultivated at that, if it failed to yield twenty-five bushels of wheat and thirty of barley or oats per acre. Fifty bushels of wheat are no uncommon crop and other grains in proportion."

In 1888 Justice N. P. Chipman, now of the California appellate court, said this: "Wheat growing in California for the markets of the world is at least precarious: average production per acre is diminishing; fertility of the soil is diminishing; we are at a disadvantage with our competitors by reason of their cheaper and better facilities for transportation. I am prepared to see Great Britain supplied from other sources within the next ten years. Lands no longer profitable for wheat-growing should be turned over to grasses and forage plants or should be planted to fruits."

In 1894 Hon. Horace Davis of San Francisco, then at the height of his activity in the milling industry of California, wrote these words: "Wheat export is the resource of a new community and of wasteful farming. I grieve to see the state wearing out its soil to give cheap bread to Europe, and every new product that can be raised profitably gives me new satisfaction. Smaller holdings, with diversified farming is the indispensable condition of prosperity here.. And I look forward to the time when this huge bulk of wheat shall be cut down one-half and for it we shall substitute a hundred different products requiring more labor, more skill, more industry and returning us more profit and greater prosperity."

All these prophets spoke true words and saw their predictions realized. General Bidwell lived long enough to see California become the leading wheat state in the Union, over Minnesota, her rival of that time, and to see her produce, in 1878 and 9, two wheat crops with a farm-value for each of over $43,000,000—more than twice the value of the California gold output for each of those years. General Chipman and Mr. Davis still live to enjoy the California advancement which they foresaw as the result of choosing other products than export wheat. In General Chipman's prescription of forage plants as a substitute for wheat we find a prophecy of the greatness of alfalfa. As we remember the utterance, his associates regarded it as a dream and not a particularly good one, either. But it surely has come true.

Problems of the Present Day.—It seems to us clear that wheat growing as pursued during the last half century is a closed chapter in California history, but what will follow? Shall we resume production of wheat for export? That depends upon what the world will pay for wheat; or, rather, what it has to pay for wheat when its needs are measured by the producing capacity of more recently opened producing regions in North and South America and the possible expansion of production in Russia, in Asia and, for aught we know, in parts of Africa. Certainly if the world's need is great enough to make a price, California can contribute to the export trade in wheat with less handicap than ever because of carriage shortened and cheapened by the Panama canal. And it may be of advantage to the state to enter again the old competition, striving to recover, by better tillage and fertilization, the acre-product which nature gave her half a century ago. It seems probable that California would have land for it which other uses of land might not call for for a century or longer. Some of the large areas to be reclaimed by river improvements now in progress may like to score in wheat and some of the deserts moistened by projected irrigation enterprises may also like the same recourse. Besides there are vast areas of uplands which can be won from wild pasturage by better tillage and the use of fertilizers. Then too if the fierce experience of Europe should make permanent prohibition policies which are now being tried as war measures, and if American prohibition should also proceed as seems likely, there would be a certain amount of the beer taken out of barley and our present product of twenty-five to thirty million dollars, farm value, might have to be shorn down to stock-feeding requirements. Then wheat, if profitable, would return to much land area convenient for cereal production and not required for other crops. But these are all speculative affairs into which one cannot surely see very far. They are all, however, what one might call real possibilities.

Something More Clear.—There is, however, one thing which is clearer and toward which this rambling discussion has been steadily tending, and that is: Should California grow her own bread or continue to purchase a considerable, and perhaps an increasing, part of it from other wheat-growing regions? To this question we have a firm conviction that the proper answer is that California should grow more wheat, and should buy less. Let us make suggestions toward that end:

First: No matter how great our population becomes and no matter how great our intensive special industries, with fruits, vegetables and live stock, may become, there will always be land for wheat. Coast valleys and uplands, interior valleys and foothills, mountain valleys, lands reclaimed by drainage, lands protected from drouth by irrigation or by rainfall conserved by tillage—everywhere in fact, up to a certain elevation, wheat can be successfully grown, if the right kind of wheat is grown in the right way.

Second: No matter how densely populated a civilized country has become wheat always retains its place in the agriculture of it; and this is true although wheat is usually the first offering of a wild, new country to the world's trade. The friend of a country's youth does not forsake it in its advancing age. Take a few of the countries which depend most upon importing wheat, and note what part imported supplies of wheat comprise of the total consumption in each case:

Great Britain, three-fourths imported;

Germany, one-third imported;

France, one-ninth imported;

Italy, one-fourth imported;

Spain, one-fifth imported;

California, One-half Imported.—Great Britain is in a class by herself because of large population of trading, manufacturing and leisure classes and enforced idleness of so much land. The other countries are better instances of small farms and intensive agriculture and they are largely producing their own wheat, as the fractions show. In their cases the grain is produced chiefly as a part of the output of small and diversified farming. Of the several countries France most resembles California in area and farm products, and to support her population, which is fifteen times larger than ours, she only needs to import one-ninth of her bread-requirements, although she is giving so much land to high-class, special soil products like those California is developing. France is

(Continued to page 106.)

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345 S. Main St., Los Angeles.

Mechanical Power on the Farm.

[Written for Pacific Rural Press.]

WHAT SIZE ENGINE?

To the Editor: I am expecting to purchase a small power outfit to shell corn, grind it, grind bone and also to saw wood and turn the washing machine. I have no part of the outfit yet and wish to get the most economical small outfit that I can. Might I do better to get a 3 h.p. engine? I know that the 2 h.p. engine will run as large a corn sheller as I want and think it would do for a grinder. Can I make it run a wood saw, even if I am careful not to crowd it? Could I throttle a 3 h.p. engine down to run a washing machine or grindstone without waste of gasoline?—R. E. Smith, Bishop, Cal.

[Answered by Prof. J. B. Davidson, University Farm, Davis.]

[A one-hole grain sheller will require about 1½ h.p. Feed grinders are made to consume almost any amount of power from ¼ h.p. up. The power consumed by any one grinder varies directly with its speed. The amount of feed ground varies also in like manner.

A wood saw for sawing fire wood where the logs are of considerable size, will require about 3 h.p. for successful operation. One-half h.p. will be sufficient for a washing machine and perhaps ¼ h.p. for a grindstone.

It would seem that if the correspondent has much wood sawing to do it would be best to have a 3 h.p. engine. This can be used to operate a feed grinder which will have such a capacity as not to require a magazine bin for supplying the unground feed. It is a waste of time to attend continually a very small feed grinder. No doubt it would be best to install a short line shaft with suitable pulley enabling several of these machines to be operated at once, thus saving not only fuel for the engine but also time for the operator.]

ARTESIAN WELL DRILLING.

A letter was received by the U. of A. Agricultural Experiment Station recently from a settler in one of the artesian districts of Arizona, stating that his artesian well had been drilled to a depth of 650 feet and cased with a three-inch pipe, and that a two-inch hole had been put down another hundred feet, which was the limit of depth possible for so small a diameter. The resulting flow was only eleven gallons per minute, which will irrigate from one to two acres of land only, and it neither permits of farming operations nor of proving upon the desert entry. The letter inquires how to transform the artesian well into a pumping well. In reply, it is stated by Prof. G. E. P. Smith that perhaps the best thing to do is to excavate a pit over the well to a depth of forty or fifty feet, to line the pit with concrete, to disconnect the three-inch pipe at the bottom of the pit and to place the pump suction at that depth. It may be possible to develop seventy-five gallons a minute, which is a comparatively small discharge. However, it is practically impossible to make a good pumping well out of the present well, and the present investment is wellnigh lost, since it is desirable now to put down a new and larger well.

It is a great misfortune that larger wells are not drilled in the first instance, inasmuch as the cost of drilling a six- or eight-inch well is not materially greater than the cost of a three- or four-inch well. The ideal way is to put down a 16-inch casing to a depth of 100 feet, and then put down inside of this big casing a smaller casing, say a 6⅝-inch, to the artesian strata. This gives a much greater opportunity to develop the artesian flow, but if the artesian flow is not sufficient, then a centrifugal pump of ample size and high efficiency can be lowered into the 16-inch casing, and the well can be pumped under the most favorable conditions. If the water-bearing strata are within 300 feet of the surface, then the 16-inch casing should be used for the full depth.

TRACTOR CONTEST AND USES.

We are advised by W. Kimball of the Pacific Metal Products Co., who handle the Ideal tractor, manufactured by the Union Tool Co., at Torrence, Cal., that several tests have been conducted by that company during the past few weeks to determine the relative merits of horse power and tractor power in farm operations.

One of the most interesting of these tests was a contest between the Webb brothers of Linwood, each of whom had 32 acres of virgin soil which they wished to plow. One brother used an Ideal tractor while the other satisfied himself with two five-horse teams.

The horses were worked at top speed while the tractor was sent on its steady grind. News of the contest spread throughout the district and crowds gathered to see the contest. The tractor gained from the start. It not only did the work cleaner and better but did it much cheaper and at the end of a day's work there were no hungry, tired horses in the tractor barn. The contest was an easy victory for the tractor.

According to Mr. Kimball the Ideal uses only a gallon of distillate an hour and the following list gives an idea of the wide scope of work the modern tractor will perform:

Pull up trees and stumps; pull land drag, scrapers, road scrapers, road grader, rollers and crushers, plows, disc cultivators, harrows, seeders, mowers, reapers and binders, thrasher, rakes, bean planters, bean thrasher and cleaner, potato digger, manure spreader; run ensilage cutter, silo fillers, hay hoist and loaders, hay balers, corn husker and shredder, corn sheller, run feed mills, alfalfa cutter, wood cutters, pumps, milk separators and haul wagons and trailers.

AN ERROR.

In the article "How to Figure Tractor Horse Power" in our issue of January 8, the example given should have been

Px Sx5, 280 ft / 3300x60 instead of Px Sx5, 280 ft / 350x60

REDWOOD TANKS

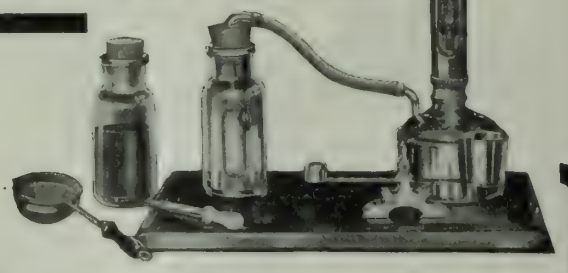


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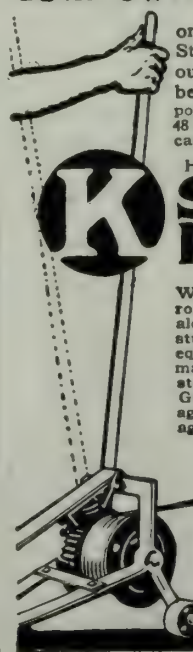
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WHY A DIFFERENCE IN POWER?

To the Editor: I am interested in gas tractors and read with interest, Mechanical Power on the Farm in your paper. I bought a Samson Sieve Grip tractor in September, 1914, and sold my six horses which had previously done my work. When I had the tractor one year it had done all my work and enough outside to pay for itself. Of course I have not allowed myself any wages but counted all I paid out for hired help as I had to run it day and night when there was work to be had. It is a 12-horsepower pull at the draw bar, but there is one thing I don't understand, and that is why I can pull a 26-foot harrow (140 spike tooth) on high gear as easy as I can a plow of five 10-inch shares on low gear? The plow is a 12-horse load and it would take 12 horses to pull the harrow, but the tractor is only supposed to have six horse power on high gear, although it handles the harrow with ease. Perhaps some good reader could answer this question.—W. M. Lewis, Byron.

[Comments by Prof. J. B. Davidson, University Farm, Davis.]

The draft of a gang plow with five 10-inch beams or shares when plowing 5 to 7 inches deep will be in the neighborhood of 1000 to 1500 pounds. This will make a good load for the corerspondent's tractor when working on low gear. On the other hand the draft of a 26-foot spike tooth harrow ought not to be more than 600 to 800 pounds.

Harrows are light draft implements and it is not possible to load a horse as heavily when attached to a harrow as when attached to a plow, owing to the fact that walking over soft ground is more laborious than when walking over firm soil. Of course it is to be recognized that soft ground influences the power of a tractor as well as the power of a horse. If the harrow is attached closely to the tractor its draft may be somewhat less than when attached to a horse team. This is due to the lifting action produced by the close hitch. The harrow however, in the latter case, will not do as much work in pulverizing the soil.

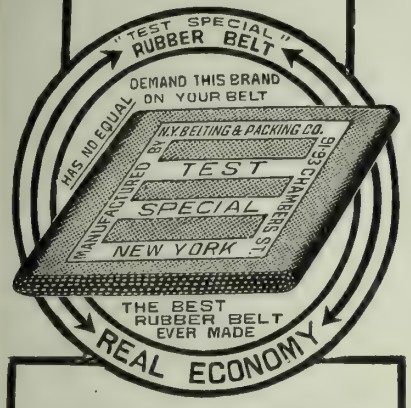
STARTING ENGINE.

Try starting without priming. Try priming it, then crank. If it does not start, we suggest that you open the pet cocks in the end of each cylinder and turn engine over until the surplus oil has been blown out. Prime it again and crank. If no result is obtained, remove spark plug wires, hold them about one-fourth inch from the plug, turn engine over and see if you get a spark. If not, we suggest that you start looking for the cause at the dry cells or batteries. Test them, and if below 12 amperes you will have found the cause. If you can trace the spark to the magneto and not to the end of the spark plug cables you will know that it is in the cables, and they may be either oil or water soaked. You may find that the breaker box should be thoroughly wiped out—there may be too much oil in it. If your engine starts to skip don't jump to the conclusion that it is the carburetor adjustment or magneto trouble. The chances are that it is caused from water in the gasoline. Open the pet cock in the side of the carburetor and drain off a little. If this don't do it, you had better examine the gas tank and gasoline feed pipe leading to the carburetor from the tank and see that it is not stopped up. At this time of the year you will find more water in the gasoline than in the warmer season. This is on account of the colder weather, which causes the tank to perspire, both inside and outside.

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General Agricultural Review.

DECIDUOUS FRUITS AND NUTS.

W. H. Street is planting 800 cherry and almond trees on his ranch northwest of Lockeford.

There are 7,000 acres of fruit in San Luis Obispo county, including 3500 acres at Atascadero.

L. M. Washburn of San Jose has leased the Sargent orchard near Gilroy for a period of 10 years.

San Jose men are contemplating the erection of a cannery at Hollister, which is badly needed there to care for the fruit of that section.

C. C. Woodruth has recently purchased 80 acres of land north of Acampo which he is planting to almonds.

A total of 55 acres of almonds will be planted near Porterville the coming season. This is a comparatively new crop for that section.

The New England-California Co. are making arrangements to plant 200 acres of almonds and olives on their ranch near Ripon this spring.

Several farmers in the vicinity of Orland will plant prunes this spring. This is the result of protable yields in the older orchards of that section in years past.

The U. S. Department of Agriculture leased 15 or 20 acres of walnuts last fall for a long term of years so that a thorough study of blight may be carried to successful conclusion.

G. A. Nehrhood of Paso Robles is exhibiting almonds from an old neglected orchard seedling which bore 128 pounds last year. They are rather small but well filled with meats of fine flavor.

Peach root borer has been found in some of the nursery stock that has been shipped into California from Oregon and horticultural commissioners are closely inspecting all trees from that State.

The Goleta walnut house of the California Walnut Growers' Ass'n handled about 900 tons the past season, despite the worst visitation of blight ever experienced. About four tons were from budded trees.

The heavy frosts early in January froze the tops of the year-old fig trees in Merced county and about one-third of the acreage was set back a year as a result. The orchardists of that county are busy pruning their trees at present.

Sufficient acreage will be planted this year to insure the establishment of a big green fruit shipping section around Oroville in the future. It is believed that this year will see the total acreage of shipping plums brought up to 150 or 170 acres.

Orchardists in the prune district of northern Sonoma county are making heavy plantings of prunes this year. A report from there says that there will be 2,000 acres of that fruit set out this spring. About one-third of the trees will be Imperials.

Acocrding to figures given out at Paso Robles the orchard acreage in that section will be materially increased the coming year. A total of 1626 acres is to be planted. Almonds lead in popularity among the new growers, followed by prunes.

In a statement made at Fresno last week, W. D. Bennett, sales manager for the California Fruit Exchange, announced that that concern will endeavor to organize the San Joaquin valley districts this year and that they have already appointed a manager for that section.

It is estimated by nurserymen that the acreage of fruit trees planted in the Lodi section this year will exceed that of previous years, because of the fact that many vineyardists are planting fruit trees among their vines. Cherries, plums, pears and almonds are the varieties being mostly used.

The Texas Prolific at Paso Robles blooms three weeks later than the Nonpareil, I. X. L. and Ne Plus Ultra, according to Carl Nichols, the recently appointed horticultural commissioner. This makes the Texas variety available as a pollinator so Drake Seedlings are being planted for pollination.

VINES AND RAISINS.

Extensive plantings of vineyards are being made in the vicinity of Tudor, Sutter county.

According to E. M. Sheehan of the State Viticultural Commission, there were 124,000 tons of raisins produced in 1915, compared with 90,000 tons in 1914.

A consular report from Valencia, Spain, states that the November estimate of the Denia raisin crop of 10,000 tons was high and that the crop will not amount to more than 6,000 tons and may not surpass 5,000.

The vintage of wine in France last year was only about one-third as large as that of the year previous, there being approximately 477,000,000 gallons made there last year. The French government reports old stocks in hand at 185,000,000 gallons.

Raisin growers who belong to the California Associated Raisin company have better credit than those growers who go it alone, according to bankers in the San Joaquin valley, who have great faith in the raisin association and have promised to do everything towards its advancement that is possible.

CITRUS AND SEMI-TROPICAL.

Secretary McAdoo has recommended to Congress the immediate appropriation of $300,000 to be used in fighting citrus canker.

The Teague-McKevett Lemon Co. of Santa Paula have purchased 40 acres of land which they will plant to lemons the coming season.

J. K. Catlin's lemon crop from old trees in Santa Barbara county was increased from 3000 field boxes in 1910 to 17,000 boxes in 1915 by pruning to renew fruitwood.

On account of the prevalence of the white fly pest, all citrus fruit trees shipped from Marysville will be inspected by horticultural commissioner G. W. Harney.

Tulare county will have shipped about 4125 carloads of oranges before the season closes. Of this amount 1823 cars were sent from Lindsay.

According to a consular report Winnipeg, Canada, uses about eight carloads of oranges weekly from December 1 to April 1. Florida oranges are being pushed in that market.

Reports from Riverside and Redlands indicate that the orange crops there are of exceptionally fine quality. Picking is being delayed by rains but what is being shipped is running to large sizes.

Preparations had been made by the packing houses in Riverside to ship 100 cars of oranges last week if the weather had permitted. The heavy rains early in the week, however, stopped all picking and shipments fell down as a result.

The eight to one test of oranges which the Pure Food Bureau has been advocating is reported to have been killed in Congress last week. The bill was amended so as to give the Department of Agriculture control over shipments of grain and other non-perishable products.

L. R. Boedefeld, horticultural commissioner of Colusa county, has notified owners of citrus trees in that county that they will have to spray their trees for the yellow scale. Unless it is voluntarily done the county will do the work and charge owners for the work.

The orange crop in the Corona section is reported to be smaller than that of last year but it is believed that the difference in the size and quality of the fruit will more than make up for the shortage. There are but few lemons in storage at the present time.

Argument on the Citrus Protective League's case before the Interstate Commerce Commission will be held in March to recover the difference between rates as high as $30 per car on pre-cooled citrus fruit, and the $7.50 per car which was ruled in 1911 to be reasonable.

Notwithstanding the frosts which have visited practically all of the citrus districts of the State in the past two weeks, very little damage is reported from any of the large citrus districts. Smudging was general in some sections, but moisture from rains, the dormancy of the trees and the maturity of the fruit are all said to have been of great assistance in withstanding damage.

Deglet Noor dates have shown fine growth near Heber, Imperial Valley but have failed to ripen fruit satisfactorily because of the low, cool, moist, hard soil and air conditions. A representative of the Ex-

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WALNUT TREES—San Jose Mayette, Barry Mammoth—on California Black Root, at lowest prices. San Jose Mayette, Barry Mammoth and Franquette Grafting Wood for sale. California Black Seedling Trees. Write for our low prices. Mammoth Walnut Nurseries, P. O. Box 597, Watsonville, Cal. Nurseries at 80 Tully Road, San Jose, and Watsonville, Cal.

TRIBBLE NURSERIES, ELK GROVE, CAL.—Grafted walnuts and grafted paper-shell pecans. Exclusive propagators of Tribble, Mayette, Kerr Parisienne, Glady and Improved Franquette. 19 other varieties. Fine stock of almonds, prunes, Bartlett pear on resistant roots and other fruit trees and plants. New list ready.

CALIFORNIA GROWN SUDAN GRASS SEED—Absolutely free from Johnson Grass or other Weed seed. Plant all you can of it; for Broody Chicks and laying Hens or stock of any kind you can't beat it. 30 cents per lb. Write for prices on large lots. Lasher's Hatchery, Petaluma, Calif

CLOVERDALE NURSERY CO., Cloverdale, Cal.—(Resistant Grape Vines exclusively) Wine and Table grapes of all leading varieties grafted on resistant roots. Rooted resistant stock of all improved varieties for table and field grafting. Also cuttings of resistant stock.

1000 SACKS OF AMERICAN WONDER and High Top Burbank, clean seed Potatoes, from fields that produced 388 sacks to the acre, winning third prize in State Contest. Act quick as they will not last long. H. A. Hyde, Watsonville Nurseryman.

ORCHARD TREES, BERRY PLANTS, long on Gooseberries and Currants. To introduce my catalogue, I will send 1 doz. best bush and climbing roses for $1.50; 1 doz. different German Iris, Choice, for 75c. H. A Hyde, Watsonville Nurseryman.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

WALNUT TREES—Eureka and El Monte varieties a specialty; also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

EUREKA WALNUTS are the best grafted on native black roots. You'll be surprised at our prices. Write today—tomorrow never comes. Geyer Bros.' Walnut Nursery, 214 S. Almason St., Alhambra, Cal.

PAPER SHELL PECANS—Standard varieties—Success, Stewart, Frotcher, Delmas and Van Dieman. 7-8 feet, $2; per 100, $150. 5-6 feet, $1.50; per 100, $100. K. Fischer, San Gabriel, Cal.

RHUBARB PLANTS—Crimson Winter 1 year, per hundred, $2; 2 year clump, each 10c. Seed per pound, $3.50. Wagner's Giant, 1 year, per hundred, $3.50. Currier Bulb Co., Seabright, Cal.

SOUDAN GRASS SEED—Warranted free from Johnson grass and weed seeds. 30c per pound; 10 pounds for $2.75; 100 pounds for $25. I pay postage or freight. John Silbersack, San Martin, Cal.

FRANQUETTE AND MAYETTE grafted on California Black. Sizes 3 to 10 feet. Prices reasonable. Special discount on large orders. Sunset Nursery, 525 W. San Carlos St., San Jose, Cal.

FOR SALE OR EXCHANGE—1500 San Jose Mayette Grafted Walnuts. Six to ten feet. Price low or will exchange on light auto or good heavy team. Chas. Story, Rivera, Cal.

FOR SALE—Two and three-year-old Mission Olives, propagated from my own trees—no mistake about variety. Also Thompson Seedless Vines. W. A. Hayne, Box 461, Marysville.

WALNUT TREES—Grafted and Seedling. Also fine field-grown Ganter and Hannan Avocado trees. Write for prices. Magnolia Nursery, Whittier, Cal.

WAGNER'S CRIMSON GIANT WINTER RHUBARB—Subdivided plants. $15 per 1000; $2 per 100. G. E. Shelford, Healdsburg.

BARTLETT PEAR TREES—$10 per hundred. N. M. Cunningham, Red Bluff, Cal.

IF YOU HAVE SHALLOTS, make offer to C. C Morse & Co., 125 Market St., San Francisco.

PRUNE TREES—12 cents. Walnuts, 30c. Cash Nurseries, Sebastopol, Cal.

APPLES, PEACHES—10 cents. Gage Nursery, Corning, Cal.

WANTED.

WANTED—About sixty young men and women to enter the WESTERN NORMAL on January 1, 1916, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We save you time and money. For information address, WESTERN NORMAL, J. E. HUMPHRIES, Principal, Stockton, Cal., Box 704.

WANTED POSITION as manager of Orange Grove, Highland, Redlands, or Riverside district by orchardist and nurseryman of life experience. Middle-aged, married. Thorough, conscientious work guaranted. Best references. Orchardist, P. O. Box 102, West Riverside, Cal.

EXPERIENCED, RELIABLE RANCH SUPERINTENDENT wants position. Diversified farming, dairying, irrigation, registered live stock, poultry; references. Box 202, Pacific Rural Press

YOUNG MAN, 21, wishes position on stock ranch. General experience with horses and some months with cattle. Best of references. F. Bennett, 2659 Filbert St., San Francisco.

Experienced Swiss Dairyman wants dairy on shares—10 to 15 cows. Box 203, Pacific Rural Press.

LAND FOR SALE.

DO YOU KNOW that you may NOW apply for any of 600,000 acres of California School land?

DO YOU KNOW that you can NOW get lists and STATE MAP of 600,000 acres of SCHOOL LAND for $2.50?

DO YOU KNOW there is 20,000,000 acres of GOVERNMENT LAND in California, some in nearly every County, that is vacant? Some of it was taken years ago, and allowed to come back to Government; NOW supposed to belong to absent owners.

At great expense of many thousand dollars we have searched out these sections or parts of sections, marked Government land on County sectional maps, different color, with streams, railroads, wagon roads, other data, plainly enough for 14-year-old child to find some of the best tracts. Maps, $2.50, any County.

DO YOU KNOW that in Australia and New Zealand the Government searches out the land, helps people get it? We do a similar work here for YOU. For $5, we will send you lists, particulars, services, make applications for you, until 1917. It will pay you to send for our full services; $5 for lists, any 3 counties; $2.50 each for 3 County Sectional maps; $2.50 for school land State map, total $15. While we will send you any part of this service, we know that those who send for COMPLETE SERVICES get best bargains, better satisfied, get the best results. We recommend their plan to YOU. Order NOW. JOSEPH CLARK, Manager. CALIFORNIA STATE LAND INFORMATION BUREAU. office and residence, 1511 K Street, Sacramento.

EXCHANGE For stock or grain ranch, low altitude; best little apple orchard in the famous Rogue River Valley of Southern Oregon. Sightly location, right in the ideal residence city of Ashland, 5,000 population. Averaged 900 boxes Spitzenburgs and Newtowns past ten years. 1916 crop, 1,400 boxes, will bring about $1,700. Price, $7,000. O. H. Barnhill, owner, Ashland, Ore.

CALIFORNIA LAND—Money-making little farms, high class, low-priced properties in all counties. Call or write the oldest land office in California; we will save you 25 to 50 per cent. C. M. WOOSTER CO., 303 Phelan Building, S. F. Catalogue free.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

LONG LEASE ON SHARES—Old established nursery. Wholesale and Retail. Good terms. Full particulars, write Tribble Nurseries, Lodi, Cal.

ORCHARD, ALFALFA, STOCK OR RICE RANCHES for sale or exchange. Alex. T. Gibson, P. O. Box 361, Chico, Cal.

20 ACRES IN ALFALFA adjoining Kirkman Nursery, near State Highway. Fine pumping plant. S. H. Kunkle, owner, Madera, Cal.

WANTED GOOD FARM, or unimproved land from owner H. L. Downing, 145 Palace Bldg., Minneapolis, Minn.

periment Station believes that the Haynai (Virket) or Sandy varieties would do well there. But he emphasizes the need of knowing variety requirements of soil, temperature, humidity, etc., and of putting each variety in suitable locations, of which there are many in Imperial Valley.

FIELD CROPS.

Dealers estimate that there are about half a million sacks of potatoes still in warehouses at Sacramento and Stockton.

The cantaloupe shipments from Brawley, Imperial county, totaled 4,721 carloads last year.

Fourteen hop growers of Mendocino county disposed of their hops recently at prices ranging from 8½ to 10½ cents a pound.

The sugar factory at Fallon, Nevada has been purchased by a new company this month, who will endeavor to run it next fall.

Announcement is made that the sugar factory at Corcoran, which has been closed several years, will be opened to handle the beet crop of 1917.

Stanislaus and Merced counties produced $325,000 worth of beans last year and we are advised that the acreage this year will exceed that of previous years.

According to reports from Turlock there will be 2,000 acres of cantaloupes planted in that section this year. There were 1500 acres planted there last year.

About 20,000 bales of the Imperial Valley cotton crop had been ginned up to the middle of January. The 1915 crop is light on account of frosts in Novemer.

Members of the Glenn county farm bureau have decided to establish a market commission in the county, through which farmers will be able to buy and sell direct.

According to County Horticultural Commissioner A. E. Beers of Merced county there was about 48 per cent of the total farm land in that county under cultivation in 1915.

Mr. Gallagher of Galt is seeding 40 acres of alfalfa this season. He has secured 100 pounds of sweet clover seed from Colorado which he will sow as an experiment on dry land.

Over 1,400,000 sacks of beans were harvested in Santa Barbara county last year, and it is the belief of farmers there that the acreage this year will be larger than last year's.

A report from Stockton says that the demand for beans is improving and that dealers in that city expect large shipments during the latter part of January and the fore part of February.

Henry Majors and Elmore J. Lee of Watsonville were awarded third prize in the potato growing contest conducted in the State last fall. They secured a yield of 22½ tons to the acre at a cost of $165.

Practically all of the onions now held in warehouses at Stockton are owned by dealers at this time. Prices have improved considerably during the past week and many dealers are expecting them to reach $4 per hundred.

Andrew J. Young of Huntington Beach has developed a new lima bean which is thought to be far superior to other varieties on the market. The bean yielded 40 sacks to the acre last year under adverse conditions.

The Pacific Rice Growers' Ass'n report the sale of 21,662 sacks of rice between January 3 and 12. The greater part of this was Japanese and brought right around $2.00 a hundred on the average.

According to the chief inspector of the San Francisco Chamber of Commerce there were 20,000 tons less barley stored in warehouses at Port Costa, Stockton and San Francisco, January 1, 1916, than at the same time in 1915.

Steps are being taken by merchants in Oroville to comply with a recent suggestion from a farmer of that vicinity, to open a pulic market where farmers could dispose of their produce without paying excessive commissions.

Grain dealers in the San Joaquin valley estimate that there are somewhere near a million acres of grain planted in that valley this year. A 50 per cent increase in the acreage is reported on the west side of the valley and a 25 per cent increase on the east side.

According to government figures Nevada produced during the year 35,000 bushels of corn, 1,600,000 bushels of wheat, 585,000 bushels of oats, 576,000 bushels of barley, 2,240,000 bushels of potatoes, 675,000 tons of hay in 1915.

The directors of the State Agricultural Society have fixed the date of the California State Fair September 2 to 9 inclusive. If present plans are carried out this year's fair will be larger and better in every way than any held in the past.

The U. S. Department of Agriculture announce that they will work with the California Water Commission at points in the Sacramento valley the coming year, to determine ways and means of developing the rice industry in the State.

E. S. Malis of the California Polytechnic school at San Luis Obispo notes that cuttings of roses, geraniums or other less common plants, unless a clean cut is made on the end that goes underground, do not callus, but rot. The top may put out leaves, but soon dies.

The completed plans for the formation of a Lima Bean Growers' association, organized along business and legal lines, a non-profit, non-capital, marketing organization that will put the bean growing industry on a substantial basis, were submitted to the organisation committee last week at Ventura.

In his annual report for 1915, Farm Adviser Niles Searls of Yolo county made plain that the duties of a farm adviser are many and varied. Here are a few of the things which he has been responsible for: Hogs vaccinated for cholera, 750; hogs vaccinated for cholera by others on adviser's suggestion, 2000; farmers visited, 532; farms visited, 953; business calls made on adviser in his office, 228; cows tested for milk production through testing associations, 1500; animals tested for tubercolosis on adviser's suggestion, 105.

Save Money on Wire Fencing!
-send for WHITING-MEAD'S Free 1915 catalog showing how to save 20% to 40% on Building Material

Warner Fencing $4.10, $4.90, $5.55 per Roll, for Stock and Poultry

This class of fencing is known all over the country and usually sells for considerably more. First placed on the market some ten years ago to meet the demand for a substantial combination stock and poultry fencing.

It is closely woven and made of No. 14 galvanized wire, the spaces between the wires being graduated from the small mesh at bottom to keep chickens in, to the regular stock fence mesh at top. Has heavy cable edge at top and bottom, which enables it to withstand sudden shocks without injuring the fence.

Ten rods to roll and sold in full rolls only.

Height inches	Approx. Wt. per rod	St ays in ches	Bars number	Price per roll
35	7	6	15	$4.10
45	8	6	17	4.90
55	9.2	6	20	5.55

POULTRY FENCING $3.25, $3.60, $4.30, $4.90 PER ROLL—GRADUATED MESH—GALVANIZED

Has many advantages over the ordinary poultry n etting, being three times as strong, does not require a top or bottom board, as the selvege wire at top and bottom may be stretched to give perfect close fit to ground, and the top affords no place for chicken to rest.

All the features of the popular heavier fencing, including the interlocking mesh, with special graduated mesh to keep small chickens in. Sold in full rolls. 3 ft. high, $3.25; 4 ft. high, $3.60; 5 ft. high, $4.30, and 6 ft. high, $4.90.

WARNER HOG FENCING $5.00

Specially woven hog fencing, with barb wire selv ege at bottom, which effectually prevents hogs raising the fence, and does away with the necessity for and ex pense of bottom boards.

Made of best quality No. 14 galvanized wire, he ight 26 inches; weight per rod 4.5; stays, 6 inches; with 7 bars barbed at bottom. Sold in 20-rod rolls only, $5.

POULTRY NETTING 45c, 60c, $1.10
GALVANIZED—2 IN., 1½ IN., and 1 IN. MESH.

A great special buy, amounting to almost a full carload, in these much wanted sizes. Remember, it's all perfect in every way.

1 in. mesh, $1.10 per 100 sq. ft., 18, 24, 36 and 48 i nches high. 1½ in. mesh, 68c per 100 sq. ft., 24 inches high only. 2 in. mesh, 45c per 100 sq. ft., 18, 24, 36 and 72 inches high.

These prices will apply only so long as this lot remains in stock, so get your orders in early as they will be filled subject to stock on hand.

FENCE STRETCHER AND COMBINED HOIST $1.25

A most necessary tool in erecting wire fences and very handy to have on the farm at all times.

May be used as a lifting hoist, similar to block and tackle, has automatic catch which holds wire or load at height required. Thousands in successful use. Two sizes, $1.25 and $1.50 each.

"Standard" Roofing Paper

—A splendid quality of roofing paper that most firms would sell 20 to 40 per cent higher. Each roll complete with necessary cement nails, etc., ready to lay.

1-ply, double-sanded, per roll of 108 square feet	$1.15
2-ply, double-sanded, per roll of 108 square feet	$1.40
3-ply, double-sanded, per roll of 108 square feet	$1.65
1-ply "King" smooth, per roll of 108 square feet	$1.25
2-ply "King" smooth, per roll of 108 square feet	$1.50
3-ply, "King" smooth, per roll of 108 square feet	$1.75

Send for free sample. Remember we ship direct to you.

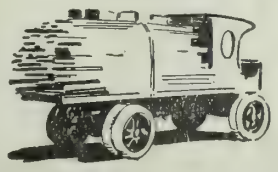
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PAINTS! PAINTS! PAINTS! WE BEAT 'EM ALL PRICES



Our paint department is now in full swing, a complete stock having reached us since the recent fire. We can give you the lowest prices ever on paints, brushes and painting supplies.

Standard House and Floor Paint $1.50 gallon.
Standard Porch Paint $1.75 per gallon.
Black Graphite Roof Paint 50c gallon in 5 gallon lots.
Standard Shingle Stain 50c gallon in 5 gallon ots. All colors except grey.



Oregon Pine $10 to $15

—Good new rough Oregon Pine Lumber, all sizes, at $10 to $15 per thousand.
—Oregon Pine Lath, 4 ft., new, $2.50 per thousand.
—Best grade Slashed Grain Oregon Pine, sanded finish, $37.50 per thousand. This makes a beautiful interior finish.
—These prices will give you an idea of how our lumber department can save you money. Send in your lists and let us give you our price delivered.

$30 Wallboard $19.00

The highest grade wallboard on the market; made of 3 layers of moisture-proof fibre, with asphaltum between each layer; or cream white fibre board. Cheaper and neater than plaster or lumber and any one can install it in one-quarter of the time. Per 1000 square feet

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PRELIMINARY VIEWS OF STATE MARKET COMMISSIONER.

If the farmers of California will organize into one great cooperative organization, standardize their products and co-operate with the State Market Director, so that they can have their goods inspected and stamped with the label of the State, they will be able to borrow from New York banks, 80 per cent of the market value of their goods on warehouse receipts at the low interest of 3½ per cent per annum.

Such was the announcement of State Market Director Harris Weinstock, upon his arrival home after an extended trip through the east, investigating markets for California products.

Colonel Weinstock states that his first work will be to aid in strengthening the growers' organizations already formed and the promotion of new organizations of producers. He realizes that he can do very little towards solving the present marketing problems, if he tries to deal individually with the thousands of farmers in the State.

He is of the opinion that one of the costliest things, if not the costliest thing, to the producer and consumer of perishable products is the glutting of markets. The interest of the producer in preventing gluts lies in the fact that gluts kill prices and make the industry unprofitable. On the other hand, gluts are usually followed by famines, which, for the time being, serve to boost prices for the consumer. It is the interest of the consumer that the market shall be steadily supplied so as to minimize speculative prices and to keep the cost down to a point where the farmers can live, and yet enable the consumer to get his supplies at a reasonable figure.

The regulation of the market supplies, therefore, is a vital factor, and this can only be done by having the growers thoroughly organized. Which emphasizes the importance on the part of the commission market to devote its fullest energies in aiding the growers to bring this about.

Even when the producers are well organized, as in the case of the citrus growers, he believes improvements can be made which will mean a big financial saving to the State. He thinks the fluctuation in orange prices can be remedied by the establishment by the commission market of a clearing house through which citrus products can be properly distributed without associations of orange or lemon growers losing their identity. One reason citrus growers have not established a distributing bureau has been fear of the Sherman law. He argues that the Sherman law does not prohibit such an institution.

That the market commissioner will lose no time in his effort to aid growers' organizations is certain and his work will be eagerly watched by the farmers of the State.

Jobbers' and retailers' costs of distribution, published by the Cal. Fruit Growers' Exchange several months ago as being based on investigations in a limited number of cities, are being systematically and thoroughly investigated now, according to Sec'y F. O. Wallschlaeger of the Citrus Protective League.



Absolutely the Best
OLIVE TREES
Grown in California

Scientifically propagated from the best fruiting trees in the State and under personal observation and supervision of a man who "knows how," thus producing trees 100 per cent perfect. You may say: "All Olive trees look alike." This may be true to a casual observer—but there's a vast difference, which will be evidenced soon after planting—more especially at fruiting time.

Armstrong trees come to bearing early

produce enormous crops of highest quality of Olives. "Safety first" in starting an Olive grove. Plant the best trees—they cost no more—perhaps less, than trees of unknown and uncertain origin and quality.
Can supply any number of trees wanted from one tree to several hundred thousand in the following varieties:

MISSION, MANZANILLO, ASCOLANO AND SEVILLANO.

Write for Prices Delivered
At Your Depot

Shade Treees, Ornamentals and Roses
Largest Collection in California



ALL THE NEW INTRODUCTIONS OF ROSES, such as MME. EDOUARD HERRIOTT, WILLOWMERE, GEORGE DIXON, OLD GOLD, HADLEY, SEPTEMBER MORN, SUNBURST, and over 200 standard varieties, choice thrifty field-grown stock, direct from the nursery rows to you at most reasonable prices. Ask for catalog—it's free.

Shade and Ornamentals

such as **Spanish Chestnut, Oriental Sycamore, Mulberry, Texas Umbrella, Plane trees, Pistache, Poplars, Flowering Locust, Weeping Mulberry, Weeping Elm, Weeping Willow, Acacias (12 varieties), Eucalyptus (13 varieties), Camphor, Ficus, Grevillea, Magnolia, Live Oak, Pepper Cedars, Cypress, Junipers,** and scores of others.

Write for a free copy of my 1916 illustrated and descriptive catalog of the various Shade trees, Ornamentals, Shrubbery, Roses, Climbing Vines, Flowering plants, etc., from which to make your selections.

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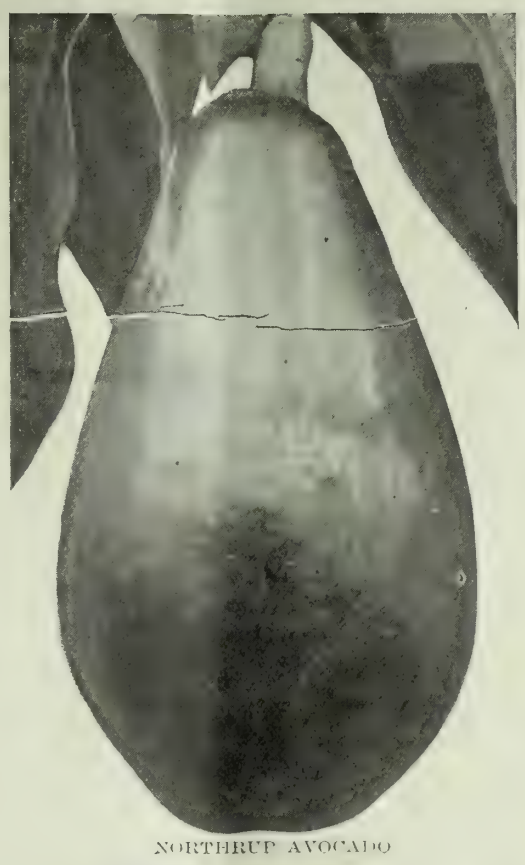
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Avocado Trees

NOW --- SOON

The present demand for trees of proven varieties of Avocados is heavy and will evidently be all "sold up" early—hence it is highly advisable to make your selections and place your order at once. Should you have a favorable and suitable location for growing this wonderful and highly profitable fruit, you should have your trees planted and growing as soon as possible—**the experimental stage is passed and present growers are reaping a harvest.**

The Avocado will thrive under similar conditions as required for successful Citrus culture. **The hardier varieties, such as the Northrup, will withstand, without serious injury, 14 degrees of frost.**



NORTHRUP AVOCADO

"Taft" a thick-skinned variety



TAFT AVOCADO

Taft Avocado

A handsome, thick-skinned variety. Fruit, large, pear-shaped, weighing about one pound; flesh of extra good quality; ripens in June, July and August.

The Hardiest of its Type

The parent tree bears regularly, and is becoming more prolific each season. Can supply choice budded trees, balled or boxed at $2.00 each and up, according to size and quantity wanted.

Can also supply trees of many other proven varieties, such as

HARMAN, GANTER, NORTHRUP, CHAPPELOW, CHALLENGE, LAMBERT, LYON, MESERVE, SHARPLESS, SURPRISE, WAGNER, AND OTHERS.

at most reasonable prices.

Ask for free copy of my 1916 illustrated and descriptive catalog of Avocados and all other fruit trees of highest quality, at most reasonable prices.

Explicit instructions for planting and cultivating the Avocado supplied all customers.

Miller's Late Peach

Without a Doubt the Finest of All Late Peaches.

a yellow freestone, ripening November 1st to 15th, and commands fancy prices. Originated by John S. Armstrong and propagated solely by the Armstrong Nurseries, Ontario, Cal.

You should order a few trees of this new variety at once—

choice trees at 40c each; $3.50 per 10 and $30.00 per 100 f. o. b. Ontario.

Ask for free illustrated and descriptive catalog of 27 other varieties of Peaches, adaptable to California and the Southwest.

Write for special prices on large quantities of any sort of fruit trees wanted.

Apple, Peach, Apricot, Pear, Plum, Walnuts, Almonds, Pecans, Orange, Lemon, Grape Fruit, Limes, Tangerines, etc.

WHAT THE SUGAR BEET MAY DO FOR CALIFORNIA.

There was recently given at Oxnard, Ventura county, by the American Beet Sugar Company, a barbecue which more than 2000 people attended. After the feast Robert Oxnard of San Francisco addressed the assembly and included these paragraphs:

"It is interesting to speculate upon what the sugar producing possibilities of California would be. California, with an area of over 150,000 square miles, is as large as France. If only 3 per cent of its area were devoted to beet-sugar production, it would produce 4,000,000 tons of sugar, consumed in the entire United States. This would have a value of $400,000,000, which is equal to the whole of the present product that comes from the soil of California in the shape of field crops, orchard, live stock and forests.

"In addition to this, sugar-beet pulp would fatten 2,500,000 steers every year—one fat steer for every man, woman and child in the State. Then, another by-product, the molasses, could be turned into alcohol to give a gallon every week to every man, woman and child in the State. This might not be an unmixed blessing, but you will admit that it would make things lively. To accomplish all this, would require less than 100 factories such as you see before you now. It has been the universal experience everywhere that a beet factory doubles and trebles the value of the land around it. It also builds up prosperous communities around it that have all the advantages without the disadvantages of the great cities."

TEPARY VS. BLACKEYE BEANS.

[Written for Pacific Rural Press.]

One year's experience does not necessarily prove one crop better than another, but Ed Powers of Manteca received so much more money for his Tepary bean crop last year than he did for an equal acreage of Blackeyes that he says he'll plant Teparys after this.

Last year he planted a sack of Teparys as an experiment and when harvested they yielded five sacks to the acre more than his other beans, the sacks weighed heavier and the Teparys sold for $1.70 a sack more. Both the Blackeyes and Teparys were planted later than usual last year so neither did as well as possible, the Blackeyes running 10 sacks to the acre and the Teparys 15.

Besides the difference in yield the Teparys are an early maturing bean and if planted in May never get caught by early fall rains. Mr. Powers plants eight pounds of Blackeyes to the acre and only four of the Teparys, the latter being a smaller bean.

The University Experiment Station, located on 40 acres at Meloland, Imperial county, is emphasizing dates in their fruit planting. Already several hundred date palms are at fruiting age; and others are soon to be set about 30 feet apart among the young citrus trees which were considerably frosted in mid January. It is hoped that the shade of date palms may favorably modify the summer heat and winter frosts on the oranges.

WHAT SHOULD CALIFORNIA DO FOR BREAD.

(Continued from page 99.)

a demonstration of the fact that a fertile country with a good climate can be most highly developed in the line of special products and still make her own bread.

Third, from an agricultural point of view, wheat is an indispensable factor in the rotations which we shall observe as we farm more rationally and have more regard for the maintenance of fertility in the soil. A high-priced cereal is the collector of the money which the other factors of the rotation are storing up. Pasturage, legume-growing, deep-root growing and other factors in rotation should pay their way, and as much more as wise use of the products can get out of them, but it is the high-priced cereal which is depended upon to coin into dollars the savings of the other crops. There are two high-priced cereals, wheat and rice, and they will both do as rotation collectors, but wheat is vastly more available because of the extra water and soil handling which rice requires. Therefore wheat is indispensable in California's improved farming of the future.

Fourth, California should produce her own flour and flour for export because milling exports the least valuable part of the grain and saves to the state the part of the grain which is most valuable, to-wit: the bran and other feed-stuffs for stock which are directly required for the dairy and other branches of the live stock industry and indirectly required to increase and enrich the annual by-product in manure. From this point of view it would do perhaps to import wheat and export flour, but California's milling industry will be permanent and prosperous if it can continue to command California-grown wheat. Great mills have a natural tendency to draw near to plenty of wheat.

Fifth, California needs to hold onto wheat production because the wheat plant with us makes most growth while the water is falling and turns at once into vegetation much moisture which would otherwise be lost in run-off or fly away by evaporation. Because of our growing winter, it is possible to get the maximum results from a minimum of precipitation. Therefore the arts of better tillage, which have come to be called "dry-farming," will do more in California than in any cold-winter climate. Wheat is the best selling of the dry-farmed crops and therefore indispensable to the fullest use of our unirrigated lands. Wheat is also indispensable from the point of view of irrigated field crops for the reason that it is irrigated during the winter when water is most abundant in streams and least needed for fruit and forage crops.

Sixth, wheat growing is needed because of the inspiration and opportunity it gives to invention and manufacture. California has the most unique and capacious grain-growing and harvesting machinery in the world, the introduction of which to other countries is being profitably pursued. Though wheat growers of the future may operate on a smaller acreage per capita of ownership and do the work better and get a vastly larger acre-product, it is altogether likely that arrangements will be made to retain the advantage of tractors in tillage and hauling and harvesters in cutting and threshing. Even though they may be modified to meet new conditions which may evolve, it is too soon to prophesy that they will be displaced in the fundamental of cheap power and their efficiency as labor savers.

For these and for a number of other incidental reasons, economic and humanic, which the interested reader can develop for himself, we answer now the question propounded at the beginning and declare that "What California should do for bread" is to grow more wheat and we shall hope at another time to suggest ways by which more wheat can be profitably grown in this State.

THE PEACH-ALMOND.

To the Editor: Regarding your inquiry about the peach-almond for a stock, they don't seem to grow true to type, but have a tendency to revert back to almonds. To breed them up so they would grow true would doubtless require 8 or 10 generations of seedlings, selecting a certain type to plant each time, continuing this till the type becomes fixed, so it will reproduce true from the seed. This might require nearly a lifetime. T. J. True.

Dairymen—



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It contains some valuable information on feeds and feeding, together with plain, simple facts about dried beet pulp—the feed you will eventually buy. Your name and address on a postal will bring you the book free. Send for it now.

LARROWE'S DRIED BEET PULP

—is clean, wholesome, appetizing; aids digestion; contains five times as much nutriment as silage, with as great or greater succulence—swelling to fully six times its original bulk when moistened. It will increase your milk yield from one to five pounds per day from each cow—and at the same time improve the health of your herd.

Order a single 100-lb. sack (either plain or with molasses) from your feed dealer and test it on one cow whose milk record you know. You'll be pleasantly surprised at the results.

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THE LARROWE MILLING CO.
934 Central Building
Los Angeles

California Swine Breeders First Sale.

[Written for Pacific Rural Press.]

There is no longer any doubt but that California has "arrived" from a purebred livestock breeding standpoint and that the problem confronting the industry at the present time is, how best to distribute the "seed" on hand, so that it may do the greatest possible good.

With swine this is particularly true at the present time and while the Exposition Berkshire sale is the only co-operative attempt that has been made in the past, its success in distributing the best blood of that breed to all parts of the State, at remunerative prices to breeders, seems to have paved the way for many more sales of the same character.

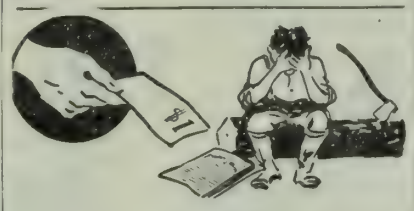
Among the first to realize the advantages of this plan of selling were the members of the California Swine Breeders' Association, and their first sale at Sacramento, next week, is the result.

That the idea has met with favor among the breeders of the State, is evidenced by the fact that a total of 107 animals, representing the Berkshire, Poland China, Duroc Jersey, Chester White, Yorkshire and Hampshire breeds have been consigned, whereas it was the original intention to confine the sale to 40 head.

With the above number, many of which are from the most prominent herds in the State, the undertaking really becomes a hog show as well as a sale and together with the program that has been arranged for the annual meeting of the association, January, 26, one of the largest crowds of farmers ever in attendance at an auction sale in this State should be attracted.

Prof. J. I. Thompson, secretary of the association, sends us the following program for January 26, which will start promptly at 10 o'clock at Travelers' Hotel, Sacramento:

President A. M. Henry, presiding; Hog Cholera and Its Control, Dr. B. J. Cady, U. S. Dept. of Agriculture; The



If this farm paper doesn't make you happier, stop it and get your money back

No preaching — but nearly 1,000,000 homes are better places to live in because there's one paper that feels and voices the real needs of the farmer and his family, as well as the needs of his acres and his stock.

Have you the time to read a paper that makes you glad you live in the glorious country? Send $1 for five years; or write for free sample of Farm Journal and free copy of Poor Richard Almanac for 1916. Write today to

The Farm Journal
143 Washington Square, Philadelphia

Hauck's
Big Type Poland China
Offering.

I am consigning to the Swine Breeders' Sale at Sacramento 3 boars and 2 sows, sired by **LONG MODEL**, a boar which weighed 600 pounds at 22 months.

This lot of boars were farrowed June 19, 1915, and are out of dams sired by Longfellow 3rd.

The gilts I offer were farrowed June 30, 1915, and are out of a dam sired by **Iowa Wonder**, a son of A. Wonder.

They all have nice heads, wide, well-arched backs, good hams, large bone, and stand up well on their toes.

Be sure and have a bid on one or all of them.

Breeding stock for sale at all times at my farm.

NATE HAUCK.
ALTON, Humboldt Co., Cal.

JACK LONDON OFFERS---

At Sacramento Sale,

A Trio of Durocs out of Glodine, a 700-pound sow, sired by Sonoma, a son of Cal. Volunteer,

and

Two Chester White boars, sired by Jose, a 700-pound boar. These two boars are ready for light service and fit to head any herd.

We also have for sale at our farm:

1 two-year-old Registered Jersey bull.

1 Yearling Reg. Jersey Bull.

Several fine grade family cows.

A few good grade work horses, 1600 to 1700 pounds.

Full particulars upon request to

JACK LONDON.
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We Insist

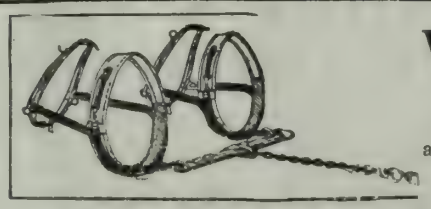
That everything we do shall be well done
That everything we sell shall give the greatest satisfaction.
That every transaction must be just right.

SPECIAL FOR MONTH OF FEBRUARY.

We are offering service boars at a reduced price. Write for a detail description and pedigree. At the head of our herd, Artful Masterpiece 110970 and Improver B 181000, Grand Champions at the California State Fair in 1912, 1913, and 1914.

All stock guaranteed to be as represented and to be breeders.

OAK GROVE DAIRY FARM, Woodland, Calif.



Why Not Use a VINEYARD HARNESS

as with it you can work closer to the vines or young trees.

Price, $15.00 per Set, delivered at your railroad station.

FORKNER ALFALFA TILLERS. ASK ABOUT THEM.

The H. C. SHAW CO., Stockton, Cal.

FIRST ANNUAL AUCTION SALE OF PURE BRED HOGS

Under the auspices of the California Swine Breeders' Association, will be held at the STATE FAIR GROUNDS, SACRAMENTO, JANUARY 27, 1916.

100 head of pure-bred hogs of various breeds will be sold. These represent the TOPS of some of the best herds to be found in California. All hogs sold will be registered and be guaranteed breeders by consignors.

W. H. HORD, Auctioneer — J. I. THOMPSON, Secretary

Selling Side of the Pure Bred Hog Business, C. B. Cunningham, Mills, Cal.; The Value of a Good Sow, Nate Hauck, Alton, Cal.; Judging of market barrows, to be slaughtered afterwards and exhibited the next day at the sale; The Value of a Good Sire, A. B. Humphrey, Mayhew, Cal.; 1916 State Fair, Chas. W. Paine, Secretary State Board of Agr.; The Value of a Good Pedigree, C. N. Slocum, Willows, Cal.; Fitting Hogs for the Showing Ring, J. L. Thatcher, Riverside, Cal.

As an indication of the quality to be offered in this sale, the following description of a few of those offered are of interest.

A. M. Henry, is offering four Poland China boars, all of which are of serviceable age and sired by H's Big Bone, the grand champion boar at the 1913 State Fair. Two of these boars are out of Western Winner, another out of Lady Improved and the other out of Turlock Wonder, all immense sows with good individuality, as are their sons.

C. B. Cunningham offers five bred gilts, two of which are sired by W. Earl and out of Miss Trim and W. May. These two gilts are bred to Chief Triumph. The other three are sired by Missouri Lad, who was sired by White Eagle Chief. Two are bred to Perfection Boy. The other is bred to California Prince 2nd, a boar recently purchased from the University Farm. This stock is right in blood lines and the matings should produce something nice.

Breeders will be interested in the announcement that Jack London, the author, has five entries in the sale. He is offering a trio of Durocs, out of "Gladine," a 700-lb. sow, sired by "Sonoma," a son of old "Cal. Volunteer." He also enters two Chester White boars, sired by "Jose," a 700-lb. boar. These two boars are now ready for light service, and are fit to head any herd.

The five Poland China pigs that Nate Hauck is consigning to the sale were sired by Long Model, a young boar that Geo. M. Cantrall bought in H. Fesenmeyer's 1914 sale. He is a large hog weighing over 600 pounds at 22 months old in light breeding condition.

The dams of these pigs were sired by Longfellow 3rd, a son of Longfellow Jr., and the pigs themselves are exceptionally well put up.

The Oak Grove Dairy Farm offers the two service boars, Cee Master, by Artful Masterpiece and out of Jewel Cee, farrowed March 10, 1915, in a litter of eight, and Wilts Masterpiece 2nd, another son of Artful Masterpiece and out of Belle Wilts 35th, farrowed March 28, with a litter of eight. They also offer two bred gilts, Oaks Master Belle 4th, a litter mate to Wilts Masterpiece 2nd, and equally as good an individual, now bred to Brinton's Longfellow, and Improver Lady Value 4th, sired by Improver B, farrowed November 11, 1914, with a litter of eight. She was bred to Brinton's Longfellow November 20, 1915. Her dam was Woodland Lady Premier, one of the company's old standbys.

L. D. Collins is offering five bred Duroc gilts, all sired by Slocum Crimson Wonder, sire of Chief Defender and litter mates of Red Wonder of Cal., Prince Collin, California and Senorita. They are all bred to Model Chief, a young boar of great vigor and promise.

A. H. Brinton has two Berkshire sows in the sale sired by grand champion Baron Duke 170th, one of which is out of Victor Belle 15th.

L. R. Painter is consigning the Poland China boar Snyder Hadley, a proven breeder carrying some of the best blood of the breed in Missouri.

Mrs. Nettie Douglass has two Poland China boars in the sale, one, Lucifer by Skidmore, 11 months old, and the other Roy Boy, litter mates.

W. H. Hord of 704 Market St., San Francisco, will do the auctioneering

SPOON-FED FARMING DEPLORED.

To the Editor: A simple amendment to the Reserve bank law would solve, as far as government can do so, the rural credit problem. Let the reserve banks be authorized to receive from auxiliary banks, as security, long time farm mortgages at 4 per cent. This would remove the offensive features of other propositions which treat the farmer as a servile dependent upon government favor. It would place his securities on a par with those offered by men in other kinds of business.

The proposition of Mr. Weinstock that farm produce shall be officially handled, routed, shipped, stored and sold, is one that also treats the farmer as a poor dependent creature incapable of attending to his own business. It has been shown here that producers are entirely capable of co-operating in shipping, routing and selling, and all classes of rural producers should be encouraged to follow this example rather than to use Abraham's bosom for a pillow and let the most important part of their business be attended to by one of many political machines.

I think Mr. Weinstock would be insulted if the farmers should propose a state commission to take official charge of his business, and sell, distribute and route the sale of his bright ribbons, modern hip and straight front corsets, laces, underwear and things.

In these high and mighty days of reform the chemically-pure politician is becoming a greater pest by far than the old common garden variety he has displaced. He does not seem to know that experience is still teaching school, and that the more government does for a people the less they will do for themselves, until individual initiative becomes a lost quality. Jno. P. Irish.

Oakland.

LARGE TYPE POLAND CHINAS

AT

SACRAMENTO, JANUARY 27.

We have consigned to the

California Swine Breeders' First Annual Auction Sale,

WESTERN PRINCE 245,319, sired by H's Big Bone and out of Western Winner, farrowed March 27, 1915.
BIG WONDER 245,323, sired by H's Big Bone and out of Lady Improved, farrowed April 25, 1915.
BIG BONE JR., 245,317, sired by H's Big Bone and out of Western Winner, farrowed March 27, 1915.
CHIEF THICKST 245,321, sired by H's Big Bone and out of Turlock Wonder, farrowed November 26, 1914.

These boars are all sired by **H'S BIG BONE, the half-ton Grand Champion** at **California State Fair 1913,** and are out of our immense sows.

Each one is a good individual and will suit the particular buyer. Be sure and see this lot before the sale starts.

We also have several young litters by **H's Big Bone** and **Dude,** not included in this sale, which we shall be pleased to send you full descriptions of; or, better still, come and see the herd and be convinced of its excellence.

KNOB HILL STOCK FARM.

A. M. HENRY & SONS, Props. **FARMINGTON, CAL.**

"WE PRODUCE THE MORTGAGE LIFTERS."

L. D. COLLINS'
DUROC-JERSEYS
—at—
SWINE BREEDERS' SALE

SACRAMENTO, JANUARY 27, 1916.

Litter Mates of Winners at Panama-Pacific International Exposition.

The five gilts I have entered are all sired by SLOCUM CRIMSON WONDER 130129; sire of California Defender, 181269, and are litter mates of RED WONDER OF CALIFORNIA 182609, PRINCE COLLIN 182607, CALIFORNIA 461850 and SENORITA 461852, all placed in the money in the J. K. Fraser herd at P. P. I. E. These gilts are bred to MODEL CHIEF 190385, a young boar of great vigor and promise. Combined with the excellent breeding of the Gilts, this breeding is sure to bring litters of the highest type of the breed.

L. D. COLLINS, DENAIR, CAL.

BILLIKEN HERD
Improved Chester Whites

Headed by Missouri Lad, who has quality with size and bone, and has made a good sire. He is assisted by **California Prince 2nd,** a direct descendant of King Brendel; **Chief Triumph,** sired by Chief O. K., Junior Champion at Missouri, 1914. **Perfection Boy,** a direct descendant of old Perfection.

All the brood sows are of equally good blood lines. Have a number of bred sows coming from the East who are from the best blood lines the breed produces. Weaned pigs, both sexes. Service boars, bred gilts and sows to offer. An attractive lot of weaned pigs to offer from the coming spring farrows.

Everything cholera immune. **Crated and registered free.**

C. B. CUNNINGHAM

MILLS, **Sacramento Co., Cal.**

W. H. HORD

LIVE STOCK DEALER AND AUCTIONEER.

LINDEN STOCK FARM:

Three miles north of Linden, sixteen miles northeast of Stockton.
Phone Long Distance Linden.
For Hire, Horses and Mules in Carload Lots a Specialty.
For Sale—Berkshire Hogs, Shropshire Sheep, Horses and Mules.
OFFICES: 704 MARKET STREET,
Phone Kearny 1937. **San Francisco, Cal.**

More and Better Hogs in California.

Turning off six-month-old pigs by the carload, weighing an average of 190 pounds each, is made possib le by breeding and feeding.

GETTING HOGS TO MARKET EARLY.

[Written for Pacific Rural Press.]

Get a hog to market early if you want to make the most money out of him, is becoming more and more of a slogan among progressive hog growers in California.

What is possible in this respect is pretty well demonstrated on the 30-acre alfalfa ranch two miles from Modesto managed by B. E. King. About 350 head of hogs, little and big, are handled on these 30 acres; and it is a rule strictly adhered to not to keep a market hog over 8 months of age. Naturally this is made possible only by breeding and feeding.

The brood sows, of which there are 50 (to be increased, however, to 75 at once), are selected from the young gilts and are later mated with purebred Berkshire boars. This system of selection and mating naturally serves as a foundation for fast growth when feeding conditions are right.



An Inyo County Berkshire, owned by J. L. Gish.

The brood sows, both before and after farrowing, are not turned onto alfalfa pasture as the other hogs are; but are fed alfalfa hay, rice middlings, and some buttermilk at times. It is after weaning that the heavy putting-on of weight is done on this ranch, the hogs immediately after weaning being turned onto 20 acres of sub-irrigated alfalfa, securing a ration of alfalfa pasture, buttermilk, ground barley, and rice middlings till they weigh about 90 pounds. They are then put onto a concrete feeding floor and fed all of the buttermilk and grain ration they will eat.

The pens are provided with self-feeders in which ground barley and rice middlings are always before them together with charcoal, salt, and other health food. Mr. King estimates that the hogs in the feed pens consume on the average about four gallons of buttermilk daily which is secured at ¾c a gallon, and about three pounds of the grain mixture.

The value of this ration in securing gains is demonstrated by the average gains made in two pens between Aug. 9 and 27. Each of these pens in the beginning contained 20 head, and the average gain per day per head was 2¼ pounds in one pen and 2.47 pounds in the other. These hogs were marketed at six months of age in San Francisco and weighed 178 pounds after shrinking 12 pounds each from their 14-hour rail trip.

Convenient Feeding.—In feeding such a large number of hogs on such a small acreage, it is natural that convenient and sanitary quarters must be provided. Two feeding sheds have been built, each being 26 feet wide and 100 feet long, divided into five compartments, each 20 feet wide and 26 feet deep. Along the front of this building a concrete floor and skim milk trough extend 9 feet from the edge of the building. Next to this is a concrete wallow which drains into a gutter and is easily cleaned out. A wooden bridge connects the concrete feeding floor with a board-floored pen back of the wallow. This latter pen is protected by a roof and has hinged doors on both back and front, which may be closed in winter and opened in summer. This provides excellent sleeping quarters for the hogs in either wet, cool weather or exceedingly warm weather. A gate connects these sleeping quarters with a five-foot passageway running along the outer edge of the building, which is also floored with lumber. At one end of this passageway is a loading chute; and at the other end is a corral and dipping vat. Each of these houses accommodates 100 hogs and is kept in sanitary condition by the daily scrubbing of floors, wallows, and feeding troughs.

The farrowing house is built on similar lines, the pens in this instance being but 10 feet wide, thus making the sleeping quarters 8x10 feet deep. This building is floored with lumber in place of concrete, as that has been found better for the young pigs.

Watches for Cholera.—Cholera is considered the only objectionable feature of raising hogs in this manner, as once it gains a foothold it is difficult to stamp out. It was brought onto the place last year by the purchase of shoats from another county, which had cholera in a chronic form and did not show symptoms until heavy feeding was commenced. Since that time, all the hogs have been vaccinated, and from now on it is the intention to finish only those hogs which have been grown on the ranch, immunizing the brood sows and keeping a liberal supply of serum on hand in case any outbreaks should occur.

Mr. King emphasizes the point that when hogs are properly fed they can be easily brought up to suitable market size at six to eight months with less expense than when kept improperly for longer periods.

MR. HOG ON DIVERSIFIED FARMS

There are advantages to diversified farming and by no means the least of these is the opportunity afforded for swine raising.

A highly diversified ranch was recently visited on which Mr. Hog was shifted around like this: First he learned to eat at the dairy, where he had skim milk from the dairy and the run of a small patch of alfalfa. After weaning he was sent into the orchards, picking up waste fruit here and there which was sandwiched in with almonds that had been knocked from the trees by birds. Incidentally he helped himself to ripe olives, the result of early frosts, and cleaned up the unpicked grapes in a nearby vineyard. Most of the time he was "fruiting" he had access to the alfalfa pasture.

This series of feeds carried him well into the fall of the year and had developed him into a good-sized feeder, ready for grain finishing. Although not previously planned that way, it happened that just then there was a 16-acre field of sorghum and Indian corn harvested, where Mr. Hog and 49 of his relatives found enough waste grain on the ground and stalks to finish himself up in tiptop shape. This and an alfalfa pasture was his last feeding ground.

If variety is the spice of life California hogs on diversified farms surely ought to have plenty of life.

For the third time, J. D. Lott of Holtville is raising hogs. The first bunch died with cholera; the second bunch, purebreds, were vaccinated with old serum and died; the third bunch of about 200 are being vaccinated with satisfactory serum; 70 were vaccinated last week.

FIRST SEMI-ANNUAL SALE

OF

Kings County Poland China Breeders' Association

will be held at

The Fair Grounds, Hanford, Calif.

Saturday, Feb. 5th, 1916.

On this date there will be one hundred and fifty head of Registered Poland Chinas sold, consisting of

Bred Sows, Bred and Open Gilts

and a number of High Class Boars

Some of the best animals from the leading herds of Kings County will be sold without regard to price or value.
This sale will be absolute AND WITHOUT RESERVE.
No protection measures of any kind will be permitted.
Sale under cover and will be held, rain or shine.

CONSIGNORS:

M. Bassett
Wm. Bernstein
J. A. Crawshaw
Oscar Dimmick
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AUCTIONEER:

COL. BEN A. RHOADES,
Assisted by T. J. GILKERSON.

For catalog or information, write

F. E. NEWTON,
or any consignor, Hanford, Cal.

GRANDSONS OF TILLY ALCARTRA

At Prices within Reach of Every Breeder and Dairyman.



A Grandson of Tilly Alcartra.

We have several splendid grandsons of this now famous cow which we can deliver to you at prices which will suit the pocketbooks of every dairyman wishing to improve the quality of his herd, whether it be a grade or pure-bred herd. These bulls are sired by our herd bull, Prince Alcartra Korndyke and out of A. R. O. cows, and are the only living grandsons of a cow having a record of over 30,000 pounds of milk in a year. Such an opportunity for increasing production has never been offered DAIRYMEN AND BREEDERS in California, price and quality considered. Buy one of these bulls and solve your low production problem. Write

J. S. Gibson Co., Box 97 Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

HILLCREST STOCK FARM

Thornton S. Glide, Prop.

Davis, Cal.

SHORTHORN CATTLE

Shropshire and Merino Sheep

FOR SALE, SINGLE OR CARLOAD LOTS



KING LANCASTER,

Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.

THEY HAVE GRAND CHAMPIONS BEHIND THEM.

Advantages of Heavy Horses.

[By Wayne Dinsmore, Secretary Percheron Society of America.]

The advantages draft horses have over light horses in farm work are numerous. The tractive power horses can exert is governed by weight, strength and temperament. Under extraordinary pressure horses can exert from four to six horse power, but under conditions of daily work exert a pull which is about one-tenth of their working weight.

The horse power traction required to move farm implements depends on the soil, climatic conditions, and the condition of implements used. Under favorable conditions five draft horses weighing 1600 pounds or over will pull a two-plow gang of 14-inch plows a little more than twenty miles, averaging from five to five and a half acres per day. It will take seven horses that weigh from 1100 to 1300 pounds to do the same work, and it is not practicable to work seven horses on one gang plow with the ordinary class of farm labor. It will therefore require two men on single plows, one with four and the other with three light horses, to do the same amount of work that one man will do with five draft horses.

The same general ruling applies in seeding, disking and harvesting, for while one man can readily handle five draft horses on the implements needed, he cannot advantageously nor safely use enough more light horses to give his equivalent power. The use of draft horses therefore increases the amount of work one man can do in the field; and in actual practice the work is better done when drafters are used. When to this we add the fact that less barn room is needed, and less labor required in handling the heavy horses, than is necessary where enough more light horses are used to make up equivalent power, the advantage becomes marked.

Besides this, the heavy horses sell more readily and at higher prices, when surplus is to be sold. Light weight horses have been bought at prices ranging from $110 to $150, while draft horses have brought from $200 to $300 each. This is an important factor, for every well managed farm has a few surplus horses to sell annually, and the readier sale, and higher prices realized for draft stock, are factors which must appeal strongly to all thinking farmers. Maximum cash returns are what we are all interested in, and this we obtain from drafters used in farm work.

Dairy Production for 1914-15.

[Written for Pacific Rural Press.]

Dairying fattened farmers' pocketbooks to the tune of $38,377,342 during the year ending September 30, 1915, according to a report just issued by Secretary Andreason of the State Dairy Bureau. The fact that this is almost four and a half million dollars more than was received by farmers from this source in the year ending September 30, 1914, indicates that dairying is having a healthy growth in the State.

The figures given below show that the greatest gain in the various branches of the industry were made with butter. Other figures in the report show that the average price of butter during the year was $.2870 as compared to $.2761 the year previous. Cheese prices, however, did not fare so well, the average the past year being $.1410 as against $.1606 the year before.

By counties Stanislaus continues to beat out her nearest rival in butter production by a goodly margin, with Imperial second and Humboldt third. The accompanying figures show how the different counties favor the dairy cow.

County	1914	1915
Alameda	316,912	437,401
Alpine	25,000	27,000
Amador	140,000	114,890
Butte	924,616	1,124,710
Calaveras	155,000	133,197
Colusa	473,938	566,512
Contra Costa	545,095	621,575
Del Norte	664,186	887,500
El Dorado	125,660	127,958
Fresno	3,292,572	3,158,220
Glenn	770,202	1,258,020
Humboldt	5,251,887	5,591,870
Imperial	5,710,287	6,334,310
Inyo	171,241	303,309
Kern	986,457	982,694
Kings	3,164,620	3,811,477
Lake	114,124	101,953
Lassen	202,200	220,000
Los Angeles	534,180	567,621
Madera	162,636	462,501
Marin	2,046,325	2,338,338
Mendocino	447,049	498,779
Merced	3,876,875	4,253,000
Modoc	25,000	85,534
Mono	10,000	10,000
Monterey	660,715	939,483
Napa	665,151	600,439
Nevada	162,920	241,689
Orange	75,000	74,000
Placer	105,000	128,904
Plumas	295,598	320,886
Riverside	141,720	245,270
Sacramento	1,649,153	1,737,511
San Benito	275,857	438,386
San Bernardino	105,000	100,000
San Diego	570,929	593,384
San Francisco	15,750	
San Joaquin	1,292,474	1,184,658
San Luis Obispo	1,909,176	2,759,751
San Mateo	211,000	327,448
Santa Barbara	331,148	510,460
Santa Clara	299,750	309,552
Santa Cruz	183,902	274,439
Shasta	91,620	123,000
Sierra	145,000	150,000
Siskiyou	788,975	880,013
Sonoma	2,449,695	2,965,893
Solano	1,464,456	1,043,303
Stanislaus	8,184,390	9,973,320
Sutter	881,805	969,594
Tehama	504,975	473,733
Tulare	4,362,290	4,787,690
Ventura	56,937	34,588
Yolo	1,061,703	1,091,496
Yuba	198,309	252,164
	59,286,460	67,522,409

PEROXIDE NOT GOOD FOR RABBIT EAR SCABS.

[Written for Pacific Rural Press.]

Use of peroxide for rabbit ear scabs failed for Mrs. Oakes of Contra Costa county, whose beneficial results as reported in Pacific Rural Press proved to be only temporary. She and one of her neighbors succeeded beautifully, however, by applying olive oil, mixed with sulphur to a gravy-like consistency. This was applied directly to and around the scabs with the tip of a feather. The worst cases required daily treatments for a week; and one of them was later found uncured. A few treatments of the same kind, however, fixed this case. Mrs. Oakes reports that a medical friend says use of peroxide seems often simply to drive the germs farther in rather than killing them. This was the case in one of our recent veterinary queries.

COW WITH THROAT TROUBLE.

To the Editor: Have a cow that stands around with her tongue out and tries to cough and never chews her cud. She filled up on corn fodder about six weeks ago, and I gave her cow tonic which seemed to relieve the bowels. One of my neighbors says she has lost her cud. Can you tell me what to do for her?—H. M. B., Turlock.

[Examine her throat and see if anything is caught there, then give her two pounds of Epsom salts and one ounce powdered ginger at one dose. Follow this with one dram fluid extract nux vomica twice a day until she is relieved. If the salts do not act on her bowels in 24 hours repeat the dose of salts.]

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REDWOOD PIPE

All diameters from 2 inches to 12 feet. Much cheaper than any metal pipe. Will carry 30 per cent more water than metal or cement pipe of same diameter. Will outlast any metal pipe except cast iron. Cannot be injured by roots or displacement. Furnished for any pressure from 0 to 400 feet, and guaranteed for 100 per cent overload.

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We make them in all shapes and sizes, from 200 gallons to 500,000 gallons.

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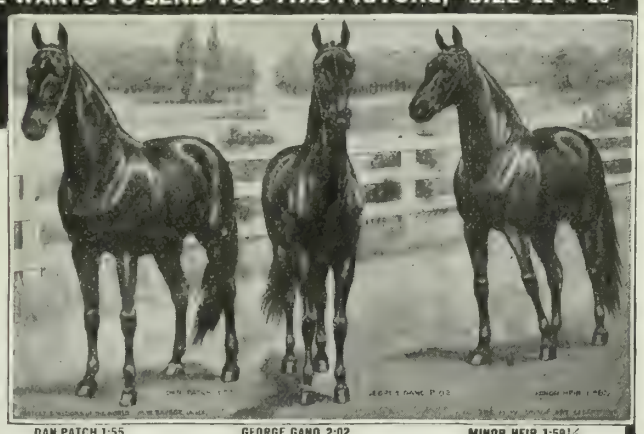
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DAN PATCH 1:55 GEORGE GANO 2:02 MINOR HEIR 1:58¼

JUST MADE FROM MY BIG, $500. PAINTING.

M. W. Savage wants to Give You his Latest and Finest and Most Beautiful,—Champion Stallion Picture,—ABSOLUTELY FREE,—POSTAGE PREPAID. Painted in Aug. 1915. Extra Heavy Superfine Enamel Stock,—Big Size 22 by 28,—Reproduced in 14 Artistic Colors. Mailed in Extra Heavy Mailing Tube. M.W. Savage believes this to be one of the Finest Horse Pictures in the World and you will be Delighted with it. You Don't Have To Buy Any Goods. M. W. Savage owns these Champion Stallions, Dan Patch also Champion Team, Minor Heir and George Gano,–Team Record 2:02, about 250 Brood Mares and Colts, and Personally Guarantees this Splendid Color Picture,–as Described and True to Life. Art Pictures, from Original and Exclusively Owned Paintings,—often retail at from $3.00 to $5.00 each. Write at once,—you will be Sure of the Finest Horse Picture you ever saw.

$12.75 A BIG SET OF 72, LA FRANCAISE DISHES In Writing for Picture,–be Sure and Ask Me to send you my Color, Description Blank of Beautiful, $12.75 Dishes,–or 25 Piece Set of Community Reliance Silverware. Also Biggest, Free Premium Offer,–in the World,–My Special $27.75 Free. FREE.

FOR FREE PICTURE, WRITE TO W. M. SAVAGE, MINNEAPOLIS, MINN.

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Send for sensible folder on feeding hogs
Western Meat Company
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El Dorado Cocoanut Oil Cake
for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address
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With the Live Stock Men.

DAIRYING.

Mr. R. Fisher of Ripon, San Joaquin county, is increasing his dairy herd by outside purchases and is building a large modern dairy barn.

C. R. Merrill of Colusa has purchased the dairy of A. M. Hampton which he will overhaul and put in shape for sweet milk production.

R. D. Stitt of Holtville has already disposed of three or four poor producing cows after only six months of recording milk weights of individual cows.

J. M. Reardon of Bieber, Lassen county, has been looking over the dairy field in the vicinity of Chico and is considering the erection of a cheese factory at that place.

American condensed milk is being exported in record-breaking amounts with sales aggregating 37,235,627 pounds in the fiscal year 1915, against less than one-third that amount in 1911.

Garclaugh May Mischief, an Ayrshire cow belonging to P. Roberts Jr. of Pennsylvania, has just finished a year's record with 25,328.7 pounds of milk containing 1052.83 pounds of butter.

Some 350 separate separator houses have been built in Imperial county the past year. This has been a great factor in the increased quality of cream and butter, according to Dairy Inspector H. T. Nye.

J. D. Huston of Imperial is putting in extensive improvements such as concrete floors in the dairy barn, two big silos, and a small cold storage plant for cream to be shipped for a high price to Los Angeles.

Cheese production in Imperial county decreased to 61,000 pounds in 1915 from 185,000 pounds in 1914; while butter production increased to 6,334,316 pounds in 1915 from 5,710,287 pounds in 1914.

Dairy Inspector H. T. Nye of Imperial Valley believes it is best not to pasture cows but to cut green feed for them daily. It saves them exercise in the hot season and gets more feed per acre. R. D. Stitt is one who does this.

E. A. Clausen of San Francisco reports the sale of a registered Holstein bull calf to J. M. Cremin of Sacramento. This bull was sired by Artis Pontiac Butter Boy and out of a young cow not yet tested whose sire was Maplecrest Korndyke Pontiac.

Dr. E. J. Weldon returned from the east last week with 112 registered Holsteins which he purchased in the east, 80 of which were for the J. M. Henderson company of Sacramento county. Dr. Weldon will keep the other 32 head on his ranch near Galt.

An interesting program was prepared for the annual meeting of the Humboldt County Dairymen's Ass'n which was held at Ferndale January 12. F. J. Cummings was elected president to succeed H. A. Perry who has served in that capacity for three and a half years.

The California Polytechnic school at San Luis Obispo will soon begin to make cheese. A cheese maker from Denmark was engaged after he had made a special study of the business at Tillamook, Wash., according to E. L. Westover, who has charge of the dairying at that school.

Mr. A. Gregory of Redlands has purchased 515 acres of land between Redlands and San Bernardino which makes his total holdings about 650 acres. Mr. Gregory plans to plant this acreage to alfalfa and increase the size of his dairy. He is also contemplating the erection of a cheese factory.

According to the monthly report of B. F. Kegel, tester for the Stanislaus County Cow Testing association, there were 85 cows in that association which produced over one and a half pounds of fat during the month of December. The heaviest producer during the month was the Holstein cow Abbie, owned by N. E. Cornwell, who gave 82.4 pounds of fat.

Men in charge of 43 cow testing associations in Wisconsin who have found the Babcock test the biggest single asset to their business success as breeders and producers of profitable dairy cattle will hold a conference in Madison during the Wisconsin Farm and Home Week, Feb. 7-12, which is the twenty-fifth anniversary of the butter fat test by Prof. S. M. Babcock.

The N. H. Locke Co. write: "We have recently sold A. B. Kendall, Manchester, Midget's Valet of L., sired by King's Valet and out of Lady of Lockeford's Midget, who gave 61.6 pounds of fat in one month and 52.29 pounds fat in the seventh month of her lactation period. Also the bull Lodeman's King of L., grandson of Valet's Golden Biddy and Borello's Golden Laddie.

The high character of the public sales of Guernseys is worthy of commendation. The demand for Guernseys at private sale has been so tremendous for the last few years that there have been very few sales of Guernseys from the commission or dealer's standpoint. This has been so marked that the Fasig-Tipton Company, Madison Square Garden, New York, found it impossible to secure Guernsey consignments to their recent sale.

A report from Modesto says that the Western Securities Co. of Los Angeles have buyers in Stanislaus county with orders to purchase 1500 head of dairy cows for settlers in Milford Valley, Utah. An effort is being made to secure grade Holstein cows, which will be bred to purebred bulls that the company expects to purchase in Wisconsin. We can see no reason why progressive Holstein breeders in this State should not get some of this bull trade.

SWINE.

A pig raising club will be organized in the Chico high school sometime this month.

Willoughby & Sons of Calexico are gradually working over their large herd into purebred Durocs.

Another carload of hogs was shipped from Los Molinos last week to the San Francisco market.

Ralph Bull of Arcata, Humboldt county, purchased a carload of hogs at Ukiah last week for shipment north.

A pig club was organized at Tulare early this month through the efforts of R. R. Ingell of the U. S. Department of Agriculture.

Mr. Forest of Holtville lost 30 hogs by cholera, and bought some more which were vaccinated in mid January by the double treatment.

An outbreak of hog cholera is reported from Yerrington, Nevada. A representative of the Nevada University is on the ground aiding the farmers in eradicating the disease.

Hog shipments from Yuba City this year have been heavy. Henry Chism and H. A. Walton shipped a carload from that place last week and expect to make other shipments soon.

Hog shipments from King City, Monterey county, have been heavy so far this month and the stock going to market are said to be in exceptionally fine condition, bringing around 5½ cents a pound, delivered at cars.

Peters and Lamson of Imperial county, being so far removed from the rest of the State, have established a sample sales herd near San Bernardino, while still raising their stock under the favorable conditions of the old ranch. Most of their sales have been in Imperial Valley.

Dr. R. W. Ritter has recently vaccinated hogs for the following people about Holtville: 600 registered Durocs for Peters & Lamson, 450 Poland Chinas for Mr. Scott on the Davis ranch, 300 for Frank Powell, 250 for W. A. Thompson, 225 for Harry Cooper, and 85 for La Costa Bros.

Peters and Lamson of Holtville recently bought the registered Duroc boar Colonel the King from Lyons Bros. of Neb. for $150 besides $21 express from San Francisco. He is a grandson of Old Missouri Top Model and of King the Colonel, which was the sire of the $5,000 boar Old Defender.

Carruthers Farms has sold this month, to Miller & Lux, six Berkshire sows and a boar, to go to their farms at Dos Palos. To R. E. Sheldon of San Francisco, three yearling Berkshire sows. Mr. Sheldon offered Mr. Carruthers $500 for his Berkshire boar, Ames Rival 70th, but failed to get him. H. H. Hewings, Calistoga, purchased Forest Grove Duchess 5th, one of the winning sows at the Panama-Pacific; he also bought three of the best yearling sows on the ranch for a show herd to be exhibited this year.

BEEF CATTLE.

The Spreckels company shipped 200 cattle from Kings City last week to Oakland. These were beet pulp cattle and the company still have 1590 head in their corrals.

Word comes form Chicago that a new breed magazine to be known as the Shorthorn World will shortly begin publication under the editorship of James H. S. Johnstone.

The ranges of Nevada will be seeded with Australian grass under the supervision of the Nevada University. That grass has been found to be particularly adapted to Nevada conditions.

A report from Santa Barbara states that there are more beef cattle on the coast ranges this year than for many years past and that the grass is, generally speaking, in excellent condition.

V. F. Dolcini, who has been a professor at the University Farm at Davis for the past two or three years, has leased the Jones ranch of 100 acres near Davis where he will establish herds of purebred stock.

What are said to have been one of the finest lot of beef cattle ever turned out in the Salinas valley were the two carloads shipped by Miller and Lux one day last week from their beet pulp feeding station at Alisal.

Within the next two months specialists on range grasses will make trips to Humboldt county to talk to the cattle men there on the various range grasses and the possibility of introducing better varieties into that county.

The Secretary of Agriculture has authorized for the season of 1916 the grazing of the number and class of live stock on the El Dorado National Forest as follows: 9700 cattle, 50 swine, 17,500 sheep, 400 horses and 1500 goats.

Cattle owners from Nevada are working in connection with the Oakland and Antioch railroad in an effort to secure a round trip livestock rate from Nevada to California points. The Nevada cattle raisers are desirous of wintering their cattle in the Montezuma Hills of Solano county.

W. T. Sesnon of San Francisco has received from the east a carload of registered Hereford heifers, very strong in Anxiety blood. To head this herd he has also received a $1000 bull calf from the celebrated herd of Harris & Sons of Missouri. The stock will be placed on Mr. Sesnon's ranch near Aptos.

Live stock men in Napa county met last week at St. Helena to perfect the organization of the Napa County Livestock Ass'n, whose purposes are set forth as favoring and aiding in every possible way the advancement of purebred livestock in the county. Homer Hewins of Maplewoode was elected president of the new organization.

W. M. Carruthers will receive this week six cars of fine stock from Iowa, consisting of 50 head of serviceable Hereford and Shorthorn bulls, and 50 head of Shorthorn and Hereford heifers. The Shorthorns are made up of Scotch ancestry, and while they were purchased last March it was not till now that they could be shipped out here.

Elko county, Nevada, has a staghound which is doing the work of several men in the etxermination of rabid coyotes. The hound is owned by Asa Womach, a rancher in the northern part of the county. Womach has brought to Elko the scalps of 100 coyotes, nearly all of which had been run down and killed by the dog, which has been trained for the work.

Lima bean straw is half the price of alfalfa ($15 to $16) at Goleta according to J. G. Williams; and it is not worth more than that proportion in feed value. Mr. Williams fattens beef for himself on lima bean straw, principally, but it is a slow process. He gives it to his dairy cows with grass, pumpkins, beets and alfalfa. They clean it up well after being accustomed to it.

A total of 7650 horses, 3200 head of cattle, and 300 hogs, may be

PEDIGREED HOLSTEIN BULL $250.

I am now offering a very fine bull out of a high-testing dam, who was sired by King Pontiac Premier, one of the best sons of King of the Pontiacs, 165 A. R. O. daughters. Her present record is 21.09, made at four years old, but she can make around 25 lbs. with next calf. On the sire's side the bull has the blood of Pietertje Hengerveld Count De Kol, 99 A. R. O daughters; and dam Deutschland Creamelle, is out of Creamelle Vale, the former world's championship milk cow. This young bull is almost white in color and is ready for service.

Write or come and see him.
F. H. STENZEL,
San Lorenzo, Calif.

Carruthers Farms

are now offering for sale

50 Head of Shorthorn and Hereford Bulls

Serviceable, tuberculin tested, registered.

50 Head of Shorthorn and Hereford Heifers.

Tuberculin tested, registered.

These bulls and heifers are a remarkable lot, the Shorthorns being nearly all Scotch breeding.

For particulars and prices address

W. M. Carruthers
515 Hearst Bldg.,
San Francisco.

E. K. Brown
Superintendent.
Mayfield, Cal.

grazed in the Santa Barbara forest this season, according to word received from the United States Department of Agriculture by Forest Supervisor J. R. Hall. The grazing season commences in March and lasts until November. The fee for pasture is about 64 cents for the season for cattle and 80 cents for horses.

The University of California has purchased the Shorthorn bull Sultan Mayflower, from the Whitehall Estates, Inc., at Tracy. This bull is sired by Sultan Stamp and from an imported cow of Scotch breeding. As a calf Sultan Mayflower was selected by Leslie Smith of the firm of White and Smith, owners of the great show bull, Ringmaster, to share herd duties with the older bull, but was later secured by the Whitehall Estates Co. when the herd was dispersed.

W. M. Carruthers received this week from Rookwood Stock Farm, Ames, Iowa, the fine young Shorthorn bull Count Glory, sired by Count Avon, an International grand champion, and four yearling heifers also sired by Count Avon and out of Cruickshank cows, which he has placed on Carruthers farms near Palo Alto. Another lot of two Cruickshank-Lovelace and three Victoria cows will soon arrive to join the above stock. Mr. Carruthers' ambition is to build up the strongest Shorthorn herd in the west.

HORSES.

A carload of heavy horses was shipped to Los Angeles last week from Bishop, Inyo county. They were bought for the city trade.

The Hickman Estate sold 26 head of mules last week to W. W. Chandler of Holts for $2600. Mr. Chandler will use them for land checking.

Churchill and Doyle, who have been extensive buyers of army horses in this State recently, have returned to Stockton where they are again buying horses and mules.

DRAFT HORSE SALE POSTPONED.

At the meeting of the directors of the California Draft Horse Breeders' Ass'n, January 17, it was decided to postpone the sale at Davis, early in February, till some time in the fall, probably in October. This will allow more time for the securing of consignments and the proper advertising of the sale.

SHEEP AND GOATS.

C. H. Widemann of Gonzales, who proposes to establish a goat dairy, has just received three carloads of Anglo-Nubian and Toggenberg goats from Mexico. He also has another shipment of 500 goats on the way north.

In his annual address to the National Wool Growers' Ass'n, at Salt Lake City last week President Frank J. Hagenbarth of the association said that unless something is done to prevent what he pronounces unwise distribution of the public domain, the sheep industry will be destroyed.

The production of wool in the United States in 1915 is estimated by the Bureau of Crop Estimates, Department of Agriculture, as 288,777,000 pounds, compared with 290,192,000 in 1914 and 296,175,000 in 1913. The price to producers for unwashed wool has averaged about 23.4 cents per pound, as compared with 18.4 cents in 1914 and 15.7 cents in 1913.

During 1915, Petaluma shipped 2,248,801 dozen eggs more than during the year 1914.

LIVESTOCK DIRECTORY.

DAIRY CATTLE.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

FRANK MEACHAM, Petaluma, California.—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Purebred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

REGISTERED JERSEY BULLS from register of merit cows. D. F. Conant, R. "B," Modesto.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

SUNNYBROOK RANCH, Willits, Cal.—Breeders Registered Holstein stock. Young bulls for sale sired by Ruby Gem Cavary Lad. Prices reasonable.

REGISTERED HOLSTEINS — A ten-month-old bull, $125, one five months for $100, and bull and heifer twins for $100. K. W. Abbott, Milpitas, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs butter as two-year-olds. A. A. Jenkins, Tulare.

THREE-YEAR-OLD registered Holstein bull, "Prince Fayne Concordia," for sale. Write for price, pedigree and photographs. H. E. Wilson, Princeton, Cal

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd, W. F. Mitchell, Visalia.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

TWO REGISTERED HOLSTEIN BULLS out of A. R. O. dams. Sired by King Mead. Ready for service. J. H. Harlan Co., Woodland, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class, thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

TWO REGISTERED HOLSTEIN BULLS old enough for service. Very light in color. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEIN BULLS — Serviceable age. From finest strains. Panama-Pacific Dairy. Sutter Creek, Cal.

HOLSTEIN-FRIESIAN CATTLE and Berkshire Hogs. H. B. Goecken, Breeder, Goecken Heights, Livermore, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

BREEDERS OF A. R. O. Holstein Freisian cattle exclusively. Dirk Dairy Farm, Lemoore.

CREAM CUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

PALENDALE HERD of Registered Holsteins. Young bulls for sale. J. A. Pelanda, Modesto, Cal.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls from tested cows for sale.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Son, Chino, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys, Santa Cruz, Cal.

BREEDER of Registered Holstein Cattle. Ernest Otto McClure, R. 2, Modesto, Cal.

BREEDER OF REGISTERED HOLSTEINS—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes. McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd. D. & H. Rowles, Modesto.

JERSEY BULL—8 months old. A bargain. O. J. Ames, Oakdale, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

BEEF CATTLE

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco, or H. J. Macomber, Paicines, Cal.

FAIR OAKS RANCH, Willits, Cal.—Registered yearling Shorthorn bulls for sale. Sired by Landseer 379318, grandson of imported Villager 295884.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON-NEWMAN CO., Breeders of registered Herefords. Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

HEREFORD BULLS—H. H. Gable, Diamond G. Ranch, Esparto, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

HORSES AND MULES.

FOR SALE—Large-boned, purebred mammoth Jacks. Best of breeding. Prices and terms reasonable. Satisfaction guaranteed. J. A. Dickinson, Fresno, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

SWINE.

BIG TYPE POLAND CHINAS—One to a carload. Any age, either sex. 600 on hand. They have plenty of size, extra good bams and shoulders, strong arched backs, great length, depth and thickness of body, with good looks as well. Many are sired by IOWA WONDER, a 1000-pounder in show condition. I believe his pigs are the best in California. Visitors say they are the best they have ever seen. He sires the kind that grow faster and larger, have more, better and stronger pigs, and are more practical and profitable—the kind that are highly satisfactory Extra special prices on account of being overstocked. I have hogs galore. Prices will surprise you. Satisfaction guaranteed. Write Geo. A. Smith, Corcoran, Cal.

BILLIKEN HERD of registered O. I. C. Swine. Pigs of both sexes from March, April, May and June farrows. Four sires used: Chief Again, Iowa Boy, Missouri Lad and Woodview Earl. All the dams are the smooth, big type. A few bred sows to offer. Everything is cholera immune. Write for prices and catalogue. C. B. Cunningham, Mills, Sacramento County, Cal.

YOUNG'S POLAND CHINAS—Large type boar, "I. B. A. Wonder" won first in class and Reserve Champion P. P. I. E. 730 lbs. under two years in breeding condition. Sows bred and sired by "I. B. A. Wonder." Also weanling pigs, either sex. Trios unrelated. None bigger. None better. $15 and up. Will please you or money refunded. W. A. Young, Lodi, Cal.

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RANCHO RUBIUS HERD DUROCS—Won 1st under six months, Junior Champion, Reserve Grand Champion, Champion Sow bred by Exhibitor, 2nd Sow under 2 years, and two other premiums, all on four entries at P. P. I. E. A few service boars and weanling pigs for sale. Elmer Lamb, Ceres, Cal.

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Veterinary Queries and Replies.

[Answered by Dr. H. B. Wintringham, Petaluma.]

Correspondents desiring a reply by mail should send money order for $1.00. No charge is made when questions are answered through this department.

WHEN TO DEHORN.

To the Editor: I have one cow that will freshen January 15 and two others that will freshen March 15. When will be the best time to dehorn them?—Subscriber, Escalon.

[Any time after they freshen, before the fly season comes on and when the weather is not frosty and wet.]

GROWTH ON HORSE'S LEG.

To the Editor: My horse has a growth on his hind leg, below the hock joint. It is about the size of a medium-sized orange, apparently in sections, and similar in appearance to a large wart except that it is red and full of blood. Advise me of treatment.—E. L. D., Linden.

[This is "proud flesh." Paint once a day with butter of antimony until it disappears.]

LAMPERS IN HORSES.

To the Editor: Is there a simple or effective remedy for lampers in young horses?—P. A., Lodi.

[There is no such thing as "lampers." If an animal is teething it will naturally have a sore mouth and gums. If these organs become very much inflamed rinse out the mouth with a saturated solution of potassium chlorate once or twice daily, or as needed.]

MAY BE TUBERCULOSIS.

To the Editor: We have a cow that takes spells grunting for three or four days at a time. During those spells she just lies around most of the time. She eats well and chews her cud at such times. She will be fresh in four and a half months. Should we use her milk?—H. L. W., Laton.

[Have this cow tested for tuberculosis. If she does not react give her a good purge, two pounds of Epsom salts, whenever these spells come on.]

WARBLES ON BACK.

To the Editor: Have a cow that has small lumps on her back. A few have opened and a little matter or pus ran out. What is the trouble and how should we treat it?—W. M. J., Earlimart.

[These lumps are caused by the grub of the hypoderma lineata or warble fly. They remain buried under the skin during the winter and emerge in the spring. The lumps may be opened and a few drops of turpentine placed in the cavity.]

MARE WITH THRUSH.

To the Editor: I have a mare that is troubled with the frogs of her front feet. She walks very carefully and limps somewhat. When I clean the dirt from around the frog there is a very offensive odor as from decay and the frog seems to be of a dark color underneath. Is it better to keep her shod or barefooted and what else can I do?—F. E. W., Lake county.

[This is thrush. Clean out the foul deposit thoroughly with a piece of cloth and a small stick, then pack the openings with cerate of cantharides. Repeat this treatment in four days and again in a like time. This should remedy the trouble.]

TICKS AND EYE TROUBLE.

To the Editor: Have a mare that got something in her eye. Matter ran from it for about two weeks, then seemed to be all right, but a thin blue scum has come over the eye and she seems to be blind. What can I do for her? Also, how can I keep ticks off from horses that are running out in brush land?—R. S. P., Plymouth.

[Have the following put up: Ointment of yellow oxide of mercury 2 per cent. Place a piece the size of a pea in the eye once a day until the eye clears up. Lime-sulphur dip will kill the ticks on the animals, but there is nothing you can use that with one application will keep the ticks off.]

SWEENY AND SICK PIGS.

To the Editor: I have some pigs which eat but don't grow. Their eyes get watery and some go blind. Small lumps form under their legs and some have blisters on them. Some get mangy. Please advise me what to do for them. Is there any cure for hip sweeny and stifle in horses? If so, what is it?—W. J. P., Lindsay.

[This is Necrobaciliosis. Dip these pigs in a 2 per cent solution of liquor cresolis compositus daily for four or five days, then once a week for four or five times more.

There are cures for hip sweeny and stifle trouble, but a more careful history will have to be given before treatment can be advised.]

GARGET AND LUMP JAW.

To the Editor: About a year ago I lanced the jaw of one of my cows and it never seemed to heal over, although she keeps in good condition and raised two calves for me last year. Is her milk fit for human consumption? Have another cow whose milk contains lumps resembling cream or butter. What is it and is her milk all right?—J. R. R., Folsom.

[Have both your cows tested for tuberculosis. If they do not react give the cow with the lump jaw one dram Calcium Iodide twice a day for a period of four to six weeks and paint the lump with tincture of iodine every other day during this time. The other cow has garget; give her two drams potassium iodide twice a day for two weeks or until the trouble is relieved. The writer as it is not fit for human use the milk from either of these animals as it is not fit for human use.]

HEAVES AND TEAT TROUBLE.

To the Editor: My mare colt has the scours and gas as soon as I begin feeding her oat hay and alfalfa. She keeps up well in flesh and seems all right when on the range. She breathes with difficulty after running. A hard lump about the size of an egg came on the teat of my cow last year about a month after she freshened. She will be fresh in February. Will the same growth appear and how should I treat it?—Subscriber, Redding.

[Your colt has heaves. Give her ½ oz. Fowler's Solution, three times a day, moisten the feed to hold down all dust, and reduce the bulk of her ration by giving more grain and less hay. This will slowly alleviate her trouble, but if you neglect to keep up this treatment it will come back. The medicine is to be given for two months, then skipped a month, and so on indefinitely. Try painting the lump on the teat with tincture of iodine daily until the skin becomes roughened, then skip a day or so and begin again up to the time she freshens. If this does not reduce it an operation will be necessary.]

NOTICE!



Wishing to devote my whole time to other business, I have decided to sell out my

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in order to dispose of them quickly. Included are the stallions which have been at the head of my stud for the last two seasons. All are sound and good stock horses.

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Farm Feeding Problems.

[Answered by Prof. F. W. Woll, University Farm, Davis.]

GRAIN FEEDS FOR DAIRY COWS.

To the Editor: When beet pulp can be had for $23 per ton, alfalfa meal at $19.50 per ton, cocoanut meal at $26.50 per ton, with barley grain grown on the place, would it seem advisable to put up a silo? (Above feeds do not contain molasses.) Do those feeds make an ideal ration and in what proportion should they be fed to dairy cows? Oat hay ad lib. — H. F., San Luis Obispo.

[A silo will prove a good investment on dairy and stock farms almost anywhere in the state, because it enables farmers to secure palatable succulent feed of uniform quality and available for feeding at any time during the year. If this were not the case silos would not go up in increasing numbers every year all over the State, from the Imperial to the extreme northern counties. If the correspondent can grow either Indian corn or sorghum varieties, these will prove most valuable silage crops, but the first and the last crop of alfalfa, as well as green oats and other cereal crops, can also be made into good silage. If alfalfa is raised on the ranch, a mixture of beet pulp, barley and cocoanut meal will prove cheapest at the prices given and will make a good grain ration. If alfalfa is not available it will be advisable to include alfalfa meal in the mixture provided alfalfa hay cannot be bought at much lower price. The cows have plenty of time to do their own grinding and there is no advantage in feeding high-priced alfalfa meal to them, whatever its value may be for poultry or swine. If alfalfa hay cannot be obtained at a fair cost, say $12.00 or less per ton, and oat hay is fed, a small amount of alfalfa meal may be added to the grain mixture, making it up as follows: Barley, beet pulp, cocoanut meal and alfalfa meal, in the proportion of 2:2:1:1 by weight. About a pound of this mixture for every 5 pounds of milk produced will prove sufficient for good milch cows. Young stock and fresh milkers may be fed somewhat more grain to advantage.]

FETERITA STALKS FOR STOCK FEEDING.

To the Editor: There has been considerable experimenting in this district with feterita, but several things relative to its raising do not seem to be known. The food value of the dried stalks after harvesting; could they be shredded or cut and fed the cows with a beneficial result? I know that green, cows, horses and hogs have great preference for it over nearly any other forage. Also if feterita is planted by the first of February and cultivated, could it be raised without irrigation? Our soil is a light, sandy loam. How often should it be cultivated?—G. L. H., Winton.

[Feterita stalks make a very acceptable rough feed for farm animals. They do not differ greatly in composition from Indian corn stalks and contain approximately a similar proportion of digestible nutrients as these. They are preferably run through a shredder, or an ordinary corn cutter with shredder blades, and may be stacked and fed to cattle, horses, sheep, etc., during the fall and winter months. The shredded stalks also make a good material for bedding. There would probably be danger of injury from frost if feterita were planted as early as the first of February. Large areas of it are grown in this and other western states without any irrigation, the fields being cultivated two or three times during the season so as to keep down weeds and utilize the moisture in the ground so far as possible for crop production.]

HOG FEEDING QUESTIONS.

To the Editor: What is the comparative feeding value of bran and rolled wheat for hogs? What age of hogs would you feed either? When and how would you consider middlings? Might a heavy grain ration mixed as follows: rolled barley 1 pound, rolled wheat 3 pounds, bran 1 pound, fed dry three times a day, with all the skim milk they can drink, free range but not much green feed and all the alfalfa hay they want, be apt to give big heavy two to three month old pigs the scours? How would you feed the hulls and large particles of corn that is taken from ground corn when the corn meal is sifted out? What difference would there be between it and the whole corn? Do you consider it better to grind corn on cob for any age hogs? Do you realize more from the corn that way?—R. E. S., Bishop.

[Answered by Prof. J. I. Thompson, University Farm, Davis.]

Bran is not a satisfactory feed for hogs except in a limited way. If some bulky material is needed, alfalfa hay, alfalfa meal, roots or some similar cheap, bulky, home-grown material would be more suitable for part of the ration for brood sows or shoats not fed for gain. Wheat is usually too high in price to feed hogs, but has a feeding value somewhat superior to that of barley. When used it should preferably be rolled or ground and soaked. It may be fed to all sizes and ages of growing pigs, and in reasonable quantities to brood sows. Since it is low in protein it should be supplemented by some high-protein feed such as tankage, skim milk, cocoanut meal, etc. Middlings are much higher in protein than wheat, hence may constitute about one-third of the grain ration for growing pigs and brood sows when the price will permit.

The ration which you give, provided the bran is omitted, should not produce scours provided the milk is fed in the proportion of 3 or 4 pounds to 1 pound of grain and provided the pigs are brought up gradually to full feed.

The bran and screenings from corn meal had probably best be fed in thin slop. The greater the amount of bran and hulls found in this feed the lower would be the feeding value, for most of the indigestible crude fiber of the corn would be found in these screenings.

Would prefer to feed ear corn dry and on the cob to hogs. Corn and cob meal is satisfactory for cattle and sheep but too bulky for use in pork production. Unless the corn is exceptionally dry it can be most economically fed on the cob where a clean feeding floor is available. For very little pigs it may be shelled and soaked.

CHOPPED GRASS FOR COWS.

[Written for Pacific Rural Press.]

Electricity from the San Joaquin valley runs five motors on the Santa Ysabel ranch in San Luis Obispo county. The ranch system includes a large dairy which for 20 years until recently, supplied city milk to Paso Robles. One of the important features of the feeding system is chopped hay, corn, and grass. A Ross No. 40 chopper is run by a 7½ h. p. motor, electricity for which costs $1 per month per horsepower.

One man goes to the field early in the morning and cuts a load of corn or sudan grass and hauls it to the shed beside the feed cutter, which is handy to feed the cows. Two of the milkers feed it into the machine and do odd jobs while the first one is out for another load. Half a ton of green sudan grass is chopped in 15 minutes if it lies straight, according to the manager, P. A. Welty. The cows will leave corn to get the chopped sudan grass, which is sweet and juicy, though rather strawy to be eaten without chopping.

The other motors run pumps, churn, saw wood, etc.

Frank Vander Poel of El Centro has three cows on official test. He has a 40-ton silo, one of the few in the Valley, feeds cotton seed, and does not pasture his cows.

NOW IS THE TIME YOU WOULD APPRECIATE AN

Ideal Green Feed Silo

RIGHT NOW, when dairy products are bringing their highest prices, you would be making an extra good profit from your cows if you were feeding silage.

DRY HAY CANNOT PRODUCE anywhere near the amount of milk that is produced by feeding rich, juicy silage.

GRAIN IS HIGHER IN PRICE—too high to leave much profit for you if you feed a lot of it. But no matter how much grain you feed you will not get as much milk as you would if you fed silage, which costs much less.

SILAGE IS THE LEAST EXPENSIVE and greatest milk-producing feed you can use. If you had put up a silo last summer you would have made enough extra profit this winter to pay for the silo before spring.



SILAGE IS ALSO JUST AS GOOD FOR BEEF cattle and sheep as it is for milk cows. Besides, it is compactly and conveniently stored so that the time and work of feeding is reduced.

DON'T LET ANOTHER WINTER find you without a silo. The cost of doing without one is too great. You are actually paying for a silo this winter, by losing the profit it would bring you and by the extra work doing without one entails.

ASK US TO SEND YOU complete information about Ideal Green Feed Silos. You have more time now to look into this matter than you will when the rush of spring comes on.

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Use a *double-action* harrow—disk twice at one going over. Save gasoline and keep from compacting the soil by a second working. But be sure the harrow has our rigid main frame that forces the rear disks to cut midway of the fore disks—the only harrow where rear disks cut as deep and do as much work as the fore disks, leaving the land level. Use a

Cutaway (CLARK) Double-Action Engine Harrow



Its *forged sharp* disks cut deep without bringing up trash; the dust-proof, oil-soaked, hardwood bearings and perfect balance make draft light; it has an adjustable hitch, and is made in sizes to fit all tractors, with spreader hitch for use in multiples. If your dealer has not the *genuine* CUTAWAY, write to us direct. Be sure to write us for our new free book, "The Soil and Its Tillage." Make the best of your power this year.

The Cutaway Harrow Co.
Maker of the original CLARK disk harrows and plows
876 Main St., Higganum, Conn.

REGISTERED SWINE.

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our stock is sure to please.

Write or call and see us.

SWINELAND FARM,
W. O. PEARSON, Prop.
Woodland, California.

Registered Duroc Jersey

Iowa Chief and Crimson Wonder Blood.
BIG BONED. BIG LITTER. BIG TYPE.
We have now 40 head of choice boars, open or bred gilts and weanling pigs for sale.
Special attention given mail orders.
C.R. Hushbeck, Watsonville, Cal.

Poultry Questions Answered.

[By Geo. H. Croley, President Federated Poultry Association of California.]

FATTENING TURKEYS.

To the Editor: Please give full directions for fattening turkeys; say whether corn, wheat, or barley is best, and should it be cooked or not.—M. H., Waukena.

[There exists a great difference of opinion as to what is the best grain, or assortment of grains and meals, to use in fattening turkeys to produce extra choice table qualities. A simple method, and one that saves much time, is to allow the turkeys to continue on range, and feed white or yellow corn in the evening. Under favorable conditions fair results may be obtained in two weeks or even ten days; but the best finish is secured by devoting a full month to the work. If only two weeks or less are allowed for the task, they must be fed a little corn for two days and for the remaining period all they will eat each evening at about roosting time. When adopting the thirty-day method in connection with free range, proceed as follows: Begin by feeding three or four grains of corn for each turkey just as they get ready to fly to roost. Each day add two or three grains to the ration for each bird and also feed about five minutes earlier than the previous day—next day ten, the following day fifteen minutes earlier, and so on. Continue with this daily increase of corn and earlier feeding time until a week or ten days before killing time, after which they may be fed all the corn they will eat up clean. This method encourages the production of an abundance of tender lean meat and moderate quantity of fat. Over-fat turkeys are not desirable. It is remarkable how quickly the turks learn that supper time comes a little earlier each day and that the supply of corn increases. By the time they receive a heavy feed of corn they will come in early enough to materially reduce the ranging time and increase the period of loafing and fattening. They must have a constant supply of good, sharp grit, broken shell, charcoal, and ground bone if best results are to be expected.]

BLACK POLISH FOWLS.

To the Editor: At the Exposition poultry show in November, I saw some fowls that were strange to me. They were black with very large top-knots resembling a large white rose. I would like to know the name of them and where they can be purchased.—J. L., Princeton.

[The fowls mentioned are White Crested Black Polish. The only California birds of this variety at the Panama-Pacific poultry show were exhibited by Jas. Rolph, Jr., of San Francisco, who entered a beautiful trio of matured fowls for exhibition only.]

Farm Poultry for Profit.

[Written for Pacific Rural Press by Susan Ewaysgood, Pomona.]

RAISING THE CHICKS.

What was recently said about White Leghorn chicks applies equally well to Brown Leghorns, Andalusians, Campines and all the small breeds that do not have crests or other ornaments that prevent them seeing their way about.

The first few days feed sparingly of something easy to digest and if possible let them have sweet skimmed milk to drink.

There is one thing that many people do in raising chicks that is not productive of good to either side and that is the mixing of varieties. To mix Brown and White Leghorns does no harm because both varieties are equally active and aggressive but it is not as a general rule good policy to mix breeds. Keep each separate if possible and you will get better results from both.

In caring for Houdans or Polish chicks, attention must be given the crests and beards, for they are great places for head lice, fleas, etc.; also if there are hawks or cats around these chicks are the first victims because they cannot see the enemy. A friend of mine who keeps Houdans carries a small pair of scissors in his pocket and with them cuts the top knots away from his hens' eyes so that they can see better. Houdans are good, hardy chicks but very timid when among others so that it pays to keep them separated.

After chicks are a week old give them some form of green feed every day and keep the young ones clean. If feed is thrown out where it gets wet, be sure it is not sour when the chicks find it, for there is nothing that will start bowel trouble so soon as sour feed. If, by accident, this should happen, clean up the ground by spading or remove the chicks to new ground, as that is the quickest cure.

SOME MEAN HENS.

To the Editor: I have a lot of chickens, no eggs for six weeks and a 40-acre farm to run on. I feed maize and grain in stack, barley, wheat and oats. About half of them are sick and water will run out of their mouths when they are held upside down. The feathers get thick and stick together next to the flesh and seem dirty. Don't find many lice. Feed plenty of gravel and furnish them running water. I have a terrible time making the young pullets sleep on the roost. They want to get in a corner on the ground; also like to hide away at nights. My chickens are of mixed breeding.—H. L. H.

[With plenty of feed, running water and 40 acres of land to roam over, one feels like asking, what more do hens want? But we know that they do need more and that is careful handling and proper housing when they are being raised. And that is where the trouble is in this case. These chickens, you notice,

Poultry Breeders Directory

MAHAJO WHITE ROCKS—Incubator Chicks, $25 per hundred. Hatching Eggs $10 per hundred. The best all-purpose fowl for farms and the most profitable one. Lay well and consistently; best for capons and broilers. Beautiful snow white plumage. Gentle dispositions. Colonize them in your orchard and reap double profits. Send for catalogue. At Panama-Pacific Poultry Show were awarded sweepstake on Cock (295 Egg type), as best utility bird in show. 200 Birds competing. Mahajo Farm, Box 597, Sacramento, Cal.

WE OFFER 10,000 R. I. RED CHICKS during Feb'y at $12.50 per 100. Lots of 1000 or more at $12. Also 1500 Barred Rock chicks at same price. 5000 White Leghorn chicks at $10 per 100, or $90 per 1000. All of these are pure-bred high-class stock. These prices are special to secure early orders. Write us your wants today. Free 65-page catalog. Pioneer Hatchery Co., 620 S. Spring St., Los Angeles, Cal.

WHITE ROCK BABY CHICKS from good winter layers. Booking orders now. Early hatched chicks make early Fall layers. Few Hoganized cocks for sale. Mrs. J. B. Tupper, Ceres, Cal.

ROOFDEN CHICKS are hatching every week. When do you want yours? White Leghorns that are worth while, by hundred or thousand. Black Minorcas, beauties, great layers of big eggs, and a hardy strain. Rhode Island Reds, the breed for meat and winter eggs. We can supply you with prices that are right. Ask us. Circular free. Roofden Poultry Ranch and Hatchery, Campbell, Cal.

BABY CHICKS—All sturdy youngsters from good stock and hatched right. Rhode Island Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

WELL HATCHED AND STRONG day-old chicks from healthy vigorous breeders. White and Brown Leghorns per 100 February, $11, March $10, April $9. Reduction in quantities. Let us send you our announcement. San Jose Hatchery, 373 Meridian Road, San Jose, Cal. Chicks well hatched are half-raised.

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. Lay most when prices highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for heavy laying. Eggs, chicks, stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

WHITE PLUMAGE POULTRY FARM and Hatchery. Sells day-old chicks from healthy, vigorous breeders. White Leghorns at $10 per 100, $90 per 1000. Barred Rocks and Rhode Island Reds at $15 per 100. We sell the Victor Incubator and Brooder. Circulars free. H. A. Schlotthauer, Exeter, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 398, Los Gatos, Cal.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs, Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired Heavy Winter Layers. W. C. Smith, Prop., Corning Cal.

PENN'S QUALITY BARRED PLYMOUTH ROCKS—At the World's Poultry Exhibition, San Francisco, our Western Bred Rocks ranked among the best in the world, both in untility and exhibition points. Catalogue free. Breeding stock and eggs for sale. Golden Rule Poultry Farm, St. Helena, Cal.

WE LEAD IN CAPACITY—THE SANTA CLARA VALLEY HATCHERY AND POULTRY RANCH—We can serve you with the best the Valley can afford; 8 varieties of baby chicks. White leghorns in 1000 lots a specialty. Your correspondence solicited. Information cheerfully given. Route 6, Box 336C, San Jose, Cal.

ALL KINDS OF BREEDING and laying hens, roosters and pullets. Petaluma incubators, new and used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minorcas, Buff White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards, 2550 San Pablo Ave., Oakland, Cal. Closed Sundays.

540 EGG "PIONEER INCUBATOR"—$45 freight prepaid, or $46 on terms of $15 down, and balance in three payments of 30, 60 and 90 days. We ship for your approval before you pay a cent. Free, 32-page catalog. Write today. Pioneer Hatchery, 620 S. Spring, Los Angeles, Cal.

BUFF ORPINGTONS, BUFF LEGHORNS, BOURBON RED TURKEYS, BUFF DUCKS—Winners at Riverside, Pasadena, Los Angeles and San Francisco. Breeding stock. Hatching eggs. Baby stock. Free illustrated booklet. The Ferris Ranch, R. 2, 144D, Pomona, Cal.

WHITE LEGHORNS—RHODE ISLAND REDS—Trapnested and Hoganized. Breeding from not less than 200 egg birds. Booking orders now. Hatching Jan. 25th-June. Monta Vista Poultry Farm, Z. W. Wright & Son, Ontario, Cal.

BABY CHICKS — White Leghorns, Black Minorcas. We guarantee safe arrival and full count. Strong, vigorous chicks. 1916 catalogue contains instructions on care of baby chicks. Free. Lasher's Hatchery, Petaluma, Cal.

INCUBATORS AT MANUFACTURERS' PRICES—To assist the poultry industry, we are making this concession. Write the GEO. H. CROLEY CO., INC., 631-637 Brannan St., San Francisco, for particulars.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

TRAPNESTED S. C. RHODE ISLAND REDS—Blue ribbon winners. Breeding stock, Eggs, Baby Chicks. New sanitary yards. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

BARRED ROCK COCKERELS—$2.50 each. Am booking orders for Rhode Island Red and Barred Rock chicks for February, 15c each. G. L. Hawley, Madera, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorca, White Leghorn stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

WHITE LEGHORNS—Hoganized. Bred to lay. Booking orders now for hatching eggs. $6 per 100, $50 per 1000. No chix. R. H. Dickinson, Los Gatos, Cal.

WHITE ORPINGTONS AND BUTTERCUPS—Hoganized and Tested—220 egg strain breeders. Chicks and eggs for sale. M. S. Woodhams, San Mateo, Cal.

BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trap-nested stock. Fairmead Poultry Farm, Fairmead, Cal.

ORPINGTONS: BUFF AND WHITE—Black Minorcas and Carneaux pigeons. Cockerels ready for service. Susan Swaysgood, R. 2, Pomona, Cal.

WHITE LEGHORN BABY CHICKS that are hatched right, from good stock. Order now for spring delivery. Mrs. G. Logan, Morgan Hill, Cal.

HATCHING EGGS from Hoganized S. C. W. Leghorn two-year-old hens, $1 per setting, $5 per 100. Allendorf Egg Ranch, Kerman, Cal.

EAST SACRAMENTO HATCHERY—Capacity 16,000. Special low price for large lots of chicks. Box 1205, M St. Road, Sacramento, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and cockerels. B. C. Quessenberry, R. 4, Lodi, Cal

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

RHODE ISLAND RED BABY CHICKS and Eggs. Heavy laying strain. Send for circular. Rosedale Ranch, R. 1, Hayward, Cal.

TRAP-NESTED LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue W. G. Suits, 378 Bandini Ave., Riverside, Cal.

BLACK MINORCA, R. I. Red, Buff Orpington Cockerels. Eggs for hatching. Mrs. R. A. Holdridge, P. O. Box 282, Dixon, Cal.

TRAPNESTED LEGHORNS—White and Buff Stock. Eggs, chickens. Arthur R. Schroeder, Box 179B, Mountain View, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

S. C. RHODE ISLAND REDS—Hatching eggs, Baby chicks and cockerels. Mrs. V. P. Hewitt, Dixon, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

BLACK MINORCAS—Cockerels. Reasonble. Chester Fosgate, Quito Road, Campbell, Cal.

HARES AND RABBITS.

LEADING RABBITRY IN AMERICA—Flemish Giants and New Zealands. Cut your living expenses. Catalogue free. Empire Rabbitry, Empire, Cal.

BELGIAN HARES—Young stock for sale. Hurd Bros. St. Helena, Cal.

TURKEYS, DUCKS AND GEESE.

BOURBON RED TURKEYS and eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914. Just as fine this year. A. E. Balmer, Alhambra Valley, Martinez, Cal.

WHITE PEKIN DUCKS—Heavy layers, heavy table-fowls, rapid growers. Eggs, $1.00 per dozen; $5.00 per hundred. Baby ducks $10.00 per hundred. PEKIN DUCK FARM, Santa Cruz, Cal.

MAMMOTH BRONZE TURKEYS—THE BEST IN THE WEST—Extra special prices. Further information cheerfully given. Write now to secure best birds. Geo. A. Smith, Corcoran, Cal.

WANTED FOR COMMERCIAL HATCHERY—Bronze Turkey eggs, Pekin duck eggs and goose eggs. No fancy prices. Address Stag's Leap Ranch, Yountville, Cal.

HART'S BRONZE TURKEYS—Vigorous young stock. Also large yearling hens, $5 each. Eggs in season. Circulars free. Albert M. Hart, Clements, Cal.

THOROUGHBREDS—White Holland Turkeys, White African Guineas for breeding. T. M. Calvert, McFarland, Cal.

FOR SALE—One pen of China Pheasants, one male and five females. J. R. McCoy, R. 1, Box 205 Stockton, Cal.

CALF MEAL STOCK FOOD
SMITH'S
UNIVERSAL
POULTRY FOODS
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SACRAMENTO, CAL.
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HOPLAND STOCK FARM
POULTRY DEPARTMENT, HOPLAND, CALIF.
Best Equipped Poultry Farm in California. Sanitary conditions perfect.
EGGS FOR HATCHING AND BABY CHICKS.
Breeding Pens now mated with large-sized, healthy matured breeding birds. All open-air housed, thus promoting strong sturdy chicks.

STANDARD-BRED SINGLE-COMB WHITE LEGHORNS.

Hatching Eggs, $1.50 per setting	$5.00	per 100
Baby Chicks, Jan. and Feb. delivery	12.00	" 100
" " March "	10.50	" 100
" " April "	10.00	" 100

WHITE PLYMOUTH ROCKS.

Hatching Eggs, $2.00 per setting	$ 7.00	per 100
Baby Chicks, 20c each	15.00	" 100

In the Utility Class at the P. P. I. E. Poultry Show our Leghorns received 4 awards, and on Eggs 1st and 2nd.
Our White Plymouth Rocks received 7 awards, and on Eggs 1st and 3rd.
BOOK ORDERS NOW TO MAKE SURE OF DELIVERY.
Terms—10% deposit with order, balance before shipment.

are mixed; some like to roost high and some low, and to even matters up our friend has allowed them to huddle up in the corners at night. Now he begins to think they ought to perch and they are afraid so they hide.

While they have been hiding in corners they have taken cold; the feathers being sticky next to the skin is proof of colds, which are fast developing into roup.

The remedy is to clean up well, sort the chickens out, put all that have colds or roup by themselves and build the well ones up with good stimulating feeds.

Grain, gravel and range are not sufficient to produce eggs in winter. Your hens need some animal food, beef scrap, fish meal; or better yet, get a few sacks of good ready-mixed mash feed from your dealer and your hens will lay.

Give the sick ones some of the same feed and add a little bluestone to their drinking water. Clean up and spray your houses, and if your young stock will not roost, put about one foot of straw in the hen house so that they can sleep warm without crowding one another.]

SILAGE FOR POULTRY.

An English paper says: "Miss Gillett has built a concrete silo. Her idea is to make ensilage of green maize and lucerne and use it as food for hens. Her theory is that the digestion of so much dry corn as given at present, is a strain on the organs of the birds, which keeps them back, so to speak, and which may be obviated by use of more easily assimilated foods, having an equal constituent value."

STATE POULTRY SHOW AT SACRAMENTO.

[Written for Pacific Rural Press by Geo. H. Croley.]

In connection with the Sacramento Poultry Fanciers' Association, the California State Poultry Association held its first show in the Kirk-Geary building, Sacramento, Jan. 14-18. The hall was well lighted and its size provided room for wide comfortable aisles. About 400 fowls, including turkeys and ducks, of high quality were exhibited. The heavy and general purpose varieties were greatly in the majority. Barred Plymouth Rocks led in entries followed closely by the White variety, while Rhode Island Reds were third in number of exhibits. The attendance was satisfactory but not as great as it should be in a city like Sacramento that is so intimately interested in diversified agriculture. The officers of the associations considered that for a first show it was a success in every way.

Judge Hinds states: "Measured by Standard quality this little show averaged fully up to the Panama-Pacific Poultry show while in Barred Rocks they were ever of a higher average. The method of judging by the use of score cards gave universal satisfaction; even those who failed to take a prize semed satisfied because the score card records the reason for cuts and provides a guide for future breeding. It required three judges two days to place the awards."

Exhibitors reported a number of sales, notably among which was the sale of ten Barred Rock eggs by J. B. Roe of Pasadena to Mrs. James Hay of Lodi at the price of three dollars per egg. These are to be furnished from a pen made up of the first prize cockerel mated to six of Mr. Roe's best breeding hens.

Included among the educational features of the show was an egg testing demonstration and a good display of poultry appliances by Spratts Patent, F. F. Smith & Co. and the Rogers Mfg. Co.

On Jan. 17, the State Association met at the Travelers Hotel to act upon the report of the committee on constitution and by-laws which were adopted as recommended. The by-laws direct that: "The show shall be held each season between Nov. 20 and Feb. 1, and shall not be held in the same city or place oftener than once in three years. Only licensed judges shall be employed to place the awards. The annual meeting shall be held in Sacramento during each September or during the time of the State fair." The name of the association was changed to the California Poultry Breeders' Association. San Francisco, Modesto, Pasadena and San Diego have bid for the next show but the place for holding the next exhibition will not be decided until after April 15; in the meantime any place with a poultry organization may make application to the secretary at Sacramento.

POULTRY NEWS NOTES.

[By Geo. H. Croley.]

At the White Wings Poultry Farm, near Live Oak, the foundation for a new brooder house has been laid. This house will be 60 feet long and is intended to accommodate 2,000 chicks.

At the Los Angeles poultry show there were on exhibition seven breeds of turkeys totaling 53 birds. Plymouth Rocks, made up of four varieties, barred, white, buff, and partridge, led the show with 319 entries.

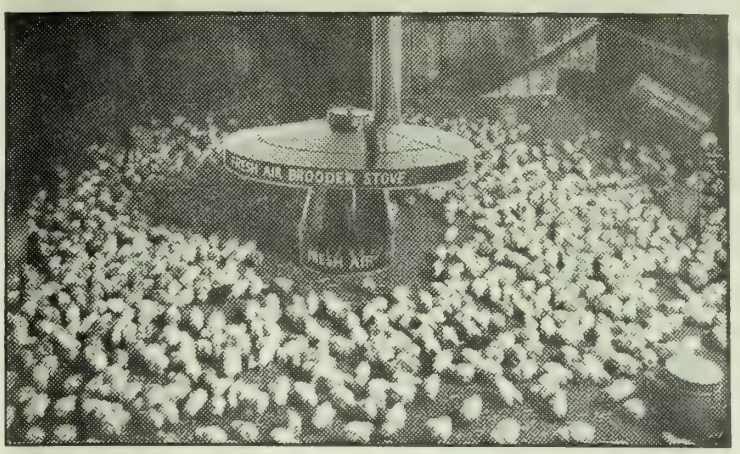
Mrs. D. W. Spragge of Hayward has just received a shipment of trapnested White Leghorns from Mrs. E. B. Martin who captured nearly all the Single Comb White Leghorn prizes at the Panama-Pacific Exposition poultry show.

United States Consul Felix S. S. Johnson, at Kingston, Ontario, reports that the Canadian Department of Agriculture at Ottawa has provided marketing standards in three general classes of eggs following closely the descriptions presented in the illustrated articles that appeared in the Pacific Rural Press during January and February, 1915.

The annual meeting of the Sonoma County Poultrymen's Federation was held Jan. 9 in Petaluma. The financial report for the year 1915 was adopted. This report demonstrates that the past twelve months have been satisfactory for the poultry keepers who are members of the marketing organizations that make up this federation.

At the annual meeting of the Sonoma County Poultry Fanciers' Club, held in the Chamber of Commerce at Santa Rosa, Jan. 6, the following officers were elected: President, J. P. McDonough; vice-presidents, J. H. Fahrenkrog, Dr. F. J. Kinley, J. Evans; secretary, D. Harkness Currier; treasurer, A. H. Currier; directors, Carl A. Lone, B. Foote, Frank Powell, and A. Bellici. The date of meetings was changed to the second Monday of each month.

In the Mediterranean classes we surprised the world with our California exhibits. In connection with descriptions of the show, the following opinions were expressed by noted writers: "If any better ones are produced in this country, north, east, south, or west, we do not know of it."—Grant M. Curtis in Reliable Poultry Journal. "Truly wonderful."—C. W. Pierce in Inland Poultry Journal. "Opened the eyes of the judges."—C. F. Williams in Northwest Poultry Journal. "If there are any better, we have never seen them."—American Poultry Journal. "Finest I ever saw."—Judge A. H. Currier, in Fancier's Monthly.



The Fresh Air Brooder Stove

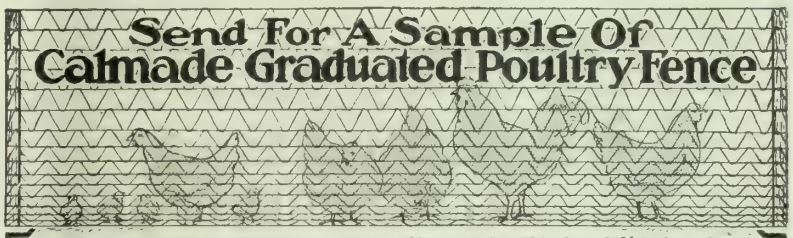
It's greatly improved this season; it gives more fresh air through the base and controls it better than ever. We also have a new combination hot water system with our famous burner that skins anything you ever saw. But we can't tell it all here, so get our 1916 catalog. It's a dandy and you need it.

This ad will appear the first of every month only. Save it.

Fresh Air Brooder Stove Factory

PETALUMA, J. E. Kresky, CALIFORNIA

Send For A Sample Of Calmade Graduated Poultry Fence



10 inches graduated in mesh from ½ inch to 1⅝ inches then 20 inches of 2¼ inch mesh, topped by 4½ inch mesh for the height of the fence.

The Fence Without a Sky Line

It is the most economical as well as the most practical of all poultry fences. It costs no more to buy than the old style poultry netting and costs much less to put up.

It is the only fence made with a bottom mesh smaller than one inch. It will turn the smallest chickens. Because of the straight line, continuous weave of "CALMADE GRADUATED" Fence, baby chicks won't hang in it, large fowls can't climb it.

"CALMADE GRADUATED" Fence will not slip at the joints nor unravel when cut. Uniform in weave and width. It unrolls flat as a board—it is easily put up and stretches without bulge, kink or bend on posts 16 feet apart. Learn all about these advantages and let your next fence be a "CALMADE GRADUATED." Write at once for free samples of wire used, free illustrated folder and name of nearest dealer.

E. H. EDWARDS COMPANY 535 Howard Street, San Francisco

IMPROVED BROODER STOVE



With Fresh-Air Base,

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Through observation car service between Chico, Marysville and Bay Cities in connection with Northern Electric Ry.

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SAN FRANCISCO DEPOT, Key Route Ferry.

OAKLAND DEPOT, 40th and Shafter Avenue.

The Home Circle Page of the Pacific Rural Press

Let's Give the Modest and Princely Prune a Place in the Sun.

Though Monarch of Laxatives, Plebeian Rivals Undermine Him in Public Favor.

Just the other day a suggestion was made that struck the Home Circle staff like a ton of brick.

It is the wisest thought uttered in many a long day about a Pacific Coast product. It touches upon and appertains to Prunes.

Probably everyone has noticed that within the last year a new remedy for constipation has been prominently offered in drug stores. It is a clear, colorless, tasteless, odorless oil of about the consistency of glycerine; but instead of being an animal or a vegetable product it is a mineral oil and is one of the products of petroleum, said to be an unusually refined form of paraffine. It is of European discovery, and is known by many different names, depending upon who markets it. One of its earliest introductions was under the name of Russian oil. It is safe to say that all the brands are all good for what they are intended to do—lubricate and promote the action of the intestines. These oils will "grease your innards" and do it well. Which is all they can do. The Standard Oil, with its usual enterprise, is said just now to be devoting an appropriation of $100,000 to advertising its own particular brand of this latest laxative.

Which moved Mr. Frank Swett, a thinking and substantial farmer and citizen of Martinez, Contra Costa county, to say in the hearing of the Home Circle:

"Here's a profound lesson. If a big concern can profitably devote a fortune to advertising artificial laxatives, isn't it reasonable to believe that the prune growers could afford to spend at least as much on publicity for the peerless natural article? The prune outclasses anything that has ever been employed as an intestinal regulator. It is Nature's delicious medicine, price 5 cents. Besides being a lubricant it is nourishing, and you don't have to pour it out of a 50-cent bottle. It is at one time a remedy, a food and a dessert. And it is infinitely the cheapest. Properly known, the prune need fear no rivalry. The time will come when the world is rightly educated to the rich gifts of the prune, and the medicine shelf will take a holiday and the prunegrower will wear medals."

As education begins at home, this department wants to remind every reader of the simple facts; with no desire to interfere with the delights of dosing, mind you, where dosing is the choice of anyone, but just as a reminder of the fact of the prune.

The prune is on every hand, waiting to be of service, and should not blush unseen.

In order to promote a better acquaintance with the prune, a flock of handy recipes is published herewith, for those who would rather pick an appetizing physic off a tree than brew it out of senna, or munch it as cascara, or gulp it down as salts, or pump it out of the bowels of the earth into their own.

A WAY TO PREPARE STEWED PRUNES.

(This Week's Preferred Recipe.)

Pick over the PRUNES, wash in warm water and rub well; soak over night covered with cold water. Cook slowly, covered closely, till they are tender. Take out fruit with a skimmer, leaving juice; add sugar and lemon to juice to taste and boil about 5 minutes for thin syrup, or longer for thick, and pour over prunes after straining.

PRUNE COBBLER.

Mix well 1 cup flour, 1 teasp. baking powder, and 1 cup milk; add juice from 1 pint of stewed PRUNES, ½ cup sugar, 1½ teasp. melted butter or 1 teasp. melted cottonsced shortening, and then 2 beaten eggs and 1 teasp. salt. Put the prunes in bottom of a greased baking dish and pour the mixture over them and bake ½ hour in moderate oven. Serve with sauces or whipped cream.

HOME PRUNE CAKE.

One cup sugar, 1½ cups flour, 2 eggs, ½ cup sour milk, 1 cup mashed stewed PRUNES, 1 teasp. baking powd., 1 teasp. baking soda, cinnamon and cloves to taste.

After dissolving soda in the sour milk and adding baking powder to the flour, and creaming the shortening with the sugar, add these to the eggs beaten well and add the prunes and spices. To be baked very slowly about 15 minutes.

BAKESHOP PRUNE CAKE.

One pint flour, 2 tablesp. sugar, 1 egg, 2 tablesp. butter, ¼ teasp. salt, 1½ teasp. bak. pdr., 1 scant cup milk.

Sift the dry ingredients together and rub in the butter, after which add the milk and egg well beaten together. This makes a dough, which spread in a buttered pan about an inch thick. On the surface lay split stewed PRUNES, flesh side up, and after dotting the whole with tiny lumps of butter sift powdered sugar over it, and bake. This can be served hot with sauces or cream, or eaten cold.

PRUNE OMELET.

One cup stewed whipped PRUNES, 1-3 cup sugar, 3 eggs, whipped, ½ tablesp. cornstarch dissolved in 2 tablesp. milk.

Mix these ingredients and beat well and bake slowly about 20 mintues. To be served hot.

RICE AND PRUNE DESSERT.

Mix stewed PRUNES and hot rice in a dish, let cool, and then turn out into another dish; dust lightly with powdered sugar and cinnamon, or serve with sauces or sweetened prune juice.

PRUNE SOUFFLE.

Wash ½ pound of PRUNES in warm water; then soak them six hours covered with cold water, then stew till tender in the same water. Drain off the water, remove the stones, rub through a collander, sweeten to taste and beat into a smooth paste. Add whipped white of four eggs; turn into buttered baking dish and bake 20 minutes. Serve hot or cold with whipped cream.

PRUNE FILLING FOR CAKES.

One cup sugar, 1-3 cup boiling water, 1 white of egg, 1 cup chopped stewed PRUNES, 1-3 cup chopped blanched almonds.

Make a boiled frosting of the sugar, water and white of egg; then add the prunes and almonds.

Without making a boiled icing the prunes and almonds can be added to the whipped eggs with ½ cup powdered sugar.

JELLIED PRUNES.

One-half box gelatine, ½ cup cold water, 1-3 pound PRUNES, 1-3 cup corn sirup, 2 cups prune juice, ⅔ cup sugar, ¼ cup lemon juice.

The gelatine should be dissolved in the water. The prunes should be stewed, stoned and chopped. If the juice left is not 2 cups, add enough hot water to make it so, and add this juice to the gelatine solution with the sirup and lemon juice and sugar. When sugar is dissolved, add the chopped prunes, and stir several times while cooling to prevent prunes settling to bottom of jelly. Serve chilled if possible.

PRUNE TRIFLE.

One cup scalded milk, 1½ level tablesp. cornstarch, ¼ cup cold milk, ½ cup corn sirup, ¼ teasp. salt, ¾ cup stewed, chopped PRUNES, 1 egg white.

Thicken scalded milk with cornstarch which has been wet with the cold milk, add sirup, salt and prunes. Cook, covered, for 15 minutes. When cool stir in 1 white of egg well beaten and warm on fire enough to firm the egg. May be served with whipped cream when cold as possible.

PRUNE BROWN BREAD.

Two cups graham flour, 1 cup corn meal scalded, ½ cup molasses, 1 cup sour milk, 1 cup minced PRUNES, 1 teasp. salt, ½ teasp. baking soda.

Sift flour, soda and salt together, then mix in other ingredients, prunes last. Steam for 3 hours.

PRUNE PUFF OR WHIP.

Three whites of eggs, ¼ cup powd. sugar, 1 cup cooked PRUNES finely mashed and beaten.

Whip the egg whites to a stiff froth, adding slowly the powdered sugar while beating; add prunes, beating all together. Bake about 10 minutes in a pudding dish. Serve with a soft custard made from the yolks of the eggs; or with whipped cream. Good hot or cold.

PRUNE PUDDING.

One pound PRUNES, ¾ cup sugar, ⅔ cup bread crumbs, ⅔ cup flour, 1 cup suet, 2 eggs, 1 cup milk, ½ teasp. salt, 1½ teasp. baking powder, grated nutmeg to flavor.

Scald and wash the prunes, remove stones, and chop finely; mix with finely chopped suet and add them to the sugar, flour, bread crumbs, nutmeg, salt and baking powder. Put into a greased mold and steam 4 hours.

SALAD OF PRUNES AND NUTS.

One-fourth pound nut meats, shredded, ½ pound PRUNES, stewed and shredded, 1 cup thick cream, whipped and flavored with paprika, salt, lemon juice; and sherry wine if desired.

Cook the prunes as usual, except that the liquor must be allowed to nearly evaporate and the prunes taken off fire while still firm, to permit of slicing when cold. Mix the prunes and nut meats and sprinkle with salt and paprika, and mix with most of the whipped cream. Put a spoonful of this on each individual plate on lettuce leaves. The remaining whipped cream can be used to put on top as garniture, with nutmeats and sliced prunes.

AN ODE TO THE PRUNE.

By Fred Schaefer.

O mellow Prune!
O gentle, healthful laxative,
To thee this tune
I'll warble all the years I live:
"Thou shieldest me from ills,
Most frabjous of all fruits;
Pale people could sidestep pinkish pills
As substitutes—
(As substitutes for thee, O Prune)
if they ceased to underrate you—
And ate you!"

THIS WEEK'S BEST HOUSEHOLD HELP.

Keep a 10-pound box of PRUNES always on the pantry shelf, and serve some of them in some form daily!

EXPERIENCE EXCHANGE.

Here is that chocolate pie recipe for the Porterville reader. It is sent by A. J. of Berkeley: 3 tablesp. ground chocolate, 1 tablesp. corn starch, 1 cup sugar, 3 tablesp. cold water and yolks of 2 eggs beaten light. Stir water and corn starch until smooth, add 1 cup boiling water to the chocolate, add sugar, corn starch and eggs in the order named, beating all well; add a pinch of salt and flavor with vanilla. This is the filling. Pour into crust which has been baked separately in a pie pan. Place on top meringue of whites of eggs and brown delicately in oven.

In reply to a subscriber who asks for an onion and celery sandwich recipe, the following is offered: Soak a good-sized onion and one head of celery in cold water for an hour; drain and cut in small pieces, mix with French dressing and spread on buttered bread.

MRS. BEST'S BULLETIN.

My dear Friends: Just as I have suspected, they have arrived—the dashing, flashing, clashing models of the daring springtime fashion.

The new garments are in such a variety of colors and patterns that it becomes a guessing game with the stores. They perforce must gamble with the tastes of their patrons. Some are going to win and some are going to guess wrong. There seems to be no average upon which to rely without chance of disappointment, I means in patterns. They are so various.

Of course the modes that have reached the coast agree well enough in cut. There is the flaring collar, the flaring coat, the flaring skirt, and the shortness of said skirt. There is also the rather wide belt, sometimes sewed to the coat and sometimes separate, and the sleeves with the new cuffs.

But the patterns and colors! As one friend expressed it, every woman can be a Josephine of many colors.

Almost any color you wear will be in style if you console yourself like the dialect comedians. One said:

"I see you still vear a vite vest, Shulz. But der fashion iss mouse-colored vests."

"I know it, Schmidt—but diss iss a mouse-colored vest like vite mice."

One pattern I saw was in black and white checks of small size, the trimming being plain green silk on the collar and cuffs.

Another was in violent large checks, subdued only by a gray block alternating with the black and white.

Still another was of wide white and nearly-black stripes, the stripes broken to run the other way at the bottom of the skirt half way around to give a panel effect in front.

In solid colors there was a cerise affair with a very narrow white edging.

One coat to be worn with your choice of skirts was in riotous burnt orange stripes modified by stripes of lighter yellow tones.

High boots of cream kid were shown to accompany this new style in walking costumes.

Hats, both broad-brimmed and turbans, are offered to complete the costume. Many of the wide-brimmed hats are quite simple as to trimming, but the covering is in wide white and colored stripes.

On the whole, I think the Easter parade will be worth looking at. But more anon.

Devotedly,

ROSABELLA BEST.

Very Much Alive.—One day the teacher of our school was explaining what conscience meant. She said, "It is that little voice within us which whispers to us not to do any wrong." Little Willie then raised his hand and said: "I know what you mean. Yesterday when I would not go to the store for my mother, it growled at me."

As It Is Done.—"Well, I made $2,000 this month, enough to pay all my debts." "What kind of car are you going to buy with it?"—Harper's.

HOMEWARD BOUND.

Homeward bound! Homeward bound!
Countless sailors on life's sea,
Sailing onward, sailing ever
Toward the vast, the bright forever,
On ships of destiny.

Do we know, we troubled sailors,
That the sea on which we rove
Is the vast and boundless ocean
Of the Father's changeless love?

Know we that the clouds above us
Are but shadows of God's hand?
Guiding, pointing, ever beckoning
Onward to the better land.

And the floods of sunshine round us
But reflect His gracious smile;
Warming, lighting, cheering strengthening
As we ever onward sail.

And the countless stars far shining
Are great spirits gone before—
Brightest beacons to direct us
To the far-off heavenly shore.

When the night shuts down around us
And the sunlight hides from view,
Then new stars are set in heaven
Just to keep our course more true.
—Seattle Post-Intelligencer.

LUMP SUGAR AND THE PRINCESS.

Lump Sugar was the poorest child in Candytown, and had to work as a servant for the Bonbon family, who did not treat her at all nicely. They made her scrub the floors and wash dishes all the time that she was not running errands for the Bonbon girls or hooking their many dresses up the back.

One night the Bonbons gave a large ball in honor of a visiting Candy person, whom every one called the Crystal Princess.

The Bonbons made Lump Sugar almost run her legs off getting ready for the party, but when she timidly asked if she might be allowed to stand in a corner and see the guests come in Strawberry Bonbon said: "Of course not! You must stay in the kitchen, for you are not fit to be seen by our stylish guests."

Poor Lump Sugar! She went back into the kitchen and cried and cried.

Soon the guests—the Taffys, the Caramels, the Nougats and all the rest of the Candy people—began to arrive. The Grasshopper Orchestra played madly, and the Bonbons, who were looking their prettiest, stood in a row, saying charming things to their guests—no one could have imagined how disagreeable they often were to poor Lump Sugar.

But when the Crystal Princess arrived even the Bonbons were cast in the shade, for she was the prettiest of all. All the Candy boys circled around her and begged for dances. Young Sweet-Chocolate got the first one. After they had danced—and a wonderful dance it was—the Crystal Princess asked for a drink of water. "I'll get it for you," said Sweet-Chocolate, and he ran out to the kitchen, where he found Lump Sugar in her old dress, sitting sadly in a corner.

"Well, Lump Sugar," he said, "why aren't you at the party?"

Lump Sugar said nothing, but looked sadly down at her poor old dress, and Sweet-Chocolate guessed the reason. "Wait a moment," he said, and rushed back to the ballroom, where stood the Crystal Princess. He whispered something in her ear, and the Princess smiled and went with him to the kitchen.

Lump Sugar rose with a start and stared at the Princess, and the Princess stared at her. And as they stood there together Sweet-Chocolate had to pinch himself to make sure he was not dreaming—for in spite of the difference in their clothes he saw that they looked really alike!

"Who are you?" cried the Princess distractedly to Lump Sugar.

"Why, I'm only Lump Sugar," stammered the other.

"Oh," cried the Princess radiantly, "if you are Lump Sugar you are my own sister, for whom I have been looking everywhere—for my name is Sugar, too, only I am Rock Sugar, or Rock Candy, as they sometimes call me. Our different garments are just an accident, and inside we are of the same blood, and that is the purest and best in all Candytown. And now you must come back with me to the party while I tell them all the good news!"

Lump Sugar could hardly believe her ears, but it seemed that she and Rock Sugar were really sisters, only Lump Sugar had been dropped out of the baby carriage by their careless Sugar-Cane nurse when they were little, and so lost. When the Candy people heard the news they were delighted, all except the Bonbons, who could hardly conceal their mortification. Lump Sugar went away that very night to live with her sister in the Sugarloaf Mountains, and they had the most beautiful times you can imagine.

Sweet-Chocolate was often asked to their house for parties, but the Bonbons, never—at least, not for a long time.

ROSE PLANTING TIME.

Now is the good time to plant roses. The bushes become well rooted, and with good care in the spring they will respond with a wealth of blooms.

Among the best roses for show purposes are Maman Cochet, Mildred Grant, Hugh Dickson, Duchess of Sutherland, Caroline Testout, K. A. Victoria, and White Maman Cochet.

For home decoration, however, plant Lady Roberts, Lady Hillingdon, Etoile de France, Safrano, Madam Melaine Soupert, Jules Gravereaux, the Duchess, La Tosca, the always popular American Beauty, Helen Gould and Marie Van Houtte.

Among the climbing roses, the pure white old-fashioned La Marque is considered the best of the climbers, the Marechal Neil, Gold of Ophir; the Cherokee both single and double, the San Rafael (Beauty of Glazenwood) the Wm. Allen Richardson, the Climbing Bridesmaid, and the True Friend or Climbing Cecil Bruner can always be relied upon.

SCHOOL MOTHERS' CLUBS.

The school Mothers' Club has come to stay, and every woman, be she a mother or not, from now on should take serious consideration of it as a form of womankind's modern usefulness. It is a development of feminine activity that is of incalculable importance to the state and nation. It is demonstrating woman's worth in citizenship.

A thing well worth considering is that in the interest of parents in the education of their children, especially of the mothers, the protection and stabilizing of the American public school system lies. With the American family for it, nobody can undermine it; and with the mother for it the family is for it.

HOME-MADE BONBONS.

There are two ways of making bonbons at home—the hard way and the easy way. The hard way entails making fondant, or cooked creamed sugar, as a preliminary step, after which one proceeds to mold candies out of it. Another way and quicker is to stir up some confectioner's sugar and mold candies out of it. Confectioner's sugar, so called, is a very finely pulverized sugar, usually sold under the name of powdered sugar, and is spoken of as confectioner's sugar because it is used by confectioners for wedding cake icing. It is not often sold in groceries, which seldom have a call for sugar of such fineness. By the way, many people do not have success with elaborate icing recipes calling for a stiff icing because they do not get the right grade of powdered sugar. The XXXX is the thing.

For a small batch of easily made bonbons, take the white of one or two eggs, with a teaspoonful of water to each egg, and stir up enough of the sugar with it to make an easily molded light cream. Now of this you can shape your bonbons, after adding a bit of flavoring to various portions of the cream. This is done by stirring into the portions respectively a few drops of vanilla extract, oil of lemon, oil of orange, oil of peppermint, oil of wintergreen, etc. The various oil flavors are very pungent and should be most sparingly used if a delicate flavor is wished. There are vegetable colors obtainable for coloring these candies but it is not worth the expense. A pretty fair green may be obtained by using the juice of spinach leaves. Grated orange peel put into a mixture of alcohol and water will provide both a flavor and color for a portion. Nuts, slices of citron, candied cherries and pineapple provide garniture or filling for the various bonbons, in fashioning which the greatest ingenuity can be used.

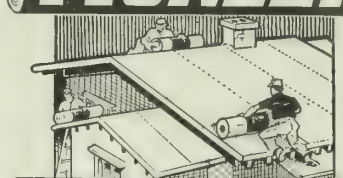
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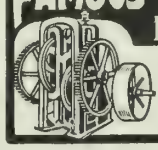
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Unappreciated. — Auctioneer (at art sale, reproachfully)—"What! No advance on three shillings? Why, the picture by itself is worth that!"—Punch.

She Agreed.—Mary—Mrs. Delaney says her little girl has learned to play the piano in no time. Alice—Yes, I heard her playing just that way the other day.—Life.

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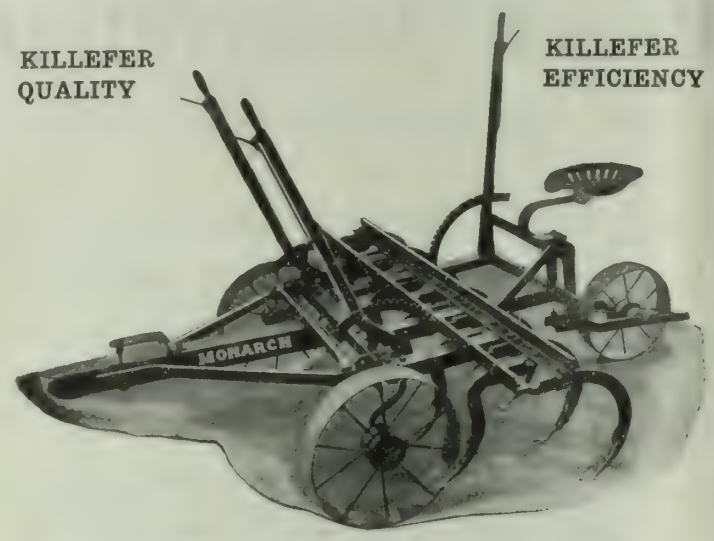
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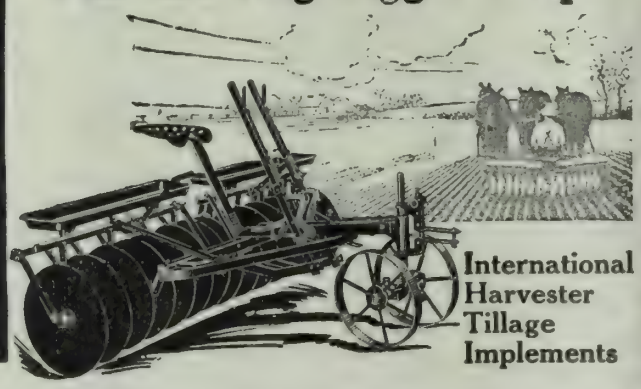
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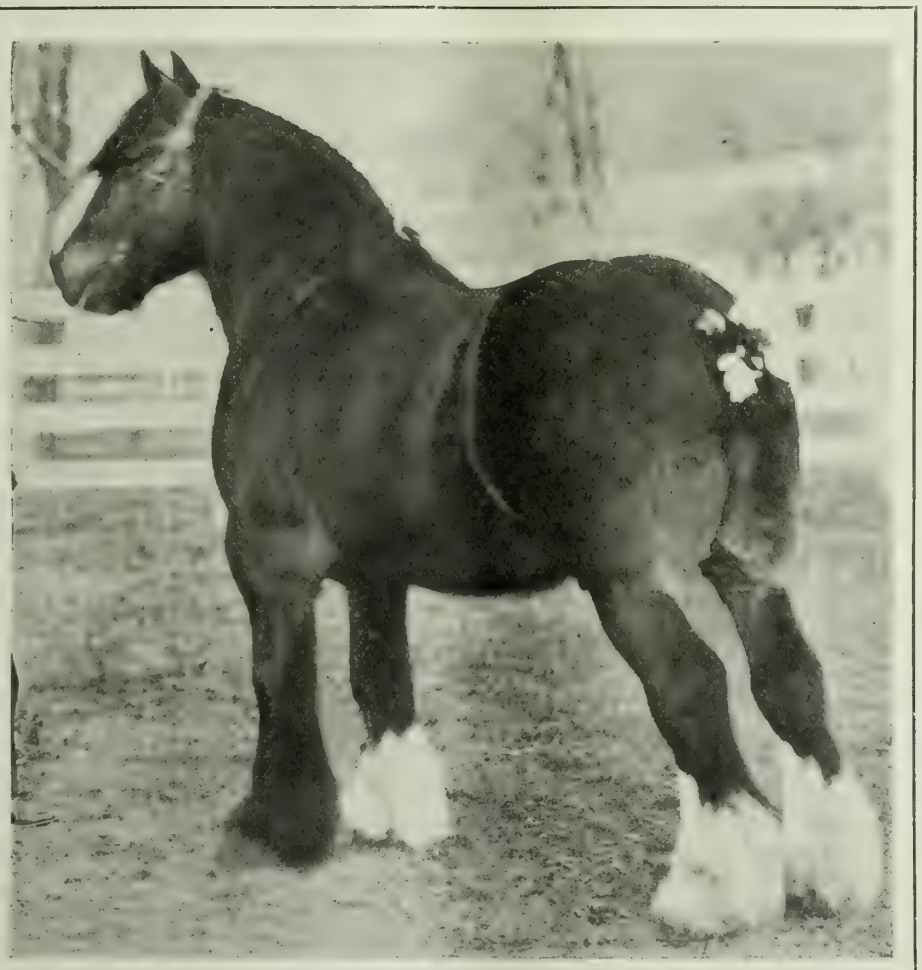
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Raising Horses for Farm and Market.

An Instructive Outline Showing a Constructive Way Out for the Horse and His Position with the Farmer.

[Written by Gordon F. True, University Farm, Davis.]

WHILE horses are as a class the most valuable of the domestic animals, less apparent thought is given to their breeding by farmers than to the other classes of stock, cattle, sheep or hogs. One reason for this is to be found in the fact that on most ranches the horse stock is kept primarily for work, and such colts as are raised are considered in the nature of a by-product —they are incident to the keeping of horses rather than the result of a purpose in keeping them. Another reason is to be found in the high price of stallions. Thus the high value of the animal which should furnish an incentive to the best effort and thought becomes an excuse for the lack of care upon which success in any line of breeding must depend. The proper care of a stallion is a more or less exacting task, requiring more time, patience and special knowledge than most ranchers feel that they can give. Few men on ordinary sized ranches have enough mares to justify the purchase and maintenance of a stallion for their individual use, so the habit has grown up of depending on the chance that some one else in the neighborhood will provide a horse, the services of which may be secured. Thus the mare owner, instead of breeding systematically to stallions of his own choice, uses such a one as happens to be standing in his neighborhood. Too frequently this horse is not of a kind that would be expected to sire the most desirable offspring.



THE SHIRE STALLION STOW ROYALTY,
Purchased by E. W. Westgate, Jr., from Truman's Pioneer Stud Farm, for Use on California Mares. A Prize Winner at P. P. I. E

Company Horses.—It would naturally be expected that in the company horse the solution for the difficulties suggested might be found. But the system of selling horses as they are too frequently sold to companies in the West is such as to make the stallion cost his purchasers two or three times his real value. Upon delivery, he is usually too fat for best results in the stud, and upon letting down in flesh very often loses that fine appearance that made him look worth buying when offered for sale. I am not finding fault with the stallion dealers. They are usually enterprising men who, working on the principle of the great P. T. Barnum, who believed in doing the people as they wanted to be done, have placed many good and less good stallions in communities where otherwise probably no horse would have been bought. As some one else has put it, our farmers, instead of buying stallions, wait to have horses brought to them for sale—and take what is brought too frequently without much question. This thing has been carried so far in California that the average mare owner would be scared if a right good horse were offered him at a reasonable price. Too frequently the best mares on the place are sold—because the best find most ready sale—and those that are too small, too ungainly in conformation, have blemishes or even unsoundness, are kept on the farm and become the breeding stock. A man who makes a business of breeding farm animals finds it necessary to keep the very best that he can raise in order to reach high rank as a breeder. The wise breeder never prices the best females in his breeding herd.

As to the future of the draft-horse industry of the country no one can prophesy with certainty. The fact that good heavy horses were never harder to buy in California than at the present time, is sufficient evidence that there is demand for the better classes of draft horses. The fact that the work horses of Europe have been driven into the mill of destruction during the past two years should furnish assurance that for the next decade at least there will be a demand for sound horses suitable for heavy work.

The Kind to Raise.—I have been asked to write on raising horses for farm and market. The farm should raise the market horse and the market horse should, up to the time of his sale, do the work of the farm. It is a mistake to consider that there are two types of heavy horses—one for farm work and the other for market. The farmer should aim to produce from his work stock the kind of horses the market demands, and the kind of mares that can produce market stock should do the farm work. There is no reason for trying to maintain an idle breeding band of mares. The best pure-bred horses from the European countries are grown from mares that work every day of their lives on small farms. Our own market animals should be grown in the same way. The fine heavy horses shown in the harness by McNab and Smith at the Panama-Pacific were all purchased in Iowa and Ohio. There could be no stronger evidence than this that there is a demand for good heavy horses for work on the streets of the Coast cities, and that the California farmers are not meeting this demand. There could be no more conclusive evidence that the right kind of stallions are not being used in the state, and therefore no stronger proof that the

(Continued on page 143.)

PACIFIC RURAL PRESS

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., January 25, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	3.65	24.84	23.05	56	38
Red Bluff	2.48	15.80	13.31	56	32
Sacramento	1.28	13.55	10.01	54	32
San Francisco	2.54	20.29	11.72	56	40
San Jose	1.58	12.60	8.49	60	34
Fresno	1.38	7.72	4.88	54	36
Independence	.64	7.97	4.83	38	—
San Luis Obispo	2.22	18.35	9.61	58	32
Los Angeles	1.67	14.59	7.32	64	42
San Diego	1.04	8.12	4.79	60	46

THE WEEK

A Solano county reader calls upon us to crown Rehart, the Oregon weather prophet, as the court prophet of this imperial outfit. He says he has watched Rehart for eight years and his forecasts have arrived every time—hitting the mark even in a year when we said he had missed it. That surely is pretty good for Rehart, and we would be inclined to proclaim him our original and only weather prophet were it not that he seems to be manifesting this year such a disposition to overdo it. It has always been that way with prophets; people have wearied of their excess-efficiency and have, too often, rocked them to sleep. We are loth to subject Rehart to that peril. Besides, he is near enough now, we should judge. He is giving us this month Columbia river weather, and if he should move nearer we fear he might bring down upon us all the weather-resources of Alaska. Thank you sincerely, Mr. Rehart, but will you not please quit now for awhile and allow us to get to plowing and planting uplands and draining the lakes on the lowlands? Califoria is famous for plenty of time to work between the rains, but so far this month it has been impossible to get even a fork handle between the storms. The teams are eating their heads off and gasoline is going up all the time!

Our Colonels Are at It.

Col. Weinstock directs his howitzers at the other colonel's position on another page of this issue, and, so far as we can see through the smoke, he succeeds in landing some shells in Col. Irish's onion patch, and it looks as though the latter might have to pull some of his fragrant bulbs out of the sky. The reader will notice the Alphonse-Gaston attitude of the combatants in this contest which we have provoked. Personally, so far as we know, they are old friends, but they hold contrary views of problems in economics and citizenship. They seem to be willing to gladiate a little, not to serve any ill-will or dislike, but for the patriotic purpose of leading our wide constituency of farmers to a careful consideration of concrete facts and governmental theories involved in the rather new line of public service which the present administration of state affairs has entered upon. Col. Weinstock honestly believes this new service is greatly for the public good, and therefore defends and promotes it. Col. Irish, whom we persuaded to act, so far as his inclination and leisure would permit, as protagonist in support of the old, independent and self-reliant initiative and enterprise which have made America great, has no forensic superior in this country. He is president of the Delta Association of farmers, which is creating a new Holland in the center of California. Both the colonels are busy men who have done great work in the world and have much such work still to do. They are therefore engaged in no pastime to amuse our readers, but both feel, we trust, that they can afford to give a little time to the awakening of California farmers to thought and knowledge of the things which are now going forward, largely in their name, but the ultimate significance of which they are not sufficiently nor very seriously considering. Therefore, go to it, serious reader, while it lasts, for it means edification to you—and of course you are entitled to get what entertainment you can also.

To Have a Real Try at Paternalism.

While the discussion noted in the foregoing paragraph continues, and we hope it will continue at least until fundamental differences in policies are made clear, it is interesting to know that one phase of paternalism is to be practically tried out, and that is assisted or endowed colonization. As our readers know it is working well in other parts of the world. Will it work here and with what results? Only demonstration can determine that and only demonstration can show how it is best to work it here, if it does succeed. The most logical place to make the trial is clearly on the lands under the government irrigation works, for that warrants the government participation, and the government has a motive of its own in demonstrating that such reclaimed arid lands can be profitably farmed. And so Professor Ellwood Mead, who has for several years been exiled from his native country in the assisted colonization work in Australia, makes it a part of his work in the University of California to demonstrate the success of assisted settlement under irrigation. The proposition to provide settlement of such lands in such way has been under consideration by Secretary of the Interior Lane for the last two years, and he has approved of the general suitability of the undertaking to meet the government's problem in handling such lands for the public good. The experience of Government projects, and private projects as well, has shown that if we are to continue in this country the policy that was inaugurated with the Homestead Act, that of enabling the man of little capital to become a farm owner, it will be necessary through organization to reduce the preliminary expenses of development, such as building the house, leveling the land, etc., and to provide the money needed for improvements under conditions not now possible to commercial banks, which are a longer time for repayment and a lower rate of interest than prevails in any of the Western States.

An Outlook for School-Made Farmers.

There is another outlook for this interesting experiment, and that is its light upon the young men which the schools are trying to interest in farming. W. C. Wood, commissioner of California secondary schools, states that, on investigation, he finds that the majority of those taking farming instruction in these schools are city boys, and Prof. Crocheron finds it the same way in the University—that is, fewer than one-third of the students in the College of Agriculture are from the farms. Mr. Wood accounts for the fact in this way: "The country boy realizes that after he finishes a high school course in agriculture he will have to go to work for farm wages, unless he has capital that he can invest in land. Therefore, the country boy does not take the course in agriculture, but prepares for city life instead." Now, by this line of reasoning, the city boy takes agriculture because he does not know what he will be up against. But that would not be strictly true because many of the city boys have daddies with land or money who can stake them in rural pursuits, and desire to do so rather than have them take city chances. But Mr. Wood says also: "I believe that a plan of rural credits is the solution of the problem of keeping the country boys on the farm. Until the boys can see something in agriculture besides farm wages, our courses in agriculture will not be popular." From this point of view the demonstration, which it is likely will be made on the irrigation projects, will be intensely interesting and important. It is not to divert from city to country, but to help the country to hold its own.

How This Trial Will Be Made.

The present plan for making a trial of such colonization is to take two moderate-sized irrigation projects, one at Orland, and use the "excess land" which the owners are required by the law to sell so that no owner shall have more than forty acres. The tentative scheme of procedure is as follows: The government will buy this land from the "excess-owners," at an appraised valuation, subdivide it, and sell it to settlers as the law requires. Sales will be made only to purchasers who can give satisfactory evidence of character and of farming experience and suitability. Such purchasers will be required to pay down 5 per cent of the value of the land—the remainder of the purchase price to be paid in 31½ years in annual installments of 6 per cent, of which 4½ per cent shall be interest and 1½ per cent amortizing payments on the principal. No sale can be made to a party owning land elsewhere, and the party must have whatever amount of available cash for working purposes the Secretary of the Interior may determine. The government must supply a practical farm adviser for each project and on his recommendation a settler may secure advances of money from the government in amount from $600 to $2500, according to the size of the farm, etc., for buildings, stock, tools, etc., and this advance must be repaid at the rate of 5 per cent per year, of which 3½ per cent is for interest and 1½ for amortizing. The foregoing schedule of interest, payments, etc., is based upon experience in Australia. It will be for the Secretary of the Interior to determine what terms shall be adopted for use in his department.

The proposition to proceed in some such way has the approval of some of the owners of excess lands in the Orland project who will urge its acceptance upon others. It has the hearty support of the University of California authorities and of Governor Johnson. Manifestly such a scheme will be most successful if developed gradually, and for that reason the two projects named above were selected, as they would not involve an exceedingly large outlay. In Colorado the Governor, the college authorities, and practically everybody favor the movement; much more interest being manifested there than in California, thus far.

A Good Week's Work.

Last week was, and will probably remain, quite notable in California agricultural history as the culminating time for two considerable undertakings in co-operation. As briefly stated in our last issue, the prune growers entered upon the first phase of a state-wide organization through the action of a large convention in San Jose on January 19. In this issue will be found in full form the organization papers adopted on that occasion. These papers show what the committee did in 1915 and the form and purposes of the organization undertaken for 1916, as advised by that committee. It is up to the newly constituted Central Committee of the new organization to adopt their own rules for action and outlines of policy for local organization in all prune districts and for the financing of the undertaking. If the substantial support of the prune and apricot growers can be secured, the way suggested to secure funds for operation ought to yield money enough to do something adequate and efficient. As we see it the first need is an executive secretary, who has knowledge of prune handling, mastery in business methods and enterprises and something like genius in publicity work. He ought to know what the things are which influence the sale of prunes and how to get hold of them. He should have ability and initiative enough to put up to the committee all the facts necessary for their intelligent action — whatever facts they themselves know will then be a working surplus. He ought to be able to organize the most accurate and comprehensive system of supply and demand reporting for the whole world which has ever been constructed; also the best way to make the resulting information available to participating growers. Of course it will take some money to get such a man, but unless such a man is found and he is adequately supplied with funds for expenses, clerical force and good headquarters from which to work, his employers cannot possibly rise to their opportunity. If the prune growers should think they can get along with an ordinary bump-on-a-log secretary they might as well go back to the woods.

The other event which will make last week notable, is the completion of the incorporation of the California Peach Growers, which was reached in Fresno on Saturday. At that time the articles of incorporation were signed by the seven directors elected on Friday by the 25 trustees from different parts of the State, as described on page 92 of last week's Rural Press. The directors elected are named on another page this week. According to resolution, the association will proceed to business as soon as capital stock to the amount of $600,000 is subscribed and 75 per cent of the acreage of drying peaches is under contract. The directors remained in session during the first part of this week preparing the form of contract and otherwise getting ready for work. A manager, president, vice-president and treasurer will be elected by the directors. When this is done the effort for acreage-contract signing will proceed. Thus, although there is plenty of work still to do, the birth of the association will date from January 23—with the length of life still to be determined by the peach growers.

Queries and Replies.

Querists must give name and address.

The Corn-Ear Worm.

To the Editor: Is anything good to prevent worm in corn? And if they are worse in yellow corn than white corn?—C. L. M., Manzanar.

During the last half-year we have printed accounts of the success of M. L. Germain of Los Angeles by dusting the silk as soon as it appears with lead arsenate powder and of Samuel Haigh of San Jose, who sprayed the silk with creolin—one tablespoonful to one gallon of water. Both gentlemen emphatically declare that they practically saved the corn by their treatments. We have seen no difference in kinds of corn affected.

Roots for Cherries.

To the Editor: Can you tell me what are the relative merits of Mazzard and Mahaleb roots for cherries on well-drained valley land?—H. W., Napa.

There is no reason known to us to depart from the decision of the pioneer cherry growers that the black Mazzard is the best root for cherries on such land as you describe, providing the soil is retentive enough to hold a good moisture supply to hold the tree in vigor after the fruit is gathered, or if an irrigation can be given at that time. The Mazzard is, however, liable to fail to support the top growth if there is too much standing water in the winter or too great drying out in the latter part of the summer. Where these conditions are liable to occur the Mahaleb is the hardier root. If this is not right will some grower correct it?

Mint Growing.

To the Editor: I have been requested to furnish information regarding the growing of spearmint. Do you know of any publication that will give the methods of growing and handling mint commercially? — G. W. H., Marysville.

Send to the United States Department of Agriculture, Washington, D. C., for "Farmers' Bulletin 694," which gives full details. Mint is started by planting the roots of the right kind. There are varieties of mints which do not yield the desirable flavors. After establishment mint is grown as easily as alfalfa and the crop is handled with the same mowing and gathering machinery. The oil is secured with a very simple kind of still, consisting of any kind of a steam boiler, with covered wooden tanks fitted with proper valves and a tin "worm" in a condensing tank. But no one should go into mint growing without being sure of two things: first that he has the right plant, and second that he has found a customer for the oil. It is so easily produced that an over-supply is constantly threatened, and it is useless to think of growing the crop without having the oil-making adjunct provided for in some way.

Late Crops on Overflowed Land.

To the Editor: I have land subject to overflow. It is sometimes impossible to get on it until the middle of June. It has never been cropped, but an analysis of the soil shows the presence of all the necessary mineral plant foods. How late would it be practicable to plant milo maize, beans or Indian corn, on this land?—W. R. N., Davis.

It is perfectly practicable to plant sorghums of different kinds, beans and corn on such land when it gets into good working condition after overflow. The amount of growth of these tender plants will depend upon the date at which early autumn frosts arrive. It will require about 110 frostless days to get a seed-crop of corn or beans; some sorghums will come through faster. If, then, you are liable to get a frost in September or October, as is the case on some interior lowlands, there is a chance for losing-out. But if you have stock to feed green or by the use of a silo, you can use such land for sorghum and corn to advantage. As the land has not been cropped it is wise to try in a small way at first with different plants to see if the soil is not sour or otherwise unready for production.

Pears or Dates for Alkali.

To the Editor: What variety of prunes and apricots are best for this locality; also the best time to plant? The land I want to put the prunes on is heavy black loam, and there are a couple of spots that show a little alkali. Would prunes do well on these spots, and if not, what kind of fertilizer would you suggest? What distance is considered the best to plant?—M. B. S., Hanford.

We would not plant anything but pears and dates on land suspected of being alkaline, and we would not plant even those fruits where either the suspicion or the alkali were too strong. On sweet land in your district the Royal, Blenheim and Tilton apricots are most likely to do well, and for heavy land they ought to be on myrobalan roots. The same is true of the French prune, which is the only one we would plant except as an experiment. If the alkali is not too strong, gypsum will take the edge off from it, but the only cure is underdrainage and fresh water on top to wash it into the drains. The fruits mentioned can be planted at 24 or 28 feet distances.

Vegetables for Winter Growth.

To the Editor: I take your valuable paper for the benefit of the Eighth Grade of the Campbell Grammar School, and they would like to know a list of vegetables that could be planted with success this time of the year in the open ground. Would you suggest rhubarb for a school garden plant? Where could we get our plants? Could we use the stems this spring?—W. B. K., Campbell.

It is easier to say what not to plant now for the list is shorter. If you omit beans, corn, cucumbers, eggplant, melons, peppers and tomatoes, you can plant from this time onward all other vegetables which are commonly grown in field and garden. But to succeed now you need a soil which readily disposes of surplus water and your garden should not be in a low, very frosty place. Light frosts do not injure vegetables—except of the kinds mentioned above. Crimson winter rhubarb is growing freshly now in our garden, and unless the plants are so newly started that they need all their foliage for their own establishment. the stems are available all winter and spring. You can get plants from any of our seed and plant advertisers.

Quick Interpollenation System.

[Written for Pacific Rural Press.]

Interpollenation of different varieties of fruit is a difficult subject to determine accurately, and quite often the results of one or two experiments are refuted by other experiments.

An easy way to test out the value of different fruit varieties for pollenizing unproductive trees in one's locality was devised about ten years ago by Eugene Anderson of Contra Costa county. Instead of taking years to test it out by planting several varieties alternately, or of doing it a little quicker by grafting other varieties in, he took blooming branches from different vareties of trees and hung them into the trees which were not producing, and which he thought might need a certain kind of pollen. In order to keep these branches fresh until they should have matured their pollen and spread it abroad, he hung up old-fashioned fruit jars, which had wires across the tops, filled them with water, and set the branches in them.

He had already grafted all the other varieties that he could get in Contra Costa and Santa Clara valleys, with no success either by grafting single limbs or whole trees. But in testing out the use of blooming branches, he found a seedling tree in Alhambra Valley, along the railroad right-of-way. Two branches of that tree which were hung up in bottles in one tree of his own cherry orchard, seemed to do the work; for he got a crop on that tree, but none on any other in the orchard.

The tree from which he had taken the pollenizing branches was pulled out by the railroad company before it was propagated, so the only blossoms that would pollenate Mr. Anderson's orchard were lost, and the orchard has been pulled out.

Experiment Started Others.—But Mr. Anderson had taken time to write his experiences for the Pacific Rural Press, and Percy Douglas, who is now Horticultural Inspector in that section, read the article. He had a plum tree from which he had never gotten a taste. Mr. Anderson's suggestion in the Pacific Rural Press seemed easy to carry out, so he suspended branches of other varieties of plums to the tree and got a crop of fruit. As it happened, the fruit was no good, and Mr. Douglas remarks that was why it had never borne. However, the experiment enabled him to pull it out and replant with a good variety.

POMEGRANATES IN TULARE COUNTY.

To the Editor: Will you kindly give facts about pomegranate growing in eastern Tulare county. At what distances apart are they planted and which is the best variety?—Reader.

[Answered by E. W. Killian of Exeter.]

Complying with your request that I answer these questions, I will give you the facts as I got them from Mr. Buck, foreman of the Merryman Ranch.

They have five acres of Ruby pomegranate trees, about ten years old. One acre of this is on sand and amounts to practically nothing.

The trees are planted 22 feet apart. The fruits are packed in half orange boxes—each box holding about 36 fruits. Heretofore they have marketed them, by putting a few boxes of fruit in each car of oranges. This year they sent one car to the Chicago and one to the New York auction. Last year they realized $2200 from the crop and this year they expect to realize $2600.

The Ruby is the best variety for the market because of its rich red color. The Mission variety is the best to eat, but is not marketable because of its poor appearance. There may be a market for a limited amount, but I personally would not care to plant them largely.

HUNGARIANS AND CAROBS.

To the Editor: "Old Subscriber" from Penryn should quit pruning his Hungarians. Ever since (for five years) I have let them grow, simply cutting out the suckers, they have never failed to bear a large crop.

Is there any information available regarding the varieties of carob trees (Ceretonia siliqua) grown in California? I planted several dozens of them two years ago and I am rather doubtful about the varieties sold by the California nurseries. At least, if the fruit (pods) exhibited at the Panama Exposition was a sample of the variety grown in the State it was a very poor one indeed, when compared with those that can be found in the European markets.—**A. Isaak,** Lincoln.

[Non-pruning usually helps fruit-setting, but you must do a lot of propping to keep your trees from breaking. Besides, if you are growing other plums how do you know that they are not being cross-pollinated and helped that way? As for carobs we doubt if much attention has been paid to varieties, but some one who has taken the trouble to import good varieties may write you about it if he chooses.—Editor.]

SELLING WALNUTS BY VARIETY.

[From address by Dr. L. D. Batchelor, U. of Cal. Expt. Sta.]

At the beginning of the walnut industry in this State, the walnut crop was sold ungraded as a general product, much the same as the Irishman's conception of "pigs is pigs." Today the seedlings are strictly graded, while some of the varieties, as the Franquette and Eureka, are sold under their varietal names. The Placentia is sold in an advance grade called "Budded." As the industry grows it will likely develop more and more away from the general product to the production and marketing of specific varieties. These varieties will doubtless become as well known among the consuming public as the Baldwin apple or the Elberta peach. As this progress takes place, the high quality nuts will become more and more in favor.

Ten acres of table grape cuttings will be planted by E. H. Erickson of Brawley this spring, in a field test for the government. There will be five acres of Maraville de Malaga, one of Black Monucca, one of Foster, one half of Muscat noir d'Hongrie, one half of Gollabie, one half of Albardiens, one half of Muscat Bonod and one of other varieteis.



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Augur Shows Water Table.

[Written for Pacific Rural Press.]

"Irrigation is destroying the vineyard and fruit industry in the San Joaquin valley," says Frank Henry of Fresno county. "Years ago when the old orchards and vineyards were set out, the water table was 25 to 35 feet below the surface. The trees and vines had to send their roots deep and far to moisture and were greatly benefited by the experience.

"As irrigation became more general, the water table raised slowly and permanently, absolutely drowning and rotting the roots below the low point of the water table each season. New orchards being set out now simply send out root systems near the surface above the water table and thus grow well.

"Most growers will not believe the water table is so near the surface as an ordinary 2- or 3-inch auger will prove. They point to a pond of water on the place and figure the height of the water table from its surface, whereas the cultivation of the ground draws the table considerably higher than the surface of the pond."

In one alfalfa patch tested with an auger, the water table was far below that of a nearby pond, due to the deep roots and extensive transpiration of moisture by the alfalfa plants.

Water Table 2 Feet Instead of 15. —Flanders Setchel of Fresno has a vineyard five miles north of Reedley on which the vines on about 500 acres were turning more or less yellow and producing poor crops. Thinking the water table was at least 15 feet below the surface, an auger was used, showing so much water at 2 to 7 feet that the soil could not be brought to the surface. He has ditches running at intervals through the vineyard, through which water continually running sub-irrigates it. Since the water table was found so near the surface, he has been draining these ditches and sending irrigation around his place instead of through it. Within a month from the time he began this drainage in June, the vines were showing a greatly increased greenness and healthiness of foliage. Nevertheless, they were in such shape, the roots having been rotted off by the standing water, that a little later in the season they had to be irrigated in order to supply the surface roots which had by that time become rather dry. These surface roots will take to themselves moisture at the expense of the tops and will live through the dry season when the tops need water so badly that the leaves fall out.

These experiences would seem to indicate the need of definitely locating the water table in every vineyard and holding off the irrigation accordingly.

POLLINATING HUNGARIANS.

To the Editor: Replying to inquiry of Old Subscriber, Penryn, for some variety of plum that he may graft upon some of his Hungarians to make the remainder fruitful, will state that in a block of 1500 Hungarians in my orchard near Colfax there are about 20 Yellow Egg plums. For a distance of five trees from each Yellow Egg the Hungarians are unusually fruitful, bearing from ten to twenty times as much fruit as trees remote from the Yellow Eggs. The benefit of cross-pollination was conclusively proven. However, Yellow Egg is not a high-priced seller in the shipping markets, and (before I had definite knowledge of their dates of blossoming) I grafted occasional trees to Grand Duke and Giant, which bloom enough earlier than Hungarian to miss most of the bloom of the latter, thus improving the situation but little. French Prune is quite satisfactory as a pollinator, but Yellow Egg is ideal, the blooming period coinciding exactly with Hungarian. My suggestion to Old Subscriber is that he graft the fifth tree in every fifth row to Yellow Egg. This will reduce his Hungarian trees by four per cent numerically, but if his results are similar to my own he will increase his yield ten to twenty fold. I am becoming an ardent advocate of cross-pollination for most fruits. This year a block of cross-pollinated Bartletts in my orchard required thinning to such an extent that the ground beneath the trees was covered with the fruit, and an unusually heavy yield was harvested. The spring blossoming was no heavier than usual, but nearly every flower appeared to set a fruit. Foothill pear orchards are proverbially shy bearers, so, also, at times, are plums, and we need an exhaustive study of cross-pollination, taking into consideration various incidental conditions that promote or detract from heavy bearing.

A. L. Wisker.

Grass Valley.

THE GOVT. WILL MAKE A NUT REGISTER.

To the Editor: The Department of Agriculture desires to secure information concerning individual nut trees, either native or introduced, which bear nuts of such superior excellence as to justify special consideration.

The nuts which are of special interest at this time are the pecans and other American hickories, black walnuts, butternut, chestnut, and hazels, as well as foreign walnuts, chestnuts, and hazels (filberts). It is also desired to locate beechnut, chinquapin, and Japanest walnut trees of especial merit.

To be worthy of the attention of the Department, trees must be hardy in the section where found, vigorous, prolific, and annual bearers: The nuts must be medium size or above; uniform in size and shape; thin shelled, easily cracked; and the kernels plump, rich in quality, pleasant and agreeable in flavor, and easily removed from the broken shells in unbroken halves.

If the owner of such tree or trees is willing to co-operate in this inventory of nut trees the undersigned will be glad to send franked packing boxes in which to forward samples of the mature nuts from trees considered worthy of record.

C. A. Reed,
Nut-Culturist, U. S. Dept. of Agriculture.
Washington, D. C.

Tomato plants have grown several inches tall from seed planted last November between rows of three-year-old lemon trees, owned by E. Steiner of Brawley.



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Systematic Pomelo Pruning.

[Written for Pacific Rural Press.]

There is a pomelo orchard in Imperial Valley which has been making good money for its owner, Lou Farnsworth, but has grown full of brush and the lower branches dragged the ground, even since the fruit was off. Herman Brussow of Whittier, who has been pruning citrus trees 12 years, was engaged to prune the trees in February; and below are some of the pointers he suggested while busily restoring the trees to the possibility of increased crops.

Grapefruits, like Valencias, tend to bear heavily in alternate years. Prune while the trees are dormant in the winter before an off year. Go over a tree systematically three times. Where limbs are so low, it is necessary to get under, on your knees, and saw out enough to give the remainder good clearance from the ground, and take out everything low in the crotches. Inside fruit wood to be left above, will hang down in this space anyway, with the crop on. It is necessary to leave enough clearance for circulation of air under the tree and to cultivate closely so the ground will not sour.

The second time over the tree is pruned with long-handled clippers, also inside, and clearing out the low brush so you can stand up. Don't take out limbs that would leave holes in the side of the tree. Where it is a question which of two crowding limbs comes out, take the lower. Prune out all dead and crossing wood. Do not leave any twigs which would hang to the ground with fruit on.

Leafless twigs of fruit wood will have leaves and flowers shortly after irrigation, within a month, along in February here in Imperial. Don't cut them out, thinking they are dead.

Standing up for the last of the second inside pruning, you can locate the limbs that should still be cut much better than from the outside, though the third time over the tree will be from the outside.

Where much is being taken from the tree anyhow, leave all possible, to be pruned two years hence, to avoid too much shock by removal of leaves. Where it is a question whether to leave twigs under or on top of a limb, leave those on top, to grow upward so they may replace the end brush of that limb when it shall be taken off in the future.

It is better to cut two branches of a limb off in two different cuts than in one, because quite often in making the first cut the "picture develops" and shows the remaining branch to be needed on the tree.

Pull Suckers.—Suckers to be destroyed ought never to be sawed or clipped out. Neither should they be pulled out by pulling in one direction only, since that leaves an ugly wound in the bark. While pulling gently, the sucker should be worked back and forth to crack all sides somewhat loose from the bark and the sucker then be pulled out "by the roots." If it is cut off, you are likely to get four times as many new suckers as you have cut out.

NEEDS FROST POTS.

[Written for Pacific Rural Press.]

On the flat of a little ravine opening onto the seashore of Santa Cruz county, an acre or more of Bellflower apples were planted perhaps 15 years ago. They never bear much of a crop we were told, because frost gets the blossoms every spring. It was also said that that section raised the best apples in the State. For lack of investment in perhaps 100 cheap frost pots and oil, that acre of rich soil loses the opoprtunity every year of giving its owner a neat income; and the public eats poorer apples.

HONORS FOR REHART.

To the Editor: The Oregon weather prophet, Mr. Rehart, seems to have come through with an awful punch. Really I have followed him for about eight years and his predictions have always come true. He foretold both dry years and the following, when you seemed to think he missed it so badly. He most certainly was right in general, that the rainfall would be above normal and floods everywhere. Could you ask anything to work out better than his prophecy this year: no rain to speak of till December, then plenty? I think you would do well to copy his predictions and cater to the farmer's greatest weak spot, the "weather prophet" — that is, of course, providing he does not live in our own home town.

Dixon. Wesley W. Miller.

Celery growers in the vicinity of Holt, San Joaquin county, are said to be harvesting good crops of celery this season, the land yielding a carload to the acre.

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Apricots $250 an Acre.

[By E. H. Erickson, Brawley.]

Apricots in this valley cannot stand much alkali, but they can be grown on land where grapes will not do well, if it can be well drained. They like the good sandy land best.

There are three varieties which do well here—Newcastle, Blenheim, and Royal. I have found only the Newcastle and Blenheim profitable; and Newcastle is best because it comes in early when there is hardly any fruit in the market. I always start to pick some the first week in May and the picking lasts about three weeks.

Root-stock.—Apricots in this valley should not be grown on their own roots, which are too sensitive to alkali. I have found the peach root best. It can stand more alkali and drouth than the apricot root. The plum root is too slow a grower for the apricot here. It will not make a good union. As the growing season is so long here, the trees make a big growth and we have to prune heavy and top them back. Thinning fruit by hand is too expensive, so we must do the thinning at the same time we do the pruning. If the trees have too much fruit-bearing wood we cut out some of the extra wood when we prune. If too much fruit is left on one tree, the fruit will grow small and will not bring as good a price on the market.

Varieties.—The Newcastle is a cling, and cannot be used for anything except to be shipped as green fruit. But it is so fine flavored and early that it always sells well. It is small in comparison with canning varieties on the Coast, but it grows larger here than at any other place in California. With good culture, it will grow as large as the Royal. It is so well adapted to this Valley and climate, that I think it is one of the most profitable fruits for us. It ripens when weather is cool and pleasant to work in, and it is a fairly good shipper. I have had them in iced cars as long as five days and they were still good when they arrived at the market.

The Blenheim is one of the best shipping and canning apricots and is a freestone. It ripens late in May when the Newcastle is all gone and there is still a good market for 8 or 10 days before any quantity comes from the San Joaquin Valley. The first competition we have is Newcastles from around Bakersfield. They are so small and full of black smut that they will not hurt us much. But after that, the San Joaquin Valley starts to ship in large quantities and then we have to quit, as they can produce them a whole lot cheaper. They have much cheaper and better labor. The fruit is somewhat larger, but cannot compare with our fine flavored apricots here. Then we must can or dry the balance of our Blenheims, as we can sell them in our local markets.

The Royal does not set as well and will not grow as large as the Blenheim. They ripen at the same time. I have tried the Rogers peach, the Hemskirke, Tilton, and Moorpark. The trees do well but will not bear.

$250 per Acre.—I have never failed to make $250 per acre on my Newcastles, and I have made as high as $700 per acre in a single year. The apricots start to bear early here; you have some crop the third year after planting.

COMING ALMOND DISTRICT.

[Written for Pacific Rural Press.]

G. A. Nehrhood has been exhibiting a pile of heavy fine-flavored seedling almonds, part of 128 pounds produced on one old tree in a neglected orchard near Paso Robles.

That the marl subsoil of this district is a positive advantage for stone fruit trees and almonds in connection with the adobe nature of the soil, is maintained by Mr. Nehrhood, G. N. Talbot, and others who are proving their faith by extensive almond plantings.

But their marl, they explain, is different from the impervious soft rock called marl in many other sections. It drains water easily as was shown by Mr. Talbot when he dug a hole 2½ feet through soil and 3 feet into the underlying marl, trenched the hillside to drain into the hole, and a few hours after a storm found the marks of water showing that the hole had been full but had drained away.

The marl analyzes about 46 per cent carbonate of lime, and 3 per cent potash as nearly as Mr. Nehrhood could remember. The lime, leaching into the adobe, with characteristic action granulates the adobe, making it more drainable and easily worked.

Figures on almond acreage, present and to be planted this spring, were dug up by Dr. Victor Ward of the Chamber of Commerce about New Year's and published in the Paso Robles Press. They show over 2,000 acres of almonds already planted outside the Atascadero colony, and give the number of trees to be planted by each of 42 growers. They total nearly 76,000 trees to be set mostly in 27-foot triangles, 70 trees per acre.

The largest planters for next spring are G. N. Talbot 7,000 trees, Brown Bros. 5,000, Bowers Orchard tract 7,000, H. A. C. McPhail 7,900 and G. H. Aiken 7,000. Mr. Nehrhood already has 500 acres planted. Some of the trees coming four years old are 20 inches in circumference. No irrigation is practiced. Old almond trees in family orchards form the basis of their faith.

This is the answer the Paso Robles people wish given to the statements that their district is unfitted for almonds. They also proclaim by smaller plantings, their faith in that district for pears, apples, and walnuts.

MILO TWO CROPS PER SEASON.

[Written for Pacific Rural Press.]

Two crops of milo corn were grown last season by Mr. Schmeyser, near Holtville, Imperial county. The first of about one and one-half tons of grain was cut in July and August, the stalks soon mowed about three inches above ground and left lying. The field was irrigated and the second growth shot up so fast that the daily increase seemed noticeable. The second crop of grain, one and one-half tons per acre, was cut before the early mid-November frost of this year, and the stalks were cut later for fodder.

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Prune Men's Accomplishments and Aims.

In these columns last week we gave a report of the prune growers' meeting at San Jose, January 19, but did not attempt to give in detail either the work accomplished by the Prune Growers' Committee in 1915 or the immediate plan of action approved by the assemblage last week.

What Has Been Done.—The work that has been done was thoroughly outlined by the report of the Growers' Committee read at the meeting, which follows:

Poor Early Prices.—To the Growers of Santa Clara County and Visiting Counties: Early in the season of 1915 growers became aware that speculators were busily selling contracts to deliver the growers' prunes when cured at prices ruinously low to the grower.

We say contracts and not prunes, because at that time not only did the packers have no prunes to deliver, nor did the growers have any, as the trees were then only in blossom.

This finally roused the growers of the Cupertino Improvement club to the point of calling a mass meeting in 1915.

At this meeting statements were freely made that between 1000 and 1500 carloads of prunes had already been sold by speculators.

This was generally denied by the packing interests, but later the statements were found to be correct, as the facts upon investigation were proven absolutely. Many of the contracts were seen by a committee from us, appointed for this special purpose—and at prices lower even than was claimed.

Sold Too Cheap.—Later some of the packers admitted that others had done what was claimed, but denied having done so themselves. But it was only a short time after, when for reasons of necessity or otherwise, that they were playing the same game.

This means, Growers, that our prunes were being sold for 3½ and in some cases for less without good reason therefor, amounting to pure speculation. In support of these low prices the buyers claimed an immense crop of both prunes and apricots in Santa Clara valley especially, and that there would be no export trade in 1915 owing to the European war.

Packers' Figures Off.—Both of these claims were proven erroneous and virtually admitted in due course. The meeting developed the fact that there would be little if any more than 70,000,000 pounds of prunes and only about 65 per cent of the 1914 crop of apricots in this valley, and at no time did these figures prove overestimates.

It was unanimously voted to hold prunes for 5 cents; apricots, though not voted upon, were considered worth 8½ to 9 cents, although as low as 6 cents had been offered. And as you know prunes ultimately went to 5 cents, and the bulk of the apricots sold at 8 and 8½ cents.

Upon the suggestion of Mr. J. O. Hayes, a representative from each district was selected, constituting a growers' committee, to keep the growers informed on crop and market conditions. This duty they conscientiously performed to the full extent of their ability and opportunity. Much useful and valuable information was sent out to the growers through the medium of the press. The Mercury Herald, Pacific Rural Press and California Fruit News have been exceedingly generous with us in this respect.

Result of Reports.—Just what value these committee reports have been to you can be best determined by the results you obtained personally. But we know that many thousands of dollars were saved to those who had courage in themselves and confidence in the committee's advice that otherwise would have been lost.

Realizing that finances in the harvesting of crops would be a necessary factor, a sub-committee interviewed the banks of San Jose and found that, with one exception, they were all favorably inclined toward the growers' movement and, not only promised, but actually aided (in all cases where needed, as far as we know) the efforts of the growers to obtain a 5-cent prune basis.

In addition to this, we sincerely believe that the committee's efforts during the year of 1915 have received the moral influence and general respect of the business men of San Jose and Santa Clara county.

In regard to finances, the mass meeting of last May overlooked this possible necessity. For this reason our work was more limited and information less widely distributed than it otherwise would have been. As it was, we kept in close touch with such nearby counties as Napa, Sonoma, Tulare and Contra Costa and exchanged valuable information with them.

By the courtesy of Mr. E. A. Wilcox of San Jose, who was identified with a previous growers' association organized for the purpose of disseminating information to the growers on similar lines to our committee, a fund of $21.75, balance in his hands was placed at our service, which money practically carried us through to the expense of this mass meeting, for which we thank him.

Jos. H. Bone, Chairman,
H. O. H. Shelley, Secretary.

What Will Be Done.—The tentative plan for the work in 1916 was outlined by Mr. Geo. E. Merrill in this manner:

The 1915 growers' committee by its services during the past year has proved itself of great value to the industry in which we gain our living. Its members realize, however, that the success of the committee, although vital and important, has been but partial; the majority of the growers did not act on its advice. That they did not act on the good advice given was largely because they did not know of it, or if they knew of it they did not appraise it at its true value. The ordinary means of publicity, including both the daily and agricultural press, do not reach all or nearly all of the growers, and not all of those who can be reached by these means appreciate the true worth of such reports as were put out by the growers' committee.

The members of the committee are aware of these conditions, and also of the need of more comprehensive and timely information than they were able to obtain with their necessarily informal and imperfect news-gathering facilities of last year. They have therefore considered the necessity of a better means of ascertaining and disseminating the facts relating to market and crop conditions throughout the year.

May be Bigger.—As a result of their deliberations there has been evolved the tentative scheme of state-wide organization that I have been asked to present to this convention. The scheme does not contemplate the formation of a growers' marketing agency, state-wide in its extent. An agency of this sort may or may not in future years become advisable. If it does become advisable, the California prune and apricot growers' information bureau will have paved the way for it.

"Our scheme may not realize the ideals of all growers assembled here, but at least we hope that all will regard it as a step in the right direction. In our deliberations as a committee we have aimed to build a foundation on which may be raised a structure that will not be assailed by other rural organizations already in the field; one that will not arouse the united opposition of the packing and other vested interests, but one that will carry out in a fuller and completer manner the work so well begun by the 1915 growers' committee, and in addition to this pave the way for the solution of any problems that now confront the industry or that may face it in the future. Our plan has already received the en-

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dorsement of the grange and of the Farmers' Educational and Co-operative Union, and the delegates of other growers' organizations who are meeting with us today have given it their heartiest approval.

Present Plans Outlined. — "Although the gathering and disseminating of market and crop information is the prime object of the proposed association, it is hoped that other lines of work may be developed. The successful conduct of these other lines of work depends on a comprehensive knowledge of the conditions involved. There is at present no feasible method of securing this knowledge except through some such organization as the one we hope will be formed from the action of this convention.

"Perhaps the most important direct result that can be looked for from our proposed association is a stabilizing effect on prices. If each grower in the state is placed on an equal footing with the packer so far as knowledge of market and crop conditions is involved, it is plain that a short-selling bear campaign early in the season based on the growers' supposed ignorance is less likely to meet with success than one run under present conditions. In short, few packers would dare sell short if they knew the growers were acting as a unit in an effort to secure just returns. The successful application of our plan will increase the general level of prices to the producers, and make the business of the packer less precarious, which will ultimately result in better prices to the grower in so far as he helps now to make up the losses suffered by speculating operators in the dried fruit market."

KEEP SOIL COOL FOR BACTERIA.

[By Prof. C. B. Lipman, Berkeley.]

The activities of soil bacteria are profoundly influenced by the temperature conditions of the soil, air, and water. The optimum temperature for the development of most of them is about 86 degrees F. and they will yield their products, within certain limits, in amounts proportional to the rise or fall in temperature. This is particularly true of the organisms in the soil producing ammonia from organic nitrogen and nitrates and nitrates from ammonia, and also of those which fix nitrogen from the atmosphere.

We have it in our power to control for the benefit of the plants which we grow, the activities of bacteria in the soil by changing or modifying the temperature of the latter through certain methods of soil management.

Drainage and Tillage.—In the heavy soils, proper temperature for soil bacteria must be brought about, not only through good drainage, but through early tillage; because early tillage through a better circulation of warm air and the evaporation of excessive moisture; and therefore bring a larger and earlier development of bacteria. How important this early warming up of the soil is, when viewed from the standpoint of the soil bacteria and the soluble plant food produced by them, can be seen from the fact that even under the best conditions, we have so slow a natural formation of nitrates in the soil in the late winter and early spring that we are constrained to use soluble nitrogen fertilizers in order to tide the tree over the period during which the soil is warming up sufficiently so that the bacteria may produce a large enough supply of nitrates.

On the other hand, to protect organisms of the soil from the effects of intense heat, it is necessary to maintain constant summer cultivation to preserve the moisture content of the soil, which will tend to make more uniform and less intense the temperature of the soil, so that the bacteria may not be disturbed in their work. There can be but little doubt that the hot sun is responsible for the destruction of many of the soil bacteria in the surface. One of the reasons for the bacterial poverty of the soils of the Coachella and Imperial valleys and other desert districts is the great heat of the sun which is rapidly conducted through the sand particles and must be destructive to many of the organisms.

Through cultivation and the regulation of moisture by proper irrigation and drainage, we have it in our power to control the activities of the bacteria in the spring by raising the temperature, and in the summer by lowering the temperature.

Warm Irrigation Water.—We find in our investigations that the temperature of irrigation water is very important in the development of soil organisms; for example, ice water has a greatly depressing effect upon nitrifying and nitrogen fixing bacteria. This teaches an important practical lesson. Many of you know that a good part of the water supply for irrigation comes directly from the snow of the mountains. Without being allowed to become warm in reservoirs prior to use on the land, it lowers the temperature of the soil and therefore stops the activities of bacteria in the interests of the plant; to say nothing of the effects on the plant itself, a subject which we are now investigating at our experiment station. To overcome this difficulty and the evil effects which must sooner or later come from the use of very cold water for irrigation, I would recommend the construction of reservoirs in which this mountain water may be collected and warmed by the sun before it is passed through the ditches or the flumes for use on the land.

SHINGLING A DITCH.

[Written for Pacific Rural Press.]

Some of you who have had trouble with ditches cutting out, try this scheme.

"Shingling an irrigation ditch" is a term used in Owens River Valley to mean putting hay in the bottom of the ditch to keep it from washing. Sounds easy, but care is always taken to get the job done right.

First, oats (barley may be used) are sown on the ditch sides and bottom. Then enough hay is thrown in to make a layer three or four inches thick, on both sides and bottom. A little sand or dirt is thrown on top to help hold the hay in place. Now a little stream of water is turned in to help settle the hay and sprout the oats. Pretty soon the oats grow up through the hay, thus binding it fast. Now you are ready to turn in a little more water. Gradually increase until you are running the ditch full.

Sandy and peat soils are typical of California. They are generally lacking in phosphorous and potassium. **Gold Bear** fertilizers are rich in these elements because they are especially manufactured for California conditions. There is a booklet on fertilizers, we would like to send to you. Write for it.

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FOR CALIFORNIA SOILS

WESTERN MEAT COMPANY
704 Townsend St.
San Francisco

Why State Should Help in Marketing.

[Written for Pacific Rural Press.]

An Open Letter to Colonel John P. Irish.

My dear Colonel: My attention has just been called to an article published in the issue of the Pacific Rural Press of January 22nd, 1916, in which, among other things, you say:

"The proposition of Mr. Weinstock that farm products shall be officially handled, routed, shipped, stored and sold is one that also treats the farmer as a poor dependent creature incapable of attending to his own business. It has been shown that producers are entirely capable of co-operating, shipping, routing, and selling, and all classes of rural producers should be encouraged to follow this example rather than to use Abraham's bosom for a pillow and let the most important part of their business be attended to by any one of many political machines."

It is quite evident from the foregoing that you are not as well informed as you might be on the situation that confronts the producer of California's perishable products. The fact is, as you can easily ascertain by taking the trouble to inquire from shippers and growers who can speak out of bitter experience, that they have not been able on a sufficiently large scale to co-operate in shipping, routing and selling their perishable products. Let us take the citrus growers' experience for example. The Citrus Growers' Association controls about 62 per cent of the crop. Despite the able management of the Association; despite all its scientific methods of preparing the fruit for market; despite its best judgment in fixing quotas of supplies for various eastern marketing points with the end in view of giving each market its fullest quota of citrus products up to its maximum consumption, both gluts and famines have more or less prevailed at frequent periods due to the fact that the remaining 38 per cent of the fruit has been shipped, as it were, in the dark, to the various eastern points, causing gluts and famines to the injury of the whole 100 per cent.

You say that it has been shown here that producers are entirely capable of co-operating, shipping, routing and selling. If you will take up the matter with the California Fruit Distributors who, themselves, do the shipping and routing of deciduous fruits, you will find that the same situation that I have just described for the citrus industries prevails in the deciduous fruit industry, only in a worse degree.

The fact remains that up to this time in the long history of California eastern fruit shipping it has not been possible to have either the growers or the shippers collectively control intelligently the routing and direction of the fruit so that gluts and famines might be avoided, and this is due largely to the human equation involved which causes more or less jealousies and rivalries and lack of human confidence and the fear that one will "put it over on the other" and so on. The only agency that can minimize these feelings and can succeed in controlling the fruit as a unit is the agency of the State, where such agency has the confidence of the growers and shippers generally. If the State Commission Market were purely a political proposition and managed by a ward heeler or a political henchman there might be some force to your contention that the grower should not be made the victim of a political machine; but my long and more or less intimate relationship with you will enable you to say whether, in your opinion, the State Commission Market is presided over by a ward heeler or a political henchman.

If the producer is all sufficient to manage his own marketing problems, it would be interesting to learn why it is that in a letter to this department under date of January 8th, you write as follows:

"When my onions are waiting on the levee for a price equal to 8-10 of a cent a pound, the consumer is phoning the store to send him 25c worth of onions, and he gets three pounds, or 8 1-3c a pound. If I should ship down a carload and advertise for the consumer to come and take them away at 80c per sack of 105 lbs. I would not sell two sacks.

"It is the same with potatoes, for which the consumer pays 2½c a pound, but he would not buy of me by the sack at $1.25, or about 1c a pound.

"This, too, is the reason why the so-called free market failed in San Francisco and most of our cities. The consumer wants most of his stuff 'sent up,' and thinks that delivery to his kitchen door costs him nothing.

"The newspapers are aflame with the great profits and prosperity of the California farmer. I have been one for years and I know land and its use, for I was brought up on it, and I make a modest living only."

If, as you say, the producers are entirely capable of co-operating in shipping, routing and selling, how do you explain the fact that you are only getting 8-10c a pound for onions for which you tell us the consumer pays 8 1-3c a pound?

I have always regarded you as a man of rare mentality and uncommon ability and energy, and a leader among men. With all these valuable qualities at your command, how comes it that despite the fact that California has been an agricultural state for these many decades and that you have been a producer, as you say, for years, that you have not been able, either individually or in co-operation with your fellow-producers, to remedy the very serious situation which you describe? If, as you say, the farmer is not a poor dependent creature, incapable of attending to his own business, and if again, as you say, it has been shown that the producers are entirely capable of co-operating, shipping, routing and selling all classes of rural products—why is it that the consumer, according to your statement, is paying $166 a ton for your onions while you are only getting $16.00 a ton? As an onion grower you surely could not be blamed for writing of these things with tears in your eyes.

Someone has pointed out that our only guide for the future is the experience of the past, and judging from the experience of the past, if

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are raised right and our grading will please you. Every tree the same Caliper. Still a good supply of

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Wire us a list of nursery stock needed. We quote and ship same day if necessary. Catalog on request.

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Fresno California

you and your fellow-producers are left to your own resources, you are no more likely to be able to get more than $16.00 a ton for what you say the consumer is called upon to pay $166.00 per ton than you have been in the past. Don't you think that in the interest of the producers and the consumers and for the welfare of the state that it is about time that the state took a hand in the situation in the hope of lessening this tremendous gap of $16.00 a ton received by the producer for onions and $166 a ton paid by the consumer.

You, in common with your fellow-producers, have had all these decades in which to do this, and according to your own statement you have lamentably failed. It is quite possible that the state may also fail, but if it does, the condition surely can be no worse than you tell us it is now. Yours very truly,

Harris Weinstock,
State Market Director.

Cheap Money; Small Farmers

To the Editor: Some time ago I inquired of you if a federal rural credit system, making farm loans at low interest, might not lead capital to enter agriculture more than heretofore, and eventually crowd the small farmer out of business. Your reply, in your issue of Dec. 11, I did not find convincing. I am writing, not for argument's sake, but to get at the facts. If there are errors in the statements I am about to make I shall be glad to have them pointed out.

You claim that capitalists will not go into agriculture because the "great captains are too busy to farm." A few years ago one of the largest pork packers of Chicago established a model chicken farm to supply chickens for his packing plant. Recently I have been reliably informed that a large canning company of Santa Clara county is buying up orchards. These are indications of one form of activity of capital in agriculture. Another is landlordism and tenantry.

You argue that "as land values increase and taxes multiply we shall be farther and farther away from tenantry." It appears plain to me that an increase in land values makes the land more difficult to obtain by the average man, and that he is therefore forced to become a renter. Now, what are the statistics on tenantry in the United States?

In Indiana, Illinois and Iowa, states where land values are high, 30,000 farms disappeared between 1900 and 1910. For fifty years previous to 1900, the number of farms had been increasing, but during those ten years the consolidation of farms wiped out 30,000 farms. In 1910 there were 10,000 less farms operated by owners, in Iowa, than in 1900, in Indiana 8,000 less, in Illinois 13,000 l ss, the decrease in the number of owners being greater than in the number of farms. In 1880 sixty-nine per cent of the farms in Illinois were operated by owners, and 31 per cent by tenants; in 1910, fifty-nine per cent by owners and forty-one per cent by tenants. In the south, tenant farming is even more noticeable. In Texas, Louisiana and Oklahoma 55 per cent of the farmers are tenants, in South Carolina 63 per cent, and everywhere the proportion is reported to be rapidly increasing.

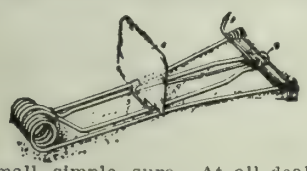
It would take too long to go into the question of the shoe-factory worker's changed conditions, but one fact is undeniable. He does not "own his job." In other words, he is not independent, however capable or industrious he may be. Shoe factories have their dull periods every year, during which time the shoe-worker is of necessity out of work and out of wages. The old shoemaker could always command work and a livelihood.

The farmer often clings to his little farm and his grinding toil because he is "his own boss." That is worth something to any man. That is why we want to know what sort of a scheme our dear friends in Congress are getting ready for us.

Modesto. **J. C. Macy.**

The Inyo Livestock Ass'n held a meeting at Lone Pine, Saturday, January 15, at which time the following officers were elected: J. H. Lubken, president; Frank Butler, vice-president; Mrs. E. H. Edwards, secretary and treasurer; an executive committee consisting of Frank Butler, S. H. Reynolds, Mark Lacy, Chas. Summers and J. H. Lubken was elected, and they in turn appointed an Advisory Board of themselves, excepting Frank Butler, J. C. Baxter taking his place on the Advisory Board.

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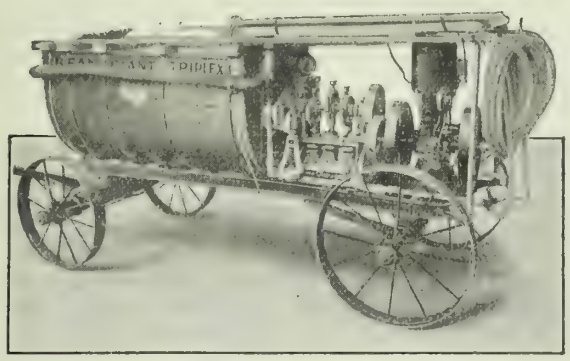
Thrifty citrus stock—including Washington navel and Valencia oranges, lemon and grape-fruit. Prime, sturdy, two-year-old budded stock—caliper ¾ inch and up. Straight stems. Trees in perfect condition—grown in exposed positions. Best citrus stock that proper soil conditions and scientific culture can produce.

We have three citrus nurseries—Escondido, Anaheim and Los Angeles. If you are near these points we can save you money by shipping direct from nurseries. Take no chances with inferior trees—get healthy, robust stock. The Germain reputation for highest quality is back of every tree. Special prices on large shipments.

$2 Combination Offer

Four trees — Washington navel and Valencia oranges, lemon and grapefruit $2.00. Additional trees 50 cents each. Single trees, 65 cents each. All trees carefully balled—perfect condition for planting. Write to or ask for Mr. Peck.

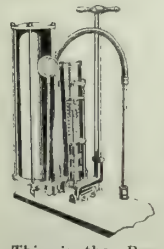
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A spraying outfit may have all the other virtues you might possibly think of—but if it doesn't drive the spray material onto the trees at heavy pressure, and if it doesn't keep up uniform work—it's a failure, and your time and money are largely wasted. The BEAN gets results. The sturdy Novo Engine and the Matchless Bean Pump drive the material on at tremendous pressure—so that it reaches every crack and crevice—and does the work thoroughly and completely. You should become familiar with the

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This is the Bean Magic, the only hand pump that can be continuously operated at 120 lbs. pressure by one man without exhaustion. Porcelain-lined Cylinders, Ball Valves, and Bean Quality all the way through.

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—the valves that cut sprayer troubles in half. Simply bell metal balls revolving on reversible and interchangeable brass seats. No threads to rust, corrode, or stick tight. Can be opened up entirely in less than 2 minutes without lowering the pressure, without stopping the engine, without drawing the liquid from the pump.

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Now is the time to sow California Poppy seed. Special offer for one week only, upon receipt of 25c I will mail you my regular 50 collection of California poppies, consisting of 9 distinct varieties in separate packets.

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345 S. Main St., Los Angeles.

Tomatoes Without Blossom End Rot.

[Written for Pacific Rural Press.]

In addition to our comments on "Blossom End Rot of Tomatoes" in our issue of December 18, Wm. Proctor Spaulding, writing from Los Molinos, says: "After some considerable trouble and experimenting along this line, in 1913, the trouble was entirely eliminated in my tomato plants and I raised over 5,000.

"I started in by planting the seed in the usual way and when the little plants were two to three inches high —the weather conditions promising —I removed them from the seed bed, and transplanted in a bed prepared for them, in rows about ten inches apart, and the plants an inch or two apart, to permit plenty of light and air to each individual plant; and allowed no shade to interfere with sunlight and air and, as the plants grew to about twice the size they were at transplanting time, I again transplanted them, until this had been done four times, each time setting them a greater distance apart, so each plant would have plenty of room. light and air. Of course I kept them watered, before sun-up and after sun-down, as it seemed necessary.

"These plants never wilted seemingly for an instant after transplanting, but went right on growing into healthy, sturdy, stocky plants. However, should an occasional plant droop, I immediately removed it and filled the space it occupied with one that had no complaint to offer. About April 15 the plants were ready for their final planting.

"I utilized the top of my ditch banks for about 2,000 plants, setting them seven feet apart, and the balance of the 5,000 plants I put in rows six feet apart and hilled up, like sweet potato rows are 'way back east,' and these were also planted seven feet apart in the rows.

"At the time of setting out, the stocks were ⅜ to ½ inches thick, and very sturdy, and the color a dark rich green, a most healthy looking plant in every way, and most of them had lost their first blossoms. The plants were thoroughly inured to handling, wind, etc., and immediately began to grow as soon as work was finished.

"Much can be said in favor of a system of transplanting to insure strong, vigorous plants with vitality to throw off and overcome the various enemies to plant life, and produce firm, well developed fruit. Most people pamper their plants too much—like children and hot house plants—to make them sturdy, strong and healthy to bring the results desired.

"In 'hilling up' the rows, the fruit and blossoms can more readily be kept dry, and away from the water which is run in the furrow between the rows. My tomatoes have no worms, 'blossom end rot,' nor other defects. I have raised fully 60,000 pounds of fine, large, smooth tomatoes to the acre and never knew of 'blossom end rot' on a tomato from the entire 5,000 plants, or more. I have had 200 to 300 lugboxes of choice tomatoes ready for shipment at one time.

"After several years' trial of the treatment herein set forth, I am fully convinced it will give any one trying it the same good results I obtain. I raised three varieties: Burpee's Chalk Jewel, Stone and Perfection."

POINTS ON RICE MILLING.

Since there has been so much rice development in California in the past few years there has been a continual demand for information in relation to its growth, milling and its by-products.

In bulletin 330 of the U. S. Dept. of Agr. the following interesting points on milling are brought out. The rice grain as threshed is covered with a hard, siliceous hull. During the process of milling, the hull, the germ or embryo of the grain, six bran layers, and a portion of a seventh are removed.

The purpose of modern rice milling, in addition to freeing the grain from the hull, is to scour and grade it so as to produce a maximum amount of the highly polished rice which, on account of its bright luster, seems to appeal to the trade. The scouring process, to be effective in removing the bran layers, is so severe that a large proportion of the rice grains are broken. The weight of the individual grains is materially decreased and important chemical constituents are removed.

Rice of the Honduras type, when milled in a modern plant, is broken to an extent which reduces its whole-grain content from 75 per cent after hulling to 50 per cent after scouring. The Japan type of rice, on account of its shape, is broken to a less extent and, under similar conditions, averages 90 per cent and 80 per cent, respectively, in whole grains. Approximately 10 per cent of the weight of the rice kernels of both Honduras and Japan types is removed by the scouring off of the bran coat and germ. The milled yield of rice hulls approximates 30 pounds, of rice bran 20 pounds, and of rice polish 6 pounds per barrel of rice.

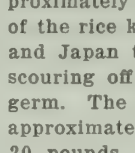
KILLS SQUIRRELS WITH GASOLINE.

[Written for Pacific Rural Press.]

For the last 15 years J. Nelson of Acampo has been destroying squirrels with gasoline and has found it very effective.

A rag, or anything that when balled will be nearly as big as one's fist, is thoroughly saturated with gasoline, then dropped into the squirrel hole. It should be packed back in the run with a stick at least two feet, then a bunch of weeds is stuffed in on top and lastly, at least 12 inches of dirt is tamped into the opening. The fumes from the gasoline kill the squirrels. This work can be done at times of the year when other work on the farm is not rushing.

C. J. Jacobson of Brawley, Imperial county, expects to plant 40 acres of figs, avocados, pomelos, grapes and apricots this year.

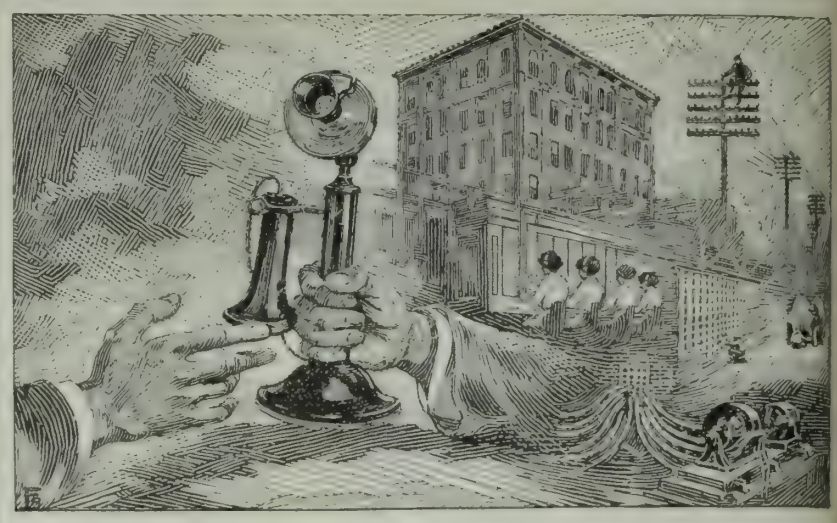


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Anticipating Telephone Needs

When a new subscriber is handed his telephone, there is given over to his use a share in the pole lines, underground conduits and cables, switchboards, exchange buildings, and in every other part of the complex mechanism of the telephone plant.

It is obvious that this equipment could not be installed for each new connection. It would mean constantly rebuilding the plant, with enormous expense and delay. Therefore, practically everything but the telephone instrument must be in place at the time service is demanded.

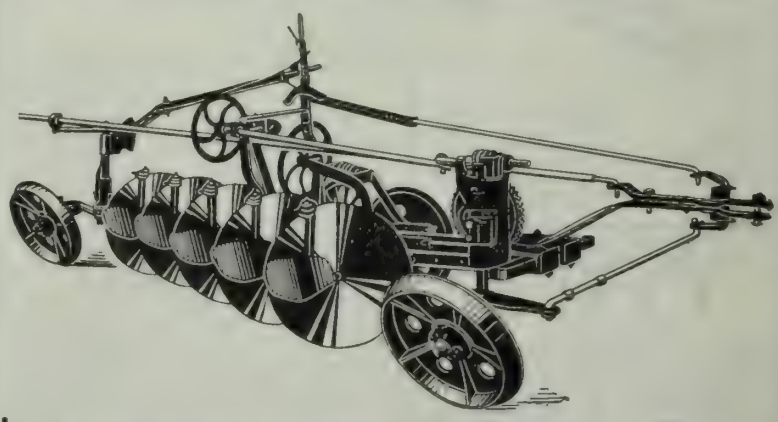
Consider what this involves. The telephone company must forecast the needs of the public. It must calculate increases in population in city and country. It must figure the growth of business districts. It must estimate the number of possible telephone users and their approximate location everywhere.

The plant must be so designed that it may be added to in order to meet the estimated requirements of five, ten and even twenty years. And these additions must be ready in advance of the demand for them—as far in advance as it is economical to make them.

Thus, by constantly planning for the future and making expenditures for far-ahead requirements when they can be most advantageously made, the Bell System conserves the economic interest of the whole country while furnishing a telephone service which in its perfection is the model for all the world.

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One Policy *One System* *Universal Service*



Knapp Engine Disc Plow

With this plow you can work within one foot of the trees in throwing the soil from the trees. Built very low, so that no part can come in contact with the limbs of the trees. Will penetrate hard soil and will not jump or swing around. Will turn under and completely cover up any cover crop or foul growth NO MATTER HOW HIGH OR HOW THICK.

WILL NOT CLOG UP IN PLOWING BURR CLOVER OR VETCH, as it has a wide clearance.

NO LEVERS to come in contact with limbs, as the land and furrow wheels are provided with worm-gear lifts, which does away with the levers and makes the plow easy to raise or lower.

TURNS EITHER TO RIGHT OR LEFT, and is steered by the engine as well as by hand.

The seat is in the center of the plow to keep the driver away from the trees, and all operating rods are within easy reach from the seat.

MADE IN ALL SIZES to suit every size and make of tractor.

WRITE FOR ILLUSTRATED FOLDER.

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Control of Russian Thistle.

If all plants of the Russian thistle are kept from ripening seed before they are large enough to travel before the wind, the weed will not be hard to control on any farm, says H. S. Hammond, of the Oregon Agricultural College. He further says that if the plants are prevented from seeding for two years the pest will disappear. The essential point is not to permit any of the plants to mature seed, very particularly those plants large enough to roll. Care should be taken always to use pure seed and not allow Russian thistle to be introduced as an impurity in clover, alfalfa, and flax seed.

Since the plant is an annual and grows from the seed each year the young plants are easily killed by means of a hoe, cultivator or any other tool that will uproot or seriously disturb them. They are easily pulled up and when turned under with a plow they die.

The plant is spread chiefly by the wind, by which means alone it may scatter over five or ten miles of open country in a single season. The plants are also scattered by attaching themselves to brake rods and the locomotives of railway trains, and are carried in the bedding of the stock cars.

It frequently takes possession of a field to the exclusion of more useful plants and draws from the soil a large amount of nourishment that might otherwise be used by useful plants. Its special characteristics make it much more troublesome than most other weeds. Because of its strong, sharp spines as it nears maturity it frequently damages the legs of horses driven through clumps in the field. In some parts of the United States farmers have found it necessary to bind the horses' legs with leather when working them in fields infested with thistle. Horses running free on the open range are injured by having the skin lacerated, the spine breaking off under the skin and causing festering sores.

The Russian thistle grows to a height of 6 inches to three feet, branches profusely and when not crowded forms a dense, bush-like plant two to six feet in diameter. When young it is very tender and juicy with small, narrow, downy green leaves. As dry weather approaches the tender leaves wither and fall and hard, stiff branchs begin to form. These branches instead of bearing leaves bear three sharp spines at intervals of approximately one-half inch.

At the earliest frost the plants change in color from dark green to crimson or almost magneta, especially in exposed places. By this time the plant has a very dense yet light growth of circular or hemispherical form, and when the ground becomes frozen and the winds blow across the prairie or range the plant is broken off or pulled out and goes rolling across the field at racing speed, scattering seed at every bound and stopping only when the wind goes down or when stopped by fences against which it is blown.

QUESTIONS ABOUT POSTAL SAVINGS.

To the Editor: Is it not singular that the U. S. Government would shut their eyes and allow our wage-earning, faithful toilers to deposit their earnings in the postal savings banks at two and one-quarter per cent interest, and then allow these postal banks to turn these earnings over to national banks at two and three-quarters per cent, and then allow these national banks to charge our farmers 7 and 8 per cent on farm mortgages, for the savings of their own community?

Surely the banks are not entitled to more than the real depositor, out of these loans, for merely handling the depositors' cash!

Why could not the postal banks pay the toiling wage-earner, say 3½ per cent on his savings; establish a loaning system which could be most efficiently run for one-half of one per cent and loan the toilers' money out on farm mortgages at 4 per cent? It would pay the wage earner more and would enable the farmer to feed him cheaper. It would enable many a young couple to turn their efforts towards a little country home ranch. It would draw large capital towards agricultural interests. If our postal savings banks can take a national bank's security for its deposits, surely there can be no question as to farm mortgages for security. Land is above business risk and the last and best of all securities. **E. W. Bentley.**

Napa.

[Our reader's questions are involved in legislation now before Congress. Wait and see what they do with them.—Editors.]

PERMANENT ROAD WORK.

Money invested in right-of-way, in reducing grades to a proper maximum, and in draining and crowning a road bed and building suitable culverts and drainage structures, represents the most nearly permanent elements that enter into road construction, said Professor G. V. Skelton of the Agricultural College Highway Engineering department in speaking before Oregon farmers and road officers. He emphasized the necessity of giving due care to proper location, grades, drainage and the type of construction of different purpose roads, no matter what type of construction is to be adopted. Money spent for these items properly designed, represents permanent road construction, since these points would have to be cared for, now or in the future, no matter what type of construction is used. Gravel placed on a properly located, graded and drained road will often answer all immediate needs of that road and form the best foundation possible for a higher type of construction when that stage is reached.

At a meeting of the Farmers' Union in San Jose last week, Prof. A. V. Stubenrauch of the pomological department of the University of California advised those present that the university is anxious to aid in increasing the prune production of the Santa Clara valley through better cultural methods.

Toughest where the Strain is Heaviest

There is not a weak spot in the "Big Bull." The crank shaft is extra large, the connecting rod bearings extra long, to insure sturdiness, dependability and durability.

Another instance of the new standard of efficiency set by

"BIG BULL" Tractors

is the patent steer wheel, running in the furrow in line with the single pulley wheel, making them positively and automatically self-steering.

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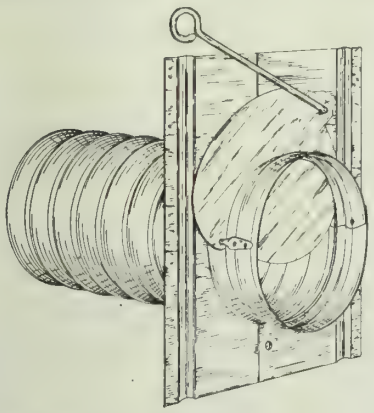
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California Corrugated Culvert Company

417 Leroy St., Los Angeles. **406 Parker St., Berkeley.**

General Agricultural Review.

DECIDUOUS FRUITS AND NUTS.

W. J. Stevens has been delegated by the State Marketing Commission to take a tree census of the various fruit orchards in Contra Costa Co.

The manager of a fruit and produce company at Spokane, Wash., was fined $500 last week for billing a mixed carload of boxed and bulk apples as bulk apples.

The Libby, McNeill and Libby company shipped 7,000 cases of canned peaches from their canneries at Selma last week. The shipment will go to Europe.

A report from Gridley states that 50 acres of pears are to be planted on the Charles Silva ranch this year. The land is bottom land and especially suited to pears.

Due to the low price of trees and the faith they have in the future of the markets, many farmers in the vicinity of Yuba City are said to be planting peach trees this year.

A complete change of officers and management was made at the annual meeting of the San Fernando Nursery Co., last week. W. J. Mann was elected president and manager.

The last carload of almonds in the warehouse of the Guinda Almond Growers' Ass'n was shipped from there last week. The association shipped over 200 carloads of almonds during the past season.

W. E. Packard of the University Experiment Station in Imperial Valley estimates that there are about 25,000 acres of land under irrigation there, suited to deciduous fruit culture. The "hard" land is not, because it makes the fruit ripen too late.

Fruit jobbers from all over the United States are said to look with favor on the recently organized peach association. A letter has been received at Fresno from Alaska in which the writer states that there is a good opportunity for developing the peach market in that territory.

The trustees of the California Peach Growers' Ass'n selected the following directors at their meeting January 21: William Glass, J. F. Niswander, Chris Jorgensen, all of Fresno; John C. Rorden, Selma; F. H. Wilson, Dinuba; W. J. Wilson, Hanford, and Warren H. Woods, Suisun.

Nurserymen in San Joaquin county report that the demand for almond trees is exceptionally heavy there this year, there being about three times as many almonds sold as any other trees. Confidence is expressed in the success of the California Almond Growers' Ass'n to handle the crops in the future.

The California Peach Association will provide for the cling peach growers of the State as well as the dried fruit men, according to a dispatch from Fresno. The contract with these growers will provide that the cling men sign up their peaches at a minimum price to the association with the privilege of selling independently outside if they are offered a higher price.

Writing to this office from Lancaster, Donald H. Graham says: "The storms have stopped most of the farm work in this valley, but during the next month many hundred acres will be planted to orchards. Pears will predominate. More grain is being put in this winter than ever before and the sugar company at Oxnard is planning to assist the farmers of the valley to plant 100 or more acres to sugar beets as an experiment."

CITRUS AND SEMI-TROPICAL.

Ten acres of grapefruit and five of dates are to be planted by F. D. Hevender of El Centro this spring.

A new olive pickling and oil plant will be erected soon at Oroville by Messrs. Meek, Gray and Perry of that place.

G. D. Parker of Esparto, Yolo county, will add 200 more Washington navel trees to his orchard of 300 trees near that town.

One hundred and twenty-five Eureka lemons on an orchard tree planted less than three years ago were picked last year by E. Steiner of Brawley.

A report from Oroville states that a company known as the California Estate Co. is sub-dividing a 500-acre tract in Butte county where water will be developed and a large olive acreage planted.

Shipments of citrus fruits from Redlands have not been so heavy as they were at this time last year, the total shipments for the season, to January 19, being 314 cars as compared to 551 cars a year ago.

According to W. S. Shippey of Porterville lemons from that section are remarkably good keepers. In some instances lemons from there have been kept as long as 16 months and it is nothing unusual for them to be kept for a year.

The 25th annual Citrus Fair at Cloverdale will be held February 18 to 22 this year. The committee in charge of finances report that there is plenty of money on hand and the fruit in that section is particularly fine for exhibition purposes.

G. V. Rude, manager for A. J. McPherrin of Imperial, says they will plant 40 acres to Marsh Seedless grapefruit this spring. Imperial Valley grapefruit compares most favorably with the Florida product.

Harris Weinstock, director of the State Market Commission, has sent out letters to 1700 olive growers over the State seeking their co-operation and advice on the formation of a marketing association to deal with the olive marketing problems.

The Ehman Olive company's 100 acre ranch near Lodi produced 150 tons of olives in 1915. It has been found that land on which alfalfa seeded was between trees and irrigated properly, produced more and better olives than the section of the orchard which was cultivated.

Shipments of citrus fruits from Riverside will be heavy as soon as the railroads are in shape to handle them, according to advices from there. Picking was started immediately after the rains of last week stopped. A total of 259 cars of oranges and 52 of lemons were shipped for the season up to January 21.

The Riverside Press gives its annual estimate on the citrus fruit and places the crop for Southern California at 39,450 carloads—32,000 carloads of oranges and 7,450 carloads of lemons. From north of the Tehachapi 5,300 carloads of oranges and 300 carloads of lemons, giving a grand total for the State of 45,050 carloads of citrus fruit.

FIELD CROPS.

A campaign against the Russian thistle will be started on the Phelan ranch in Butte county at once.

Arkelian Bros. have 2,000 acres of cantaloupes in Imperial Valley, according to their manager M. Manoogian.

A large number of the Japanese berry growers in the vicinity of Watsonville will raise beans the coming year.

A report from Kings City says that C. M. Hanson will plant 47 acres of alfalfa on his ranch near there this year.

Christiansen, Bumeister and Sevelon will plant 1500 acres in Natomas Consolidated District, 1000 to rice, the coming season.

Announcement was made last week at San Diego that a new sugar beet factory will be erected at that place in the very near future.

A report from Yuba City states that B. Cooper, a successful rice grower from Gridley, will plant a large acreage of rice the coming season on land near Encinal and Live Oak.

The Pacific Rice Growers Ass'n have asked aid from the State Commission Market in financing their crop. Col. Weinstock has written to New York and Washington for advice.

The Escondido Vegetable Growers' Ass'n of San Diego county are endeavoring to get enough farmers to plant tomatoes this year to make a total of 900 acres. About 200 acres were planted as an experiment last year.

Twelve carloads of hops were shipped from Chico last week, mostly to England. A dispatch states that there are now about 26,000 bales of hops in the Sacramento valley unsold.

The government has 1900 different varieties of wheat under observation at their experimental gardens at Chico. There are also about 600 varieties of grapes under cultivation at the same place.

Approximately three-quarter million eighty-pound sacks of lima beans are now stored in California according to reports from Ventura Two-thirds of this number are in warehouses in Ventura county.

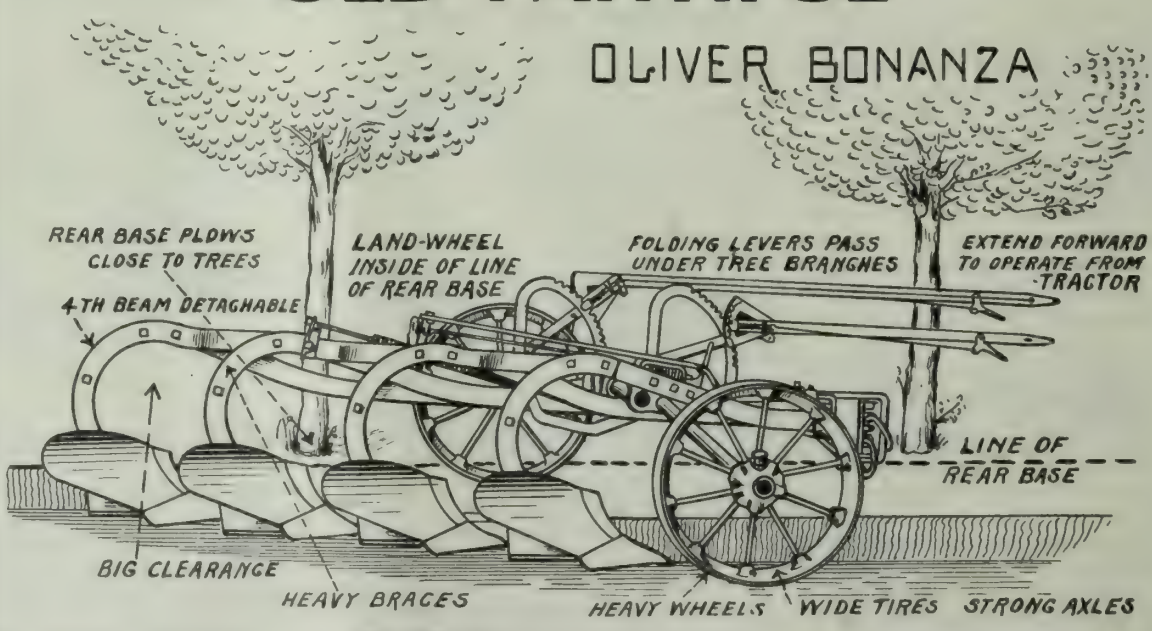
A meeting of rice growers will be held at Sacramento, January 29, when a report of the special committee, appointed some time ago to look into legislation regarding water grass and other pests, will make their report.

The Rindge Land and Navigation company will plant 1,000 acres of sugar beets on some of their reclaimed delta lands in San Joaquin county. They also expect to increase their acreage of hemp from 400 to 1,000 acres this year.

The United Marketing Co. of Los Angeles is to build a cantaloupe packing shed at Brawley, 225 feet long and 30 feet wide. Melons will be received all along one side and trucked away from along the other side, packed for shipment.

A potato flour mill will soon be in operation on land owned by the Rindge Land and Navigation company near Stockton. It is expected that this mill will be an asset to the potato growers of that section as it will convert cull tubers into a valuable product.

"OLD FAITHFUL"



FEATURES:

Size—3, 4, or 5 Bottom, 10-inch cut.
Levers—Adjustable forward or backward, for tractor or horses.
Levers—Solid or folding, for Field or Orchard.
Bases—Chilled or Steel, for gritty or adobe soils.
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Description—Write for more particulars of the California Ranchers' Dependable Plow.



The Oliver Combined Rolling Coulter and Jointer for Covering Trash and Insuring Good Plowing.

Oliver Chilled Plow Works

Los Angeles San Francisco

W. P. Carrol of the United Marketing Co. says that there are 8500 acres of cantaloupes being planted in Imperial Valley this year. The Cantaloupe Exchange organized to prevent the glutting of markets handled 4,468 cars last season while only 200 cars were handled by outsiders.

L. E. Clearman of Clovis is very enthusiastic over the Ettersburg strawberries sent out by the Pacific Rural Press three years ago. Last year, which was the second crop, the berries were very large, of deep red color and rich in flavor. Mr. Clearman states that he found that 14 of them weighed a pound. The largest one measured 5¾ inches in circumference.

An effort is being made by State Horticultural Commissioner Cook to get several potato growers in the Pajaro valley to grow certified potatoes this year. In order to be certified the potatoes must be inspected three times, during blossoming time, before harvesting and after harvesting. If they are found free of disease a seal of approval of the State is given the owner.

Potato growing on a larger scale is the slogan which is going the rounds in all sections adapted to spud growing. Meetings were held at Watsonville and Salinas last week at which places Horticultural Commissioner Cook, W. V. Shear, of the U. S. Dept. of Agr., Eugene Grubb, potato expert for the Southern Pacific railroad, and Mr. Phreaner, the champion potato grower of the State, talked to large audiences of farmers. The speakers all urged the growing of certified potatoes and told of the various pests and how best to avoid them.

VINES AND VINEYARDS.

A shipment of 50,000 gallons of wine was made last week by Frank Garatti of Pleasanton to Chicago dealers.

Advices from Fresno say that there were approximately twelve thousand tons of raisins shipped from the State in December, 1915,, which was one and a half times as many as were shipped during the same month in 1913 and 1914.

The 15-acre Thompson Seedless vineyard belonging to P. W. Brooks near Meloland, Imperial county, is to be increased to 35 acres the coming season. They are three weeks earlier than the Malagas according to Vahan Azhderian who handles the vineyard.

A new grape called Maraville de Malaga has been tried out by the government near Brawley with 214 other varieties and has proved much better on the hard alkali soil than the Spansh Malaga, whch is now the principal commercial grape of Imperial Valley.

MISCELLANEOUS.

In Egypt, horse beans are the only concentrate fed by many stockmen, who give some of the various straws as roughage.

It has been conservatively estimated by the government that the annual direct losses from animal diseases are approximately $212,000,000.

Lay Bros. of Winnemucca, Nevada, have recently received a carload of purebred bulls which will be used on their ranch in the Jackson mountains.

The Hobson Co. shipped four carloads of pulp cattle from Ventura to the Los Angeles market last week, which were said to be in prime condition.

Cattle came through the recent heavy storms in Humboldt county in good shape, according to advices from there, and the feed is in good condition.

David F. Lane was chosen general manager of the Turlock Merchants and Growers' Corporation at a meeting of the board of directors of that organization last week.

We have just received from the Portland Union Stock Yards Co., at Portland, a ver comprehensive report of the receipts and prices of livestock at that market during 1915.



1500 lb. G. M. C. model being used to haul oranges near Redlands, Cal.

A Truck to Fit Your Business

1500 lbs. GMC **to 5 Tons.**

TRUCKS

Don Lee now controls California for this line and the Don Lee organization stands back of the G. M. C. trucks. During the ten years this organization has been growing from a small sales house to a company with six branches and 50 agencies, the service given by Don Lee to owners has been winning a correspondingly high place in motor car circles.

The G. M. C. line fills all requirements. Whatever size or style your business requires there is a model to meet the requirements.

"Model 15"—All Purpose Truck

We invite prospective buyers to make comparison of the specifications of the G. M. C. Model 15 with any other 1500 lb. truck on the market.

The Model 15 is a rugged light truck, built for real truck service, and it will stand up and be a good truck long after those of lighter construction are out of service. For that reason we claim that the Model 15 is the cheapest 1500 lb. truck on the market—not the lowest in price, but the most economical.

Considering the quality our price is very low. The cost of upkeep is also very reasonable. The price of all the parts as priced in our parts list is but a little more than the price of the complete truck. Take the parts list of any other truck and figure the total cost of all the parts if bought singly and see what the cost would be.

In buying a truck there is a great deal more to be considered than the first cost. A very important point is the operating cost and the expense of upkeep.

It is very poor economy to save $200 to $500 on the purchase price of a truck and get one that with a little extra hard service will have to go to the repair shop, or, at best, will not last more than half as long as one that is built for hard service.

The time lost in the course of a year with a car that has to go to the repair shop frequently means much to the owner—it often means loss of trade. "Safety First" in haulage and delivery is just as important as anywhere else.

1¼, 1½ 2 Tons.

Worm Drive Modles

These models are the latest and highest type of motor trucks built by the pioneer builders of commercial cars.

Detailed specifications may be found in the catalogues published. A few of the more important features are as follows:

Continental motor, of heavy duty type, with a three-point support and in unit with the clutch and gear set. The idea of this is to keep the motor, clutch and gears in alignment at all times, regardless of the position of the wheels.

Transmission, Brown-Lipe, sliding gear, with four speeds forward and reverse. The low gear reductions give unusual pulling power.

The drive is known as "**David-Brown Timken Worm Drive,**" assuring simplicity, cleanliness, ease of adjustment and a less number of parts. Facts that are convincing over the old-style chain drive. The drive shaft is of solid chrome nickel steel of large diameter.

All bearings throughout G. M. C. trucks are Timken—the last word in bearings.

All frames are constructed of open hearth pressed steel and heat-treated. This adds to the long life of the truck, making the frame the same strength at one point as another.

Other Models

The new 3½ and 5-ton models will be here March 1. Either chain or worm drive.

Full line of electric trucks from 1000 pounds capacity to six tons. The electric trucks are particularly recommended for short hauls with frequent stops.

AND REMEMBER, when you buy a G. M. C. truck you are buying from one of the oldest builders of successful motor trucks, from the only concern in the world building a complete line of both gasoline and electric trucks; buying from a concern that is backed by unlimited capital, and which has branches and distributors all over the world; that you are insured of real service for years to come.

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Please send me catalog and full details regarding G. M. C. trucks.

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Mechanical Power on the Farm.

[Written for Pacific Rural Press.]

DREDGING IRRIGATION DITCHES.

The Colorado River steals a lot of fine Arizona soil and spreads it out over some 300,000,000 acres of Imperial county by means of irrigation water. Where the water is not kept constantly flowing fast enough, that Arizona soil settles in the bottom of the ditches and often entirely covers the outlet gates to fields. The main canals of each district must be dredged out three or four times a year at district expense.

A characteristic dredge is the one operated by W. R. Wright in Water District 6 near Signal Mountain. It is a Routh dredge built in the valley. Power is furnished by a 10 h.p. International gas engine both to dredge out the mud and quicksand, and to keep the dredge itself moving constantly forward on three broad wheels which run along the tops of the ditch banks.

The dredging is done by 10 metal buckets about 3½ feet center to center, on an endless chain which is run by a geared shaft from the engine. The end view of a bucket is the shape of a section of a circle with 16 inch radii. The buckets are over a foot wide with a cutting edge along the front and a loose back or bottom to hold the dirt. This loose bottom is dumped at the proper place by a projecting arm which catches on a fixed obstruction. The lower end of the chain of buckets may be raised or lowered at will with a set of pulleys operated from a hand wheel beside the engine. It dumps the wet dirt on top of the bank in front of an edgewise plank extending diagonally backward to scrape it over the edge and leave a smooth flat top on the bank.

A triangular channel-iron frame resting on the two wheels on the bank being dredged, supports the engine and operator's platform. An 8 inch iron pipe about 22 feet long extends across the ditch from this frame to a broad wheel on the other bank. This is held in line by a wire rope to the front end of the frame. The front wheel is steered by the operator with a handwheel.

The outfit is moved steadily ahead by means of a drum, geared into the engine, which winds up a wire cable hitched to a braced fence post set in the bank ahead. Another man lays timbers for the outfit to crossgates, shovels out a flat track on the bank for the wheels when necessary and does odd jobs.

The engine has three speeds. On low, she cleans about ¼ mile of one side of a ditch per day including stops for repairs, etc. In easier digging on intermediate speed, she travels twice as fast.

A PUMP GUARANTEE.

According to Prof. G. E. P. Smith of the University of Arizona there is a great deal of misrepresentation done by salesmen for new pump manufacturing concerns. He says that it frequently happens that an agent is willing to make a very high guarantee for his pump. Usually, however, the guarantees are of such a character that the purchaser cannot make the necessary tests. Even if the tests are possible, not one farmer in a hundred goes to the trouble to make them, and so the agent feels quite safe in taking long chances. The usual guarantee is for mechanical efficiency. But to test mechanical efficiency requires special apparatus and the services of an engineer. Purchasers should ask for a guarantee as follows:

"....gallons of water per minute on .... feet lift, with a fuel consumption not to exceed .... gallons an hour."

The standard pumps, reciprocating and centrifugal, have been brought to their perfection through slow evolution. Their merits are known, and it is far better to purchase machinery that is already proven than to experiment with untried machines on the strength of glittering promises and hot-air talk.

HOW MANY HORSES WILL TRACTOR DISPLACE.

To the Editor: If a tractor pulls 7500 pounds at the draw bar and the tractor is traveling two miles an hour, how many ordinary horses does it displace? What is the standard draft in pounds, that a horse pulls and can stand up to in a day?—F. H. A., Santa Paula.

[Answered by Prof. J. B. Davidson, University Farm, Davis.]

A tractor exerting a pull of 7500 pounds on the draw bar and traveling two miles an hour would develop 40 tractive horse power,—the solution of the problem is as follows:

$$\frac{7500 \times 5280 \times 2}{60 \times 33{,}000} \text{ equals } 40 \text{ H. P.}$$

It is to be noted that there are 5280 feet in the mile and 33,000 foot pounds of work required in one minute for each horse power. A horse will exert under normal conditions for ten hours, a pull equal to about 1-10 of its weight. Thus this tractor would be equal to about fifty 1500 pound horses.

It is to be noted in this connection that a horse can for a very short time exert a much larger effort than that represented by 1-10 of its weight. On the other hand the gas tractor cannot be worked at its full capacity all of the time because part of its power must be reserved for the emergency. The tractor which would pull 7500 pounds continuously would be either working under very favorable conditions or else is a very large tractor.

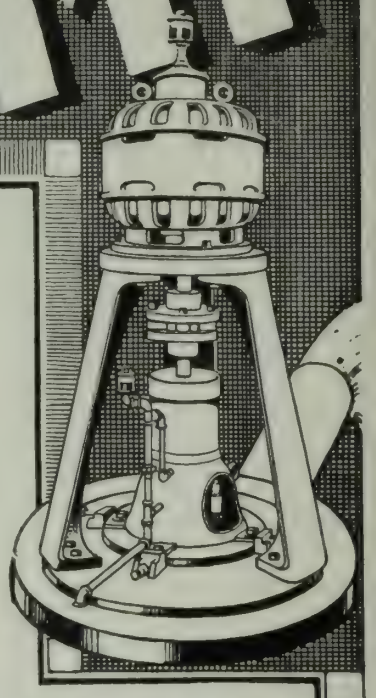
HISTORY OF AXLE GREASE.

While lubricants have been used on axles ever since the first pair of wheels were carved out of wood, the axle grease of the present day is of comparatively recent manufacture.

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Complete Pumping Plants of Any Size or Type Furnished and Installed.

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For Every Purpose NEW Threads & Couplings. Hot Asphaltum Dipped

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Screw Casings Fittings and Valves Guaranteed for Pressure

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Main and Howard Streets. San Francisco, Calif.

Probably the first lubricant of any kind to be used on axles was pure animal fat—quite similar in every respect to the grease the housewife of today uses in greasing her pans. This met the requirements of that day and generation — and indeed, it is still used in some parts of the world.

We need go no further than Cuba, or Central America where the big clumsy wooden-wheeled, ox-drawn carts are still in vogue. Each carreta, as they are called, carries a bottle of grease tied to the axle, so it will be handy when needed. Owing to the poor lubricating qualities of this tallow, the axles must be greased frequently.

Various kinds of oils have been used for axle lubrication, but for the reasons that they were too expensive, not heavy enough, etc., they have been discarded, notably castor oil, which is now prohibitive in price.

The ideal axle grease must embody these points—a good lubricant must not contain acids that will injure the axle; must be durable; of sufficient consistency to withstand the summer heat, and in wet and stormy weather during the winter, axle grease must be sufficiently adhesive (without being gummy) so that the water will not wash it from the axles. Flake graphite added in the manufacture to regular amber colored axle grease makes a combination which is particularly fitted to overcome moisture, and that is why a graphite axle grease is recommended during the winter months.

Although there are many cheap grades of axle grease on the market, the best brands which cost a trifle more are the only kind that have given satisfaction. Sensible purchasers realize that quality means more than price, and that cheap greases cost more in the end. For that reason, sales of high-grade axle greases are increasing every year.

TRACTOR VINE DIGGER.

[Written for Pacific Rural Press.]

A specially constructed grapevine digger was built for the large Stanford University Ranch vineyard in Tehama county by the Killefer Mfg. Co. of Los Angeles. It is to be pulled by two big Caterpillars. It will cut the vine roots and lift the vines high and loose enough so they may be pulled by hand. The machine weighs 7500 pounds. It consists of a channel iron frame eight or ten feet long, whose front end rests on a pair of heavy iron wheels high enough so the axle runs over the vines. The frame is pivoted so the rear end may be raised or lowered.

The rear end consists of a heavy iron U whose ends are pivoted at the rear corners of the frame so the U can swing forward or backward. From a point midway to the ground, on each leg of the U, a heavy iron bar slopes forward to a cross piece which connects them above the frame and to the rear of the front axle. This crosspiece is bored through the center and threaded for a heavy screw to work in. The screw is held by a crosspiece pivoted in a framework built on the main frame of the machine, and over the front axle. The screw is worked by means of a handspoked wheel by the operator who stands on a platform.

In the bottom of the U is a sharp edged shoe or plate which cuts the main roots of the vines. It slopes upward and backward to lift the vines and loosen the dirt about them. Two wing plates are fastened to the upper half of the U to guide it centerly under the vines.

When the digger is to be worked, the screw wheel is turned to swing the U back and tilt it so it will run deep. Working the screw the other way levels the cutting shoe or slopes it the other way so it runs out of the ground. A pair of wheels on an axle are provided to hold the weight of the rear end while running on the road.

The machine was tested early in January and the following message wired to the company: "Grape stump plow great success."

MOTOR-PLOWS IN ENGLAND.

An English paper says: "One of our readers writes: 'I am on the save this winter, as I want to buy a motor-plough next year.' Another reports traveling with a party of farmers on their way to a county-town market. All were in a large way, and their talk was of motor ploughs which some had got, others had hired, or meant to obtain before another year. They had nothing but praise for the result, and agreed that the daily cost in gasoline was one dollar less than the keep of the 4 to 6 horses which it would take to do the work of the motor-plough."

POWER NOTES.

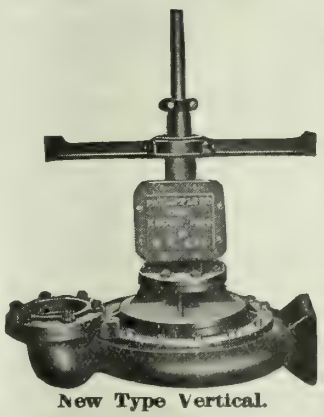
Between January 31 and February 12, the Holt Manufacturing Co. of Stockton will hold their second annual caterpillar school. Instruction at this school is free to owners of Caterpillars or to anyone to whom they may care to transfer their privilege. More than 100 have already enrolled for this instruction and it is expected that fully 200 will attende. F. L. Peterson, formerly with the University of California, and who conducted the school last year, will again be in charge. The work in the school includes lectures or ignition, valves, valve-grinding and valve-setting, carburetion, causes of carbon in cylinders, economical operation and many other subjects directly related to the motor. In addition, lectures on the various adjustments of the caterpillar—clutches, transmission, track, etc.; scientific cultivation; instruction in the care and repair of magnetos and carburetors, in proper loading and hitching of different types of implements, in tractor maintenance and field repair.

The Killefer Mfg. Co., of Los Angeles, some time ago shipepd a specially constructed plow to Honolulu with the understanding that if it proved satisfactory there would be orders for 100 more. On January 8 an order for the second one was cabled them. There are three mold board bottoms which plow 20 inches deep and a sub-soiler under each, which goes 10 inches deeper. A 75 h.p. tractor is required to pull it.

Federal Judge Oscar E. Trippit of Los Angeles and Clay Larimor of North Dakota have recently had a thousand-foot well drilled on their ranch southeast of Los Angeles, formerly a part of the Tweedy Ranch. A new Layne & Bowler turbine centrifugal pump has been installed. This tract is leased to truck growers and makes a valuable addition to the city's vegetable supply. The large pump installed was manufactured in Los Angeles.

Guy .C Earl, attorney of San Francisco, has recently had a 16-inch well drilled on his ranch at Palmdale. He has installed a Layne & Bowler turbine centrifugal pump in the well.

The KROGH Vertical Pumps



New Type Vertical.

Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film; absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts means less friction and greater efficiency.

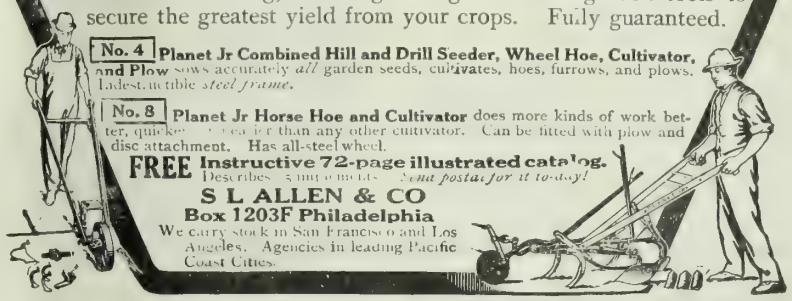
Get our Bulletin No. 78 before deciding on a pump.

KROGH MNFG. CO.

SAN FRANCISCO. LOS ANGELES.

Planet Jr.

Get these time-saving, labor-lightening farm and garden tools to secure the greatest yield from your crops. Fully guaranteed.



No. 4 **Planet Jr Combined Hill and Drill Seeder, Wheel Hoe, Cultivator, and Plow** sows accurately *all* garden seeds, cultivates, hoes, furrows, and plows. Indestructible *steel frame.*

No. 8 **Planet Jr Horse Hoe and Cultivator** does more kinds of work better, quicker and easier than any other cultivator. Can be fitted with plow and disc attachment. Has all-steel wheel.

FREE **Instructive 72-page illustrated catalog.** Describes 54 implements. *Send postal for it to-day!*

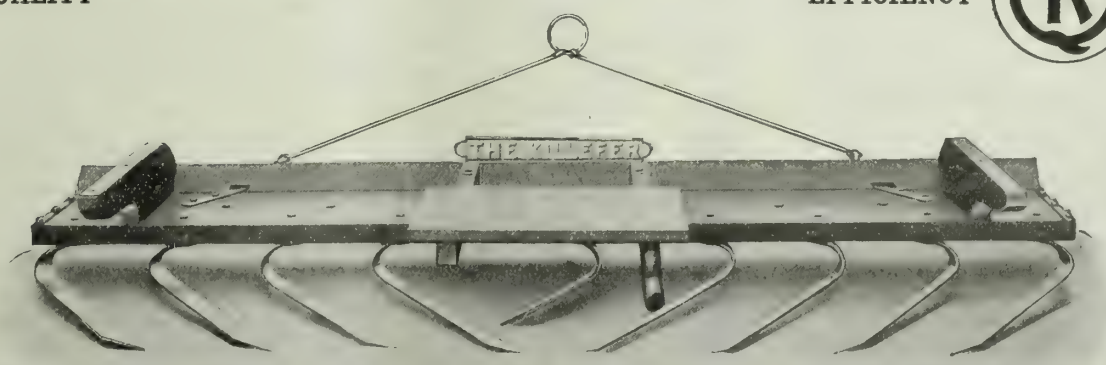
S L ALLEN & CO
Box 1203F Philadelphia

We carry stock in San Francisco and Los Angeles. Agencies in leading Pacific Coast Cities.

The long continued rains will make the call for WEEDERS and MULCHERS very heavy during the next few weeks, and as there is a very limited amount of these tools on hand, it is advisable to get orders in early.

KILLEFER QUALITY

KILLEFER EFFICIENCY



Clean Cut Weeder and Mulcher

It is just what the name implies, the most effective tool for keeping down the growth of weeds after rains or irrigation on orchard, bean, beet, or grain land. It does twice the work with the same team of any other tool for this purpose, and as the knives overlap each other it is impossible to miss anything in their course. Our patented knives are formed with a straight throat so that they wear uniformly from heel to point and are all stamped with our quality trade mark.

The orchardist will find this tool a valuable one for leveling down furrows and for preparing the ground for the cultivator. The large range of work makes it almost indispensable, and the extremely low price at which it is sold brings it within the reach of all. **Made in 4, 5, 6, 8, 10 and 12 foot sizes.**

THE KILLEFER MANUFACTURING COMPANY

2209-21 SANTA FE AVENUE, LOS ANGELES, CAL.

Silos Prove Corn Possibilities.

[Written for Pacific Rural Press.]

If everyone's experience in raising Indian corn for the silo is as enlightening as that of A. B. Goodwin, near Manteca, San Joaquin county, the time should not be far distant when corn will be the leader of summer crops in this State.

After erecting his 120-ton silo last spring Mr. Goodwin was advised to plant about 16 acres of his sandy loam, sub-irrigated land to corn, in order that he might have enough forage to fill his silo.

After plowing and harrowing, the land was planted the first week in June, Yellow Leaming seed being used. Planting for silage the planter was regulated to drop seed every 18 or 20 inches in rows 40 inches apart. The field was cultivated three times and cut with a corn binder the middle of September.

At that time it stood 10 to 12 feet high in the shock and instead of requiring the entire 16 acres to fill the silo, less than eight were needed and the balance was left in the shock for grain. Although it was planted too close in the row to make a heavy yield of grain, it was estimated by corn growers that it would go 40 or 50 bushels to the acre. This yield in connection with a lot of good pasture for a herd of 50 hogs convinced Mr. Goodwin that Indian corn is a more profitable crop than the sorghums in his locality and a lot easier to handle.

This year he expects to plant two fields, one for silage and one for grain. He will precede the silage crop with a crop of oats for hay.

WHEN TO PLANT SORGHUMS.

[Written for Pacific Rural Press.]

Growers of non-saccharine sorghums in the interior valleys have found that it does not pay to delay planting too far into the summer, because of the difficulty of getting it to ripen before the fall rains.

Last year was exceptional on this account as the heavy rains held off till December, but even then some of the sorghums, particularly feterita, were not thoroughly ripe when harvested and heated badly as a result.

When possible, planting should be done early in May and if soil moisture conditions are at all favorable, harvesting can be safely done in September, before the normal rainy season starts.

Experience on many ranches last year indicated that feterita yielded more grain than the other sorghums, but complaint was registered that it heated badly in the sack. Early planting will overcome this as it is primarily a matter of having it thoroughly ripened before harvesting.

PLOW BERMUDA SHALLOW.

[Written for Pacific Rural Press.]

Bermuda grass proved the savior of the sandy, washy, irrigation ditches in the pioneering days of Imperial valley. It is now seeding the cultivated lands. Horticultural Commissioner F. W. Waite and Dairy Inspector H. T. Nye agree that the only way to kill Bermuda grass is to plow it not over four inches deep and very thoroughly, turning it upside down to expose its roots to the hot sun from April until July or August. Then it may be replowed, deeply this time, and barley or sorghum corn planted. Mr. Nye says even sheep won't kill it here, and that unless alfalfa is given all the attention it needs to keep every part of the field vigorous, Bermuda will spring up where it is weak and surely choke it out.

MISCELLANEOUS NEWS NOTES.

About 1300 head of beef cattle are being fattened entirely on cottonseed meal and hulls at the Imperial Valley Oil and Cotton company's mill at El Centro. There are also about 900 at the Calexico mill.

The State Prison Board Directors set a price of 10 cents each for the 4,500,000 grain bags now on hand by that institution. They estimate that 60,000,000 bags will be needed for this year's crop of grain in the State.

At a meeting held at Sanger, January 15, it was unanimously decided to organize a farm bureau and circulate a petition to be presented to the board of supervisors for the establishment of a farm adviser in the county.

According to G. E. DeSellem, county bee inspector for Los Angeles county, 3,000 tons of honey were produced in the southern part of the State last year. The average price for honey last year was right around $100 a ton.

The owners of the Nacimiento ranch near Kings City are just completing the installation of an irrigation system which will allow them to grow several hundred acres of alfalfa. With the completion of the development work it is thought that the company can turn off their cattle in the late fall and early winter. The ranch is carrying about 2,000 head of cattle this winter.

Second Thousand Answered Questions in CALIFORNIA AGRICULTURE

Our latest book, just from the press, contains 256 pages of text, cloth bound, and sells for $1.50 per copy.

This book is made up of questions and answers. Divided into nine parts, covering fruit growing; vegetable growing; grains and forage crops; soils, fertilizers and irrigation; live stock and dairy; feeding animals; diseases of animals; poultry keeping; pests and diseases of plants.

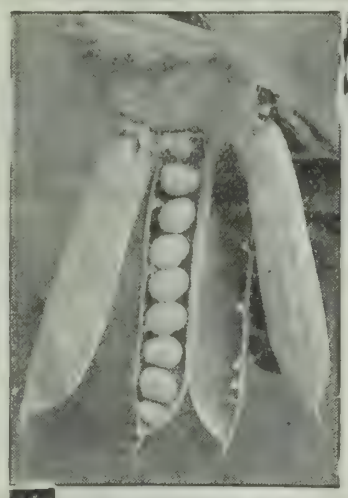
The live stock and dairy, the diseases of animals, and pests and diseases of plants are very fully covered. We believe that there has never before been printed such a complete list of sprays and poisons and tables for use as are here given.

You need this book in your library. It will come in handy every day in answering some bothersome question which may need quick action. The carefully compiled index tells you where to locate the information you want at a glance.

We want to send you a copy. Send for our special offer made to every one of our subscribers.

PACIFIC RURAL PRESS,

525 Market Street, San Francisco.



STRATAGEM PEAS
lb. 20c 10 lbs. $1.50
The best main crop variety. We pay postage.

1916 SEED CATALOG Now Ready

It is free—mailed on request. It tells how and when to plant—garden, flower and field seeds.

Alfalfa Seed

We believe we have the finest stock of alfalfa seed ever gathered together in California. Our **Surprise Valley Seed** which we consider our best is **absolutely free of dodder** and all other varieties of weed seed. This seed was raised in the extreme Northeast corner of the State—Modoc Co.—and will produce a hardier and heavier crop than seed raised in a warmer climate. **Samples and prices on request**.

Seed Potatoes

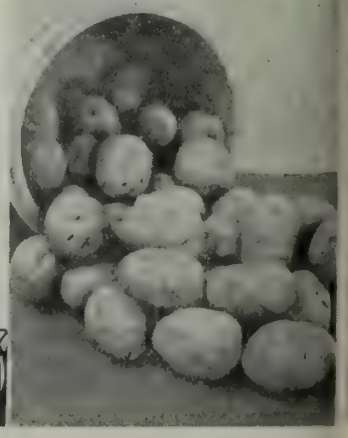
We now have a fine, true to name, healthy stock of American Wonder, Early Rose and Garnet Chili Potatoes. These are all good, early, standard varieties suitable to California conditions.

Write for prices.

VALLEY SEED CO.

506-508 Jay St. Sacramento

WE DELIVER FREE BY PARCEL POST, EXPRESS OR FREIGHT.



Community Effort and Hanford Hog Sale.

[Written for Pacific Rural Press.]

If any evidence were needed of the magnitude purebred hog-raising has attained in just recent years in California, it could be no more forcibly presented than in the announcement of the first semi-annual sale of Poland-Chinas which are to be sold at Hanford February 5th.

As we pointed out in this paper before, Kings county's advance in purebred swine husbandry, and particularly with Poland-Chinas, has been more marked than any other county in the State; and yet, few would have considered it possible to have assembled 150 head of registered hogs, all of one breed, into an auction sale from even Kings county.

Another point which the announcement of this sale brings out is the value of community effort with one breed. Such a sale would not be possible in communities where each breeder has a different breed and where co-operative work is largely lost on that account. The lesson which this sale affords is therefore well worth remembering by farmers in new and growing sections of the State, as well as in our older districts.

As to the animals offered in this sale, the names of the consignors speak for the quality of the stock. They are M. Bassett, Wm. Bernstein, J. A. Crawshaw, Oscar Dimmick, F. D. Ross, Geo. A. Smith, W. D. Trewhitt, and T. J. Gilkerson.

In writing this office regarding the sale Mr. Bernstein says: "I am consigning a number of tried sows in this sale which will be a real attraction. Two are sisters to the 1914 State Fair champion boar, and two are sired by him, also several young boars and open gilts. Am also offering four big-type sows that have raised two litters each. Have 33 head altogether in the sale."

J. A. Crawshaw has ten head in the sale, two typey boars, four gilts bred to Long Wonder, his reserved herd boar, and four pigs, three females and one male. Both of the boars in this offering are of serviceable age, and the entire lot are of choice breeding.

W. D. Trewhitt has 37 head in the sale, consisting of two aged sows, 25 gilts, and 10 boars all of serviceable age. They are sired by such good boars as Jumbo Equal, Big Chief and Nugget, and are out of Mr. Trewhitt's best sows.

M. M. Bassett is offering four boars by such breed leaders as Hustler and carrying the usual good Bassett individuality.

Geo. A. Smith has 10 boars and 12 open gilts in the sale, sired by Iowa Wonder.

F. D. Ross has four boars and five gilts in the sale, sired by The Kid and Warrior.

T. J. Gilkerson has nine head of nice ones consigned, sired by Stratford Bay; and Oscar Dimmick, four pigs sired by Chief Picture 2nd.

SWINE BREEDERS MEET.

The annual meeting of the California Swine Breeders' Association was held at Sacramento, Jan. 26; A. M. Henry, President, presiding. There were present close to 75 swine breeders and those interested in the production of more and better hogs in California.

Splendid interest was taken in the subjects discussed, and it is to be regretted that 750 instead of 75 did not attend to hear the facts, ideas, and suggestions brought out by the veterans in the swine business, on the breeding, growing, and selling of hogs.

Probably to most of the hog men present, the subject of hog cholera and its control, taken up by Dr. B. J. Cady of the U. S. Dept. of Agri., who has for a number of years been carrying on a fight against this disease in this State, was the most interesting and valuable. It is a vital question that all hog men have to face; and which can be best met, as Dr. Cady pointed out, by the co-operation of all the farmers in the State. The facts and information given were a direct result of Dr. Cady's own personal work.

C. B. Cunningham of Mills gave a very interesting talk on the selling side of the purebred business.

Two barrows were judged by Prof. J. I. Thompson, from a butcher's standpoint, and some very interesting points brought out. On Thursday, the same hogs were again judged after they had been dressed, by one of the local butchers at the Fair grounds.

C. N. Slocum of Willows stated some very interesting facts on the value of a good pedigree, while A. B. Humphrey of Mayhews spoke on the value of a good sire.

Chas. W. Paine, Secretary of the State Board of Agri., was there to tell the breeders that the 1916 State Fair would be the biggest ever.

The subject of feeds and feeding, on which a number of breeders gave their views, proved quite interesting and valuable to all.

As this was the annual business meeting of the Association, an election of officers was held and C. B. Cunningham of Mills was elected President; J. K. Fraser of Denair, Vice-President; Prof. J. I. Thompson, Secretary; and A. B. Humphrey, Mayhews, M. Bassett, Hanford, M. Rucker, Fair Oaks, and Alex S. McCarty, San Francisco, Directors.

Further particulars in regard to the meeting and sale will appear in the next issue.

The American Sugar Beet Co. has received 50 tons of beet seed for this year's planting in the vicinity of Chino.

JERSEYS!!



EMPRESS LASS,

Grand Champion Jersey cow at Alaska Yukon Exposition and several times at California State Fair. Gave 82.32 pounds fat during December, 1915, under dairy conditions.

Her Grandsons and Other Bulls From Good Producing Cows **FOR SALE. Priced Right.**

N. H. LOCKE CO., Lockeford, Calif.

40 Shorthorn Bulls and Heifers

REGISTERED AND TUBERCULIN TESTED.

NOW, at my farm at Perkins, 6 miles East of Sacramento. This stock was purchased from the best herds in Nebraska for my California trade, and are as fine a lot of one and two-year-olds as I could secure. Inspection invited. Call and see them before purchasing elsewhere.

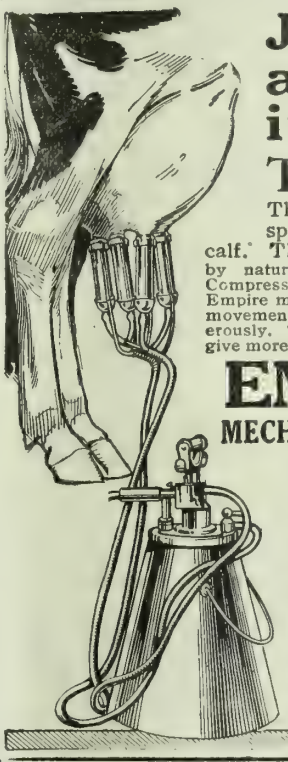
Also have a few registered **BERKSHIRE GILTS** for sale.

I will leave shortly for the East to fill orders for Shorthorns and Herefords. Write me at once of your wants so that I may fill your order on this trip.

H. L. MURPHY

PERKINS, SACRAMENTO CO., CAL.

Brighton Herd of Shorthorns. **Established 1880.**



Just Like a Sucking Calf

THE Empire way is the natural way. The milk is drawn in spurts as by a sucking calf. This action is produced by natural atmospheric pressure. Compressed air is harsh, irregular. Empire milking is a gentle, uniform movement that cows respond to generously. They stay fresh longer and give more milk.



EMPIRE

MECHANICAL MILKER

One double or two-cow unit takes care of 20 to 30 cows per hour. One man can operate two double units. No costly or elaborate installation. Only one tank—only one pipe line. Operation is simple and economical. Install the Empire and make your dairy modern, efficient, profitable, sanitary—money-making and labor-saving.

Write for description and pictures showing Empire Milker and Empire Separator in modern dairies. Get our offers on Empire Gasoline Engines and Empire Star Feed Mills. **Ask for Catalog No. 45**

EMPIRE CREAM SEPARATOR COMPANY

Chicago, Ill.; Denver, Colo.; Portland, Ore.; San Francisco, Cal.; Montreal, Toronto, Winnipeg, Canada.

FIRST SEMI-ANNUAL SALE

OF

Kings County Poland China Breeders' Association will be held at

The Fair Grounds, Hanford, Calif.

Saturday, Feb. 5th, 1916.

On this date there will be one hundred and fifty head of Registered Poland Chinas sold, consisting of

Bred Sows, Bred and Open Gilts

and a number of **High Class Boars**

Some of the best animals from the leading herds of Kings County will be sold without regard to price or value.
This sale will be absolute AND WITHOUT RESERVE.
No protection measures of any kind will be permitted.
Sale under cover and will be held, rain or shine.

CONSIGNORS:

M. Bassett
Wm. Bernstein
J. A. Crawshaw
Oscar Dimmick
T. J. Gilkerson
J. D. Ross
Geo. A. Smith
W. D. Trewhitt

AUCTIONEER:

COL. BEN A. RHOADES,
Assisted by T. J. GILKERSON.
For catalog or information, write
F. E. NEWTON,
or any consignor, Hanford, Cal.

TREWHITT'S

Large-Type Registered

Poland Chinas

Boars, Bred Gilts, Open Gilts, clean, smooth, easy feeders. Boars transmit their good qualities. Sows have large strong litters. No better anywhere. Inspection invited. All stock guaranteed.

Am consigning some of my best to the Kings County Poland China Breeders' sale at Hanford,

February 5, 1916.

W. D. TREWHITT,

HANFORD, CALIF.

Boars---Bred Sows Gilts

POLAND CHINAS

I shall sell 33 in the **Hanford Consignment Sale, Feb. 5th.** My boars have merit and transmit merit. My sows have large, strong, active litters. You can build up your herd by buying some of my best.

W. Bernstein

Hanford, Kings County, Cal.

National Publicity for Dairy Products.

[Dairy Interests of Nation Propose Following Plan of California Orange and Raisin Growers Towards Increased Consumption.]

A great national education advertising campaign having as its object a better understanding as to the real food value of dairy products among the average housewives of the nation and a better portrayal of the industry to the public as a whole is the most important need of the dairy industry of this country at the present time.

Such is the decision of the committee of ten, appointed by the National Dairy Council to investigate the situation. This committee was composed of members from the following dairy interests of the country: cattle, milk producers, butter, cheese, milk dealers, food commissioners, feed, ice cream, farm machinery men, dairy and creamery machinery maunfacturers.

It is the opinion of this committee that so much has been said by irresponsible parties and self-seeking politicians about human food, particularly those foods upon which it is so easy to center attraction, through the making of reckless statements about disease in cattle and uncleanliness of handling and manufacturing of dairy products, that the consuming public has been in a quandary as to what to buy for clean, wholesome food, that the cost of actual living might be kept within the bounds of the average pocketbook.

The National Dairy Council, representing all branches of the dairy industry, decided, at their first annual meeting, held in Chicago, November 5, 1915, to direct a campaign of education upon producer and manufacturer of dairy products to bring the quality of American products up to the very highest standard, so that an educational advertising campaign, that is to be launched at once, to have the housewives of America use dairy food products more extensively, will be backed up with quality. All individuals, firms or corporations will be approached to support both campaigns by representatives of each interest.

The Plan of Campaign.—To meet this situation it is proposed to raise a fund of $150,000 to $200,000 a year for a period of three years to cover an advertising campaign similar in character to that which proved so successful in promoting a universal use of California Sunkist Oranges and California Raisins, and of other foodstuffs, believing that there is a very imperfect understanding regarding the advance made in the industry and the actual food values offered the consumer—cost and value considered. Such a work must prove successful to these interests.

1. The campaign upon the housewife will comprise paid advertisements in national mediums and city newspapers, presenting claims as to milk, cream, butter, cheese and ice cream being the best food possible to obtain, and seeking increased patronage.

2. Distribution to publications of press matter prepared by experts and distributed by the council. These articles will be prepared and issued by publicity experts who are familiar with the industry and will cover manufacture as well as information relating to the healthfulness of dairy products.

3. Distribution of recipes. Educational pamphlets and bulletins will be distributed to the consuming public through their own agencies, such as milk men, butter and cheese dealers and ice cream parlors.

4. Organization of a Speakers' Bureau and a Demonstration Bureau in charge of women to demonstrate use of dairy products, by which consumption may be greatly increased

5. Food films of educational value for movie shows, showing manufacture and distribution of dairy products.

The campaign upon producer and manufacturer will be equally intense through medium of bulletin and educational bureau, by which State and Federal institutional educators will show the advanced work they are doing in the manufacture of dairy products. Experts on improved methods of manufacture, to lower cost of production and distribution and improve products, will be employed to contribute their knowledge for the benefit of producers and manufacturers.

Why All Should Enlist.—This campaign of advertising is to be national in character, therefore every interest must be benefited. If one interest remains inactive, all must suffer. The sum per industry or per individual that will be required to make up the seemingly large sum of money is so very small, relatively speaking, compared to the billion dollars at interest, that it will be marveled at that something of the kind that can be so reasonably conducted has not been done before. Each individual will be called upon for support by the member of the Committee of Ten representing his interest and when the whole body of the dairy family is obligated for their share of the expense the work will be commenced. This is a work that no man should shirk his share of expense in. It means building an industry that must now be advanced to its proper place in the world's commerce and in its proper relation to successful agriculture. Competitors in all lines of manufacture have derived benefits from advertising that are at command. Will all interests reach for their share through present day methods, or permit their interests to suffer for want of proper presentation to the consuming public and open to hurtful attack when honest presentation of facts would help the cause and disarm criticism? Every man who has the welfare of the dairy industry at heart or is endeavoring to advance his own interest will respond to this appeal to arms.

This plan should meet with exceptional approval in California where the results of the national educational campaigns of both orange and raisin growers is so well known and ably demonstrated.



The milk in the pail the cow kicks over is lost forever

AND the butter-fat that goes into the can through the skim-milk spout of a cheap, inferior or worn-out cream separator is just as surely lost as the milk in the pail the cow kicked over.

If you are trying to get along without a cream separator; or with an inferior or worn-out machine, you are losing butter-fat right along and butter-fat is money.

Get Your DE LAVAL Now—Right Away

every day you use it it will be paying for itself out of its own saving.

If you haven't the spare cash right now that need not hinder your immediate purchase.

We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at time of purchase and the balance in several installments, so that a De Laval really pays for itself while you are using it and getting the benefit from it.

Let the De Laval start saving cream for you right now while butter and cream prices are highest. See the nearest De Laval agent at once, or if you do not know him, write us direct for any desired information.

DE LAVAL DAIRY SUPPLY COMPANY.

SAN FRANCISCO SEATTLE

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

HILLCREST STOCK FARM

Thornton S. Glide, Prop.

Davis, Cal.

SHORTHORN CATTLE

Shropshire and Merino Sheep

FOR SALE, SINGLE OR CARLOAD LOTS



KING LANCASTER,

Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.

THEY HAVE GRAND CHAMPIONS BEHIND THEM.

14 Months With Milking Machines.

[Written for Pacific Rural Press.]

Milking machines have few better friends in California than W. C. Hoskins, who has a large dairy near Thornton, San Joaquin county.

A little more than 14 months ago Mr. Hoskins had a three unit Empire machine installed and since then has milked an average of about 90 cows, twice a day. He hires two men, who do all of the milking, feeding and clean the barn, milk house and utensils. One man looks after the machines and the other does the stripping after the machines have been taken off. Mr. Hoskins has found this the best method, owing to the fact that the average teacupful of milk that the stripper gets consumes a good deal more of the machines' time than when milking on a full udder.

He has found that it takes nearly as long to milk the cows now, when their milk flow is small, as it did in the summer when their flow was heaviest. Last summer, when he was milking 96 Holsteins, and most of them were heavy milking ones, it took the two men about three hours, on the average, to feed, milk and wash up machines and other utensils.

He states that his cows are milked dryer now than they were before he installed the machines, principally because a milker who has a string of heavy milking cows is apt not to milk very dry unless he is watched closely. He is apt to be thinking too much about finishing his string, or his hands begin to cramp. The man running a machine is not in a hurry and his hands do not cramp.

It is of interest to note that before purchasing his machines, Mr. Hoskins went to a dairy that had put in milking machines but had taken them out. But he says that when he saw how it had been taken care of and how the cows had been treated he decided that it was no fault of the machine that it had been a failure, but entirely due to the way it had been handled.

Mr. Hoskins believes that the machines are a success providing you have men in charge of them who understand them and take pride in seeing that they do good work. His cows have not fallen off in their milk, nor have any of them had sore udders as a result of the machines, and he claims that they go a long way in solving the labor question on a large dairy.

RICE PRODUCTS FOR STOCK.

In answer to a subscriber who wishes to know about the by-products of rice as a stock feed, a resume, taken from bulletin 330, of the U. S. Dept. of Agr., says: Rice hulls are now considered of little value, if not positively harmful, as a stock feed. There is a limited market for them as a packing material of about $4 per ton, but by far the greater portion is burned to furnish power for the rice mills. Rice bran, when fresh and free from hulls, is an excellent stock feed, but on account of its high fat content it is liable to become rancid and therefore unpalatable to cattle in warm weather. It is also frequently attacked by weevils and other insects if stored in warehouses infested by them. Rice polish is a highly nutritious flour and is used in the United States as a stock feed, Like bran, it is susceptible to insect attack and becomes rancid in a warm climate. The accumulation of weed seeds mixed with small amounts of rice and sweepings from the mill is generally sold locally as chicken feed. Such material may amount in exceptional cases to 15 per cent, but the usual figure is probably less than 1 per cent.

HANDLING WOOL CO-OPERATIVELY.

To encourage the sheep raising industry of Manitoba, Canada, the department of agriculture handled last season's wool clip on a co-operative basis.

At the request of the Minister of Agriculture and Geo. Gregg, secretary of the Provincial Sheep Breeders' association, the department took charge of the work in May, circulars being sent to all the known breeders of sheep in the province, announcing the plan and giving packing and shipping instructions.

Each farmer's shipments were separately weighed and graded by an expert wool classifier and each lot treated alike whether they were from two or two thousand sheep.

On receipt of the wool the department paid an advance of 15 cents a pound and later sold the entire lot, some 17,000 pounds, at auction for $26.80 per hundred.

On the whole the results were most satisfactory to the farmer, as after deducting one per cent for commission he realized five to seven cents more per pound than he would have without the department's aid.

SUGGESTS ADMINISTRATOR FOR HORSE BREAKER.

To the Edtor: I have read with interest, in your issue of January 8, of the trouble Geo. E. Wright has been having with his saddle mare, and can sympathize with him and will earnestly beg him not to try any such pranks as a neighbor from San Andreas advised, which was on this line—"A strong bridle, a strong saddle, a heavy quirt and big spurs, a strong cord for tieing nose to cinch."

These are all well to own, but stop right there, Mr. Wright, unless you are a full-fledged member of the "Wild West Show" or of the "101 Ranch," or have first-class ability in applying all of the paraphernalia to its intended use and, more particularly, be ready yourself for what may be a change in your life. If ever you should get your person all wound up in this rigging, the sale of such animal as referred to may be conducted by an administrator or loved ones left behind.—Reader, Porterville.

[If Mr. Wright is still alive to tell the tale, we should like to have him advise us how he really did break that horse in order that the controversy may be definitely settled.—Editors.]

The Dairy Farms Co. near Modesto are checking and seeding 140 acres of land for alfalf this seson. They expect to enlarge their dairy herd to take care of the additional feed.

REMCO

REDWOOD PIPE

All diameters from 2 inches to 12 feet. Much cheaper than any metal pipe. Will carry 30 per cent more water than metal or cement pipe of same diameter. Will outlast any metal pipe except cast iron. Cannot be injured by roots or displacement. Furnished for any pressure from 0 to 400 feet, and guaranteed for 100 per cent overload.

Write for further information, prices, etc.

REMCO

Redwood Tanks

Cheaper than metal tanks. Last longer. Cannot rust. Not affected by chemicals in water. Thousands in use in the West.

We make them in all shapes and sizes, from 200 gallons to 500,000 gallons.

Redwood Manufacturers Co.

1608 HOBART BLDG., SAN FRANCISCO.

Carruthers Farms

are now offering for sale

50 Head of Shorthorn and Hereford Bulls

Serviceable, tuberculin tested, registered.

50 Head of Shorthorn and Hereford Heifers.

Tuberculin tested, registered.

These bulls and heifers are a remarkable lot, the Shorthorns being nearly all Scotch breeding.

For particulars and prices address

W. M. Carruthers
515 Hearst Bldg.,
San Francisco.

E. K. Brown
Superintendent.
Mayfield, Cal.

CALIFORNIA

Hog Book

In commenting upon the California Hog Book, the Colusa Sun says: "It contains 252 pages, 31 illustrations and 22 line drawings. It is an invaluable book to the man who is engaged in or contemplates raising hogs, as it deals with different strains, breeding and other information pertaining to the hog industry."

Price, $2.00 Postpaid.

PACIFIC RURAL PRESS, Publisher

525 MARKET STREET, SAN FRANCISCO.

With the Live Stock Men.

DAIRYING.

Creameries in Tulare paid out about $65,000 for cream received during December.

A report from Tulare says that a cheese factory is to be established near there by R. Orsi, a Swiss dairyman.

M. J. Schoonderwoerd has recently sold 40 head of dairy cows from his ranch near Chowchilla, for an average of $100 a head.

G. F. McCarty of Esparto has lately purchased the Holstein bull Maud Mooie's Prince of Riverside from The Harlan Farm herd of Holsteins at Woodland.

The cow, Frau Cremel Stratford Korndyke, owned by Mrs. T. J. Gilkerson of Lemoore, has just completed a seven-day official test with 21.69 pounds of butter.

H. R. Timm will plant 10 to 15 acres of cactus on the Hunt ranch in Contra Costa county, which he recently leased, to supply feed for additional cows which he expects to add to the Hunt herd.

Plans are under way for the consolidation of the Bodega Creamery Co. and the Bay Creamery at Bodega, Sonoma County. The new concern will be known as the Bodega Cooperative Creamery Co.

In a letter to this office from Hewitt and Hewitt of Hardwick, they say, "Have bought from G. A. Smith, Corcoran, Prince Beauty Pietertje Segis for F. M. Helm of Fresno. Paid $5,000."

W. L. Hodges, who has a big modern dairy near El Centro, plans to stock another 320-acre ranch near Holtville with purebred Holsteins. All other stock on the ranch, even to chickens, will be purebred.

Kings county dairymen received approximately $140,000 for cream delivered by them during December which made a total of upwards of $1,775,000 paid to the dairymen of that county during the year 1915.

There were 12 cows in the Tulare Cow Testing Ass'n which made 45 pounds of fat or more during the month of December. A Jersey owned by C. W. Brown topped the list with 1137 pounds of milk containing 56.9 pounds of fat.

The following prices were paid January 15, by the various creameries in the Ferndale district: Capital, 31¼c; Grizzly Bluff, 31c; Central Creamery Company, 31¼c; Valley Flower, 31¼c; Libby, McNeill and Libby, 31½c.

F. H. Van der Poel of El Centro is milking about 18 Jersey heifers sired by the bull Rowena's Interested Fern. Only one is giving less than 30 pounds of milk a day and two of them gave over 50 pounds a day soon after freshening.

The N. H. Locke Co. report the sale of Foxy Blondy's King of L., sired by Valet's King of L. and out of Foxy Blondy of L., to Chas. Nelson of San Francisco. The dam of this bull made 50.6 pounds of fat in one month as a two-year-old.

Word comes from Sacramento that T. E. Getzelman of Hampshire, Illinois, is negotiating for a location near Sacramento where he hopes to establish his herd of registered Holsteins. Mr. Getzelman has made several trips to California during the past year in search for a desirable location.

We are advised by C. M. Winslow, secretary of the Ayrshire Breeders' Ass'n, that the following officers were elected at the annual meeting held at Philadelphia recently: president, Percival Roberts, Jr.; vice-presidents, J. W. Clise, Adam Seitz and Hugh J. Chicholm. Mr. Winslow was again elected secretary-treasurer of the organization.

The 82 head of registered Holsteins bought by J. M. Henderson Jr. in the east make a total of more than 200 head of Holsteins now on the Henderson ranch. Mr. Henderson states that in a short time they will be able to supply bulls of the very best blood to be found in America, with any combination of blood the buyer may wish for. Several cows are on official test now that promise to do extra well.

J. D. Huston is building a big, open, concrete floored dairy barn at Imperial. A milk cooler, refrigerating plant, cheese factory and cold storage plant are nearly all completed, ready for operation. A big cesspool and sewer will take care of the drainage and even the bull pens will be concrete floored. He expects to sell sweet cream in Los Angeles. He has over 100 head of purebred Jerseys, all of much noted ancestry.

In the monthly statement of the San Joaquin County Dairymen's Ass'n, H. J. Culbertson, official tester for the association, gives figures showing that the cow Empress Lass, owned by the N. H. Locke Co., gave 1470 pounds of milk containing 82.3 pounds of butterfat during the month of December. This cow is one of the most noted show cows in the Locke herd, having been a prize winner at all of the prominent livestock shows in recent years, and as an individual has always stood high in the estimation of Jersey breeders in this State. It is another illustration of the benefits derived from the tester and scales.

A correspondent of this paper writes: "On our way from Stockton to Modesto by auto we were impressed with the number of silos that were put up there the past season. We could count as many as 25 from the road, most of which were made of wood. E. Ustick of Modesto informs us that he had one erected last fall and expects to put up another this year. He found that when he quit feeding green alfalfa that his cows dropped in their milk flow from six to three cans. Since starting to feed silage they have picked up and are giving six cans again, even in the cold stormy weather which we have been having. Most of the silos here are filled with corn, though we find many that are filled with barley and vetch and some that were filled with sorghum."

SWINE.

Ordway Bros., of Petaluma, received 138 stock hogs from Tom Garner of Ukiah last week which were put in their fattening pens, to be later shipped to San Francisco.

Peters and Lamson of Holtville have 600 purebred Durocs on an 80 acre alfalfa farm in 10 fields of about 1¼ acres each. They are alternated in 10 other similar fields to let the alfalfa grow. Corn and tankage are bought to feed with the alfalfa.

G. D. Willoughby & Sons of Calexico have about 100 registered Duroc sows. They are working gradually into purebreds, having started with purebred boars on grade sows for market hogs. Their 900 head are kept scattered over 200 acres of alfalfa, barley and milo, which furnish practically all the feed.

A. J. McPherrin of Imperial has 120 fattening hogs and 100 milking Jerseys besides 100 young stock on 110 acres of alfalfa, barley, milo, sorghum, and Indian corn. The corns are largely made into silage, most of the rest is pastured off, according to his manager, Geo. V. Rude.

We have just received the catalog of the First Semi-Annual Sale of Registered Poland Chinas to be held by the Kings County Poland China Breeders' Ass'n at Hanford, February 5. This promises to be the largest auction sale of hogs ever held in this State and from the offering buyers should be able to find some of the best individuals of the breed in the West.

Breeders of Duroc-Jersey hogs in Arizona met January 12 and organized the Arizona State Duroc Jersey Breeders' Ass'n. The following officers were elected: President, A. S. Donau, Tucson; vice-president, I. deR. Miller, Phoenix; secretary, F. C. Mack, Tucson; treasurer, Dr. C. Howard Davis, Toltec; directors, W. E. L'Hame of Cochise; Professor G. W. Barnes of Tucson; Roy Guild of Rillito.

W. A. Young of Lodi reports the following sales of purebred Poland Chinas since the P. P. I. E.: J. A. Thomas, Gilroy, one boar; A. Ryann, Casa Grande, Ariz., one boar; L. White, Jackson, one boar; L. McCracken, Ripon, one boar; C. B. Bovard, Yerrington, Nevada, three bred sows; C. A. Kirkpatrick, Lancaster, three bred sows; W. Moore, Fallbrook, one sow and one boar; Theo. Beckman, Lodi, one boar; W. H. Holloways, Yerba Linda, bred sows; F. E. Sanguinetti, Yuma,

(Continued on page 146.)

Classified Advertisements.

MISCELLANEOUS.

SUDAN GRASS SEED for sale by the rower, direct to farmer at a saving of 60 per cent less than Seed dealer's prices! Choice seeds; none better. Send in your orders now while it lasts. Greatest forage crop known for dry or irrigated land. Better and finer hay than Timothy. Wm. P. Spalding, R. F. D., No. 1, Box 64, Los Molinos, Cal. 30c. lb. small lots; 50 lbs. and over at 25c, delivered.

SAVE MONEY ON YOUR PUMPING PLANT—We are reducing our stock of Gas Engines, Oil Engines, Centrifugal Pumps, Friction Clutch Pulleys, etc., and can name you very low prices indeed. Write us at once. Commercial Iron Works, 481-497 Fifth St., San Francisco, Cal.

MOGUL TRACTOR, 45 H. P.; used one season; fine condition; will demonstrate; have no use for it; will sell for half cost and give terms, or exchange for horses or mules. Drills, discs and other farm machinery for sale. Address W. H. Hord, 704 Market St., S. F.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

BARGAINS One new Deal (John Deere) 4 point, 41-inch tractor plow; 1 2-disc La Crosse orchard plow; 1-12 feet. Rival Disc harrow, 20-inch discs. J. E. Thomas, Gilroy, Cal.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds $3.00 delivered. Order with remittance, WM. J. SCHROTH CO., 112-B Market St., San Francisco.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

APPLES!—Buy direct from producer. Newtowns, 90c; Bulk pack, 4 and 4½ tiers, equal proportion. No 2 grade for cooking, 65c. Edwd. A. Hall, Watsonville, Cal.

GOPHERS AND MOLES KILLED CHEAPLY—Positive results obtained by new secret methods. Full details for 25c stamps. Box 353, Carson City, Nevada.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.

WANTED TO LEASE ALFALFA RANCH with some cows. I have 19 good cows and equipment. University trained man. Box 204, Pacific Rural Press.

ASK FOR SNOW'S GRAFTING WAX—If your grocer does not have it, send to D. A. Snow, R. 3, Box 255, San Jose, Cal.

BALED WHEAT HAY FOR SALE in carload lots. Write H. E. Van Hensen, Hollister, Cal.

TREES AND NURSERY STOCK.

WALNUT TREES — Late blight-resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California black root, as the California Black root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

TRIBBLE NURSERIES, ELK GROVE, CAL.—Grafted walnuts and grafted paper-shell pecans. Exclusive propagators of Tribble, Mayette, Kerr Parisienne, Glady and Improved Franquette. 19 other varieties. Fine stock of almonds, prunes, Bartlett pear on resistant roots, and other fruit trees and plants. New list ready.

CALIFORNIA GROWN SUDAN GRASS SEED—Absolutely free from Johnson Grass or other Weed seed. Plant all you can of it; for Broody Chicks and laying Hens or stock of any kind you can't beat it. 30 cents per lb. Write for prices on large lots. Lasher's Hatchery, Petaluma, Calif.

CLOVERDALE NURSERY CO., Cloverdale, Cal.—(Resistant Grape Vines exclusively)—Wine and Table grapes of all leading varieties grafted on resistant roots. Rooted resistant stock of all improved varieties for table and field grafting. Also cuttings of resistant stock.

CITRUS TREES—40,000 assorted—20c in tree row; 25c balled; subject to advance. All big, two-year-old stock. Choicest ever produced by anybody, anywhere, at any price. Lem A. Brunson, Santa Fe Springs Nursery. Office, 1120 Haas Building, Los Angeles, Cal.

1000 SACKS OF AMERICAN WONDER and High Top Burbank, clean seed Potatoes, from fields that produced 388 sacks to the acre, winning third prize in State Contest. Act quick as they will not last long. H. A. Hyde, Watsonville Nurseryman.

ORCHARD TREES, BERRY PLANTS, long on Gooseberries and Currants. To introduce my catalogue, I will send 1 doz. best bush and climbing roses for $1.50; 1 doz. different German Iris, Choice, for 75c. H. A. Hyde, Watsonville Nurseryman.

BUY PURE CALIFORNIA DESERT GROWN SUDAN GRASS SEED (and avoid Southern States Johnson Grass). Send $1.00 for sample 3-lb. package, postpaid; special price on larger quantities. Send for circular. Rich & L. Ranch, Lancaster, Calif.

ROYAL AND TILTON APRICOT AND SUGAR PRUNE Trees direct from Grower. Wholesale prices. Write L. Kendall, 151 S. Meredith Ave., Pasadena, Calif.

WALNUT TREES—San Jose Mayette, Barry Mammoth—on California Black Root, at lowest prices. San Jose Mayette, Barry Mammoth and Franquette Grafting Wood for sale. California Black Seedling Trees. Write for our low prices. Mammoth Walnut Nurseries, P. O. Box 597, Watsonville, Cal. Nurseries at 80 Tully Road, San Jose, and Watsonville, Cal.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

WALNUT TREES—Eureka and El Monte varieties a specialty; also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

EUREKA WALNUTS are the best grafted on native black roots. You'll be surprised at our prices. Write today—tomorrow never comes. Geyer Bros.' Walnut Nursery, 214 S. Almason St., Alhambra, Cal.

PAPER SHELL PECANS—Standard varieties—Success, Stewart, Frotcher, Delmas and Van Dieman. 7-8 feet, $2; per 100, $150. 5-6 feet, $1.50; per 100, $100. E. Fischer, San Gabriel, Cal.

RHUBARB PLANTS—Crimson Winter 1 year, per hundred, $2; 2 year clump, each 10c. Seed per pound, $3.50. Wagner's Giant, 1 year, per hundred, $3.50. Currier Bulb Co., Seabright, Cal.

SOUDAN GRASS SEED—Warranted free from Johnson grass and weed seeds. 30c per pound; 10 pounds for $2.75; 100 pounds for $25. I pay postage or freight. John Silbersack, San Martin, Cal.

FRANQUETTE AND MAYETTE grafted on California Black. Sizes 3 to 10 feet. Prices reasonable. Special discount on large orders. Sunset Nursery, 525 W. San Carlos St., San Jose, Cal.

FOR SALE OR EXCHANGE—1500 San Jose Mayette Grafted Walnuts. Six to ten feet. Price low or will exchange on light auto or good heavy team. Chas. Story, Rivera, Cal.

FOR SALE—Two and three-year-old Mission Olives, propagated from my own trees—no mistake about variety. Also Thompson Seedless Vines. W. A. Hayne, Box 461, Marysville.

WALNUT TREES—Grafted and Seedling. Also fine field-grown Ganter and Hannan Avocado trees. Write for prices. Magnolia Nursery, Whittier, Cal.

WAGNER'S CRIMSON GIANT WINTER RHUBARB—Subdivided plants. $15 per 1000; $2 per 100. G. E. Shelford, Healdsburg.

BARTLETT PEAR TREES—$10 per hundred. N. M. Cunningham, Red Bluff, Cal.

FOR SALE—Spineless Cactus Plants. Prices right. B. C. Engbert, Byron, Cal.

PRUNE TREES—12 cents. Walnuts, 30c. Cash Nurseries, Sebastopol, Cal.

SEED CORN—Select ears or shelled. C. W. Jenkins, Live Oak, Cal.

APPLES, PEACHES—10 cents. Gage Nursery, Corning, Cal.

WANTED.

WANTED—About sixty young men and women to enter the WESTERN NORMAL on January 1, 1916, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We save you time and money. For information address, WESTERN NORMAL, J. R. HUMPHRIES, Principal, Stockton, Cal., Box 704.

WANTED—Position as manager of large orchard, vineyard, dairy. Alfalfa and grain farming. By a man with many years of practical California experience. Reference. Room 336 Hotel Alpine, San Francisco.

WANTED PROFESSIONAL BUDDER to bud 10,000 seedling peach trees. Apply H. F. Pixley, Corte Madera, Marin county, Cal.

LAND FOR SALE.

FOR SALE—In order to prevent positive foreclosure, I will sacrifice a thousand acres of choice level farm land near Corcoran that in normal times would bring no less than $75,000 for $50,000, if an immediate sale is made. Must get at least $5,000 cash at once; the balance can be paid in annual installments of $5,000 or more. This positively is a rare opportunity to make a big profit on a very small investment just as soon as times improve. Know no reason why any farmer should not make future payments out of grain that could be raised thereon. Address E. F. Marek, General Delivery, Los Angeles.

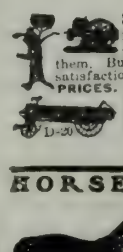
CALIFORNIA LAND—Money-making little farms, high class, low-priced properties in all counties. Call or write the oldest land office in California; we will save you 25 to 50 per cent. C. M. WOOSTER CO., 303 Phelan Building, S. F. Catalogue free.

LONG LEASE ON SHARES—Old established nursery. Wholesale and Retail. Good terms. Full particulars, write Tribble Nurseries, Lodi, Cal.

ORCHARD, ALFALFA, STOCK OR RICE RANCHES for sale or exchange. Alex. T. Gibson, P. O. Box 361, Chico, Cal.

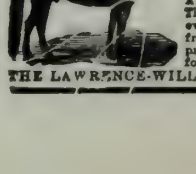
20 ACRES IN ALFALFA adjoining Kirkman Nursery, near State Highway. Fine pumping plant. S. H. Kunkle, owner, Madera, Cal.

WANTED GOOD FARM, or unimproved land from owner. H. L. Downing, 145 Palace Bldg., Minneapolis, Minn.



SEPARATORS, ENGINES, SPREADERS
200,000 customers testify that my designers and factories build quality into them. Built for long, hard, continuous users' satisfaction. **HIGHEST QUALITY—LOWEST PRICES.** About 1-3 to 1-2 less than you usually pay. Don't buy till you get my catalog of these and other farm and household goods free. A postal gets it. Low freight rates. WM GALLOWAY CO., BOX B WATERLOO, IA.

HORSE OWNERS! USE
GOMBAULT'S
CAUSTIC BALSAM.



A safe, speedy and positive cure. The safest, Best BLISTER ever used. Removes all bunches from Horses. Impossible to produce scar or blemish. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

RAISING HORSES FOR FARM AND MARKET.

(Continued from page 121.)

resent method of buying stallions as not given desirable results. The ity buyer's standard must be the tandard upon which market horses re sold; and no matter what the reeder himself may think is the roper horse for his own farm work, e should keep the kind the market emands.

Breeds.—There is no necessity for rgument about breeds. The best lood of any of the leading breeds f draft horses will give results. here are more Percherons in the ountry than all other pure draft reeds put together. Next in order ome the Belgian, Shire and Clydes- ale. It is not so much a question f what breed as it is a question of whether the individual animal is ood enough. There is a distinct ad- antage in the farmers in a com- nunity uniting on a single breed. his enables buyers to purchase in ar lots when desired and adds to the ossibility of buying matched pairs.

Having sound mares that are eavy enough, not less than 1600 ounds and better for weighing up to 800, the next important point is to row the colts right. Some think a olt will not be a tough enough orse unless he has to rough it when oung. This is a decided mistake. A draft colt will make half his ul- imate weight at a year old if given n opportunity to grow, and he hould be given this opoprtunity. his means a liberal feeding of grain n addition to all the hay and grass he will eat. Oats and bran half and half—or rolled barley where oats are ot available—make suitable grain ixture, improved by the addition of bit of oil meal. At three he should e broken and for the next two years lo his share of the farm work; and t five he should be ready for the ity. It costs little if any more to raise a colt than it does to raise a steer. Then why not on our Califor- nia farms raise the horses that do the work in our California cities?

LIVESTOCK DIRECTORY.

DAIRY CATTLE.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321 Petaluma, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

FRANK MEACHAM, Petaluma, California.—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Purebred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

REGISTERED JERSEY BULLS from register of merit cows. D. F. Conant, R. "B," Modesto.

HOLSTEIN-FREISIAN CATTLE and Berkshire Hogs. H. B. Goecken, Breeder, Goecken Heights, Livermore, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

BREEDERS OF A. R. O. Holstein Friesian cattle exclusively. Dirk Dairy Farm Lemoore.

CREAM CUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

PALENDALE HERD of Registered Holsteins. Young bulls for sale. J. A. Pelanda, Modesto, Cal.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls from tested cows for sale.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Son, Chino, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

BREEDER of Registered Holstein Cattle. Ernest Otto McClure, R. 2, Modesto, Cal.

BREEDER OF REGISTERED HOLSTEINS—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes. McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd. D. & H. Rowles, Modesto.

JERSEY BULL—8 months old. A bargain. O. J. Ames, Oakdale, Cal.

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GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

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BIG TYPE POLAND CHINAS—One to a carload. Any age, either sex. 600 on hand. They have plenty of size, extra good hams and shoulders, strong arched backs, great length, depth and thickness of body, with good looks as well. Many are sired by IOWA WONDER, a 1000-pounder in show condition. I believe his pigs are the best in California. Visitors say they are the best they have ever seen. He sires the kind that grow faster and larger, have more, better and stronger pigs, and are more practical and profitable—the kind that are highly satisfactory Extra special prices on account of being overstocked. I have hogs galore. Prices will surprise you. Satisfaction guaranteed. Write Geo. A. Smith, Corcoran, Cal.

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HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

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THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class, thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

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RANCHO RUBIUS HERD DUROCS—Won 1st under six months, Junior Champion, Reserve Grand Champion, Champion Sow bred by Exhibitor, 2nd Sow under 2 years, and two other premiums, all on four entries at P. P. I. E. A few service boars and weanling pigs for sale. Elmer Lamb, Ceres, Cal.

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BLATCHFORD'S PIG MEAL weans easily and safely; no trouble; no milk. Write for free folder, "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

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REGISTERED BERKSHIRES—For sale bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

POLAND-CHINAS — While the advertisement is short the hogs are long—of the big-boned type. C. A. Cooley, Durham, Cal.

REGISTERED DUROC-JERSEYS—Blue-ribbon stock. 8 gilts and one boar 9 months old. $20 each. H. E Tong, Route 2, Modesto.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville. Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H Croley Co., Inc 631-637 Brannan St San Francisco

CHESTER WHITES (O. I. C.'s)—Bred gilts, $30. Bred sows, $45. Weaned pigs, $10. Also a fine herd boar 20 months old. D. Bache, Hollister, Cal

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen A. Day, Box 1140, Sacramento.

REGISTERED DUROCS—Fall farrowing Choice boars and gilts. Crimson Wonder and Model strains. Felton & Hoyt, Hanford, Cal.

FOR SALE—Bargain—Registered O. I. C. Boar, 22 months, 350 lbs., or will take sheep. H. Witts, Route 3, Turlock

GLENVIEW POLAND-CHINAS—Baby Pigs from best families for sale. From $15 up. Chas. R. Hanna, R. 3, Riverside, Cal.

TWO REGISTERED HOLSTEIN BULLS old enough for service. Very light in color. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEIN BULLS — Serviceable age. From finest strains. Panama-Pacific Dairy. Sutter Creek, Cal.

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REGISTERED HAMPSHIRES—Winners at P. P. I. E. Stock of all ages. W. T. Gatton, Box 231, Gardena, Cal.

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REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

PURE-BRED BERKSHIRES—Stock of all ages. Brae Bourne Ranch, Route 3, Box 172, Santa Rosa, Cal.

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REGISTERED BERKSHIRES — Prize-winning stock. Sunnyside Stock Farm, Perkins, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderas Ranch, El Cajon, Cal. M. S. Allen, Manager.

REGISTERED BERKSHIRES—Big-boned. Cholera immune. Riccomi Bros., Mountain View.

REGISTERED BERKSHIRES—Weanling pigs, $10 each. G. A. Casey, R. 7, San Jose.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

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REGISTERED POLAND-CHINAS—Bred sows. Roy J. Turner, Trowbridge, Cal.

DUROC-JERSEYS—Registered boars and gilts. John Decker & Sons, Turlock.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

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REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Lakeport, Cal.

DUROC-JERSEYS—Write or call. R. R. Houston, Byron, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

SHEEP.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

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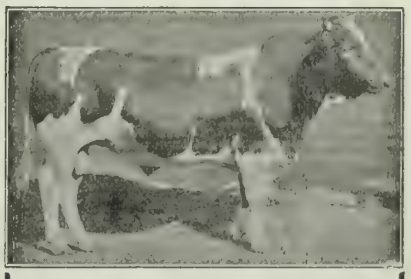
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HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

FOR SALE, SURLUS STOCK—2 dark grey Percheron Stallions, 3 and 5 years, respectively. Grand individuals. Price, $400 each and down. Three Shorthorn bulls, $150 each and down. All registered. Wm. Bond, Moury Station, near Newark.

ROSELAWN STOCK FARM—Registered Poland Chinas and Shorthorn cattle. Young stock, both sexes for sale. T. R. Gibson Estate, Woodland, Cal.



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The bull that combines the blood of the greatest producing families in Holstein history. He is an outstanding individual weighing 2200 at just three years of age. His dam RIVERSIDE SADIE DE KOL BURKE, is the heaviest milker that the breed has ever developed. She and six of her sisters have records above 30-lbs. butter in seven days.

A few sons of this sire are now available, some of which are soon ready for service.. Several are from half sisters to Aralia De Kol, 30-lbs. butter in seven days at 12½ years, 28090 lbs. milk and 1142 lbs. butter in one year. Prices reasonable.

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Zerolene is made from selected California petroleum—asphalt-base—under the unequalled refining facilities of the Standard Oil Company.

Next time you empty the crank case, refill with Zerolene.

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PEDIGREED HOLSTEIN BULL
$250.

I am now offering a very fine bull out of a high-testing dam, who was sired by King Pontiac Premier, one of the best sons of King of the Pontiacs, 165 A. R. O. daughters. Her present record is 21.09, made at four years old, but she can make around 25 lbs. with next calf. On the sire's side the bull has the blood of Pietertje Hengerveld Count De Kol, 99 A. R. O daughters; and dam Deutschland Creamelle, is out of Creamelle Vale, the former world's championship milk cow. This young bull is almost white in color and is ready for service.

Write or come and see him.
F. H. STENZEL,
San Lorenzo, Calif.

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Our herd is Cholera Immune, the only Immune Berkshire herd in the State.
Fine herd boars in use and they are second to none on the coast. Our sows are of equal merit.
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Descriptive catalog upon request.
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Veterinary Queries and Replies.

[Answered by Dr. H. B. Wintringham, Petaluma.]

Correspondents desiring a reply by mail should send money order for $1.00. No charge is made when questions are answered through this department.

CRUST ON HOOF.

To the Editor: I have a mare that got her foot cut with a scythe, just below the fetlock, when she was a small colt. It healed up and is well except that a hard crust formed where it was cut, just above the hoof. Can you tell me how I can cure it?—R. L. A., Turlock.

[Paint this crust with butter of antimony once a day until it disappears.]

MAY BE GLANDERS.

To the Editor: I have a driving mare that has a slight discharge of gray matter from her nostrils and blows considerably more than she should when hitched up. Can you give me a remedy for this condition?—P. W. S., Selma.

[Have this horse tested for glanders. If she does not react, give 5 grains potassium bichromate three times a day, dissolved in one ounce of water.]

SORE ON HOG.

To the Editor: About two weeks ago the hind leg of one of my sows became swollen and lame, then it broke and started to run and spread to her belly and broke out in three or four places. What can I do for her?—W. P. C., Middletown.

[This is necrobacillosis. Wash the affected parts with a 2 per cent solution of cresol twice a day until recovery.]

MAY BE TUBERCULOSIS.

To the Editor: I have a cow that will not freshen till July that is only giving one and a half quarts of milk to a milking. Last year she gave me two gallons to a milking. When she started to drop in her milk flow I fed her cocoanut meal, barley meal and bran in equal parts, but she did not increase in her milk yield. Then I started to feed her aflalfa meal and bran, but could not see any change. Could you tell me what is the matter?—P. C. B., Sonoma.

[Have this cow tested for tuberculosis.]

COW WILL NOT BREED.

To the Editor: I have a cow that lost her calf some time ago. She has come in heat three or four times since but does not seem to breed. What can I do with her?—F. J. D., Strathmore.

[Douch this cow with one gallon of warm water daily containing one dram potassium permanganate over a period of one week, then use two ounces cooking soda in one gallon of water for another week. If she does not get with calf after such treatment use a compressed yeast cake in one gallon of water daily for two weeks more. You must have patience in these cases.]

COW POX.

To the Editor: I have an old cow that had caked bag two years ago, owing to a careless milker. It afterwards broke underneath midway between the four teats and ran off for some time, accompanied by small breakings out on the side of the bag. The sore under the bag healed entirely, leaving a hard lump inside. Was not careful in drying her this fall and the lump seems still larger. The small eruptions have scabs on them yet. Can the condition be cured with a reasonable amount of treatment and what is the best treatment? Am milking six heifers who sometimes have a sort of a scurry on their bags, accompanied by small lumps under the skin, the trouble apparently disappearing after being greased for a time. What do you think this is?—C. L. E., Elk Grove.

[Give the old cow one dram calcium iodide twice a day for six weeks. The heifers were troubled with cow pox, a benign disease.]

WHAT CAUSES GARGET?

To the Editor: Will you tell us what causes garget?—F. T. B., Mountain View.

[Garget is an inflammation of the udder and may be either due to an infection or functional disorder. Its causes are so legion that the space allotted to the writer is inadequate for their enumeration. Potassium iodide is the drug par excellence in the condition known as garget, given in two dram doses two or three times a day, dissolved in water, over a period of from two to six weeks.]

SICK BOAR.

To the Editor: I have a boar that took sick about three months ago. His penis dragged on the ground for about a week and he tried to pass water all of the time. I was told he had worms so tried worm medicine without success. Now he is swollen underneath and cannot move. Could you advise me what to do for him?—J. L. R., Winton.

[This is paraphymosis and is an inflammation of the penis. It is probably too late to alleviate his trouble. Try applying hot compresses to the affected region and dram doses of sweet spirits of niter every two hours.]

WARBLES.

To the Editor: I have some heifers that have lumps under their skins, all over their backs, about the size of the end of a finger. They do not seem to change in size since I first noticed them last summer. What are they and what shall I do for them?—F. J. H., Fresno.

[These lumps contain the grubs of the fly Hypoderma Lineata, or Warble fly. They do no harm except when present in large numbers. They may be squeezed out with the hand or two or three drops of turpentine may be injected under the skin over them with a hypodermic syringe.]

MULE-FOOT HOGS.

To the Editor: What is the origin of the Mulefoot hog? Are they the product of natural selection, or artificial selection, or did they just grow that way from the very beginning?—Reader, Chico.

[The early history and ancestry of the Mulefoot hog is unknown, one theory being that it first came from Africa. You can secure further information of the breed by addressing C. G. Kreglow, Ada, Ohio, who is Secretary of the American Mulefoot Hog Record Association.—Eds.]

HORSES EAT WOOD.

To the Editor: Could you tell me what causes horses and mules to eat the wood on the fences and mangers? They have plenty of green feed, barley and salt.—H. T. D., Madera.

[This is at first caused from a depraved appetite and later becomes a habit. At first it is caused by a lack of mineral substance in the food. Give the following: Powdered nux vomica 1 oz, powdered iron sulphate 1 oz., powdered gentian 1 oz., powdered ginger 1 oz., powdered potassium nitrate 1 oz., powdered sodium bicarbonate 1 oz., powdered fenugreek 2 oz. Give one ounce of this mixture in the feed twice a day.]

NOTICE!



Wishing to devote my whole time to other business, I have decided to sell out my

Shire Stallions at Cost

in order to dispose of them quickly. Included are the stallions which have been at the head of my stud for the last two seasons. All are sound and good stock horses.

I can also spare one pair of "in foal" mares and three stallion foals. If you are in the market, do not miss this opportunity.

Henry Wheatley : Napa, Cal.

Registered Jacks



Range raised; Guaranteed satisfactory breeders. Field Jacks a specialty. Registered Shire Colts. Will trade for young mules, horses or land.

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Hanford, Calif.

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Breeders of Purebred
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We can fill orders for mature stock and weanling pigs of both sexes This is the largest herd of TAMWORTHS in the State. Our stock is sure to please.
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SWINELAND FARM,
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Registered Duroc Jersey
Iowa Chief and Crimson Wonder Blood.
BIG BONED. BIG LITTER. BIG TYPE.
We have now 40 head of choice boars, open or bred gilts and weanling pigs for sale.
Special attention given mail orders.
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GET STARTED RIGHT
Registered Duroc Jerseys.
$10 each PIGS $10 each
are money makers.
What's the use of raising "Scrub Hogs" when purebreds may be had at this price? Also grow faster. Send today.
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Blake, McFall & Co., Portland, Oregon

Farm Feeding Problems.

[Answered by Prof. F. W. Wo ll, University Farm, Davis.]

HOW TO BALANCE A RATION.

To the Editor: Will you kindly ll me how to balance a ration when ou have the digestible nutrients in ch one hundred pounds of differ- t feeds? Kindly give me an ex- mple.—H. I. M., Modesto.

[If the correspondent has some me to spare for studying, it ould be a good plan for him to ke the correspondence course in iry husbandry, which the Univer- ty offers, free of charge, to resi- ents of the State. A letter ad- essed to Professor W. G. Hummel, udd Hall, Berkeley, California, will ring the necessary information con- rning this and other correspond- nce courses in agriculture offered the University. A collection of me of the standard books on feed- g farm animals will also be help- l, both along this and related lines animal husbandry.

Putting the mater as briefly as ssible, we may say that scientific vestigations have established the ct that a good dairy cow will re- uire 2 to 2.5 pounds of digestible otein, and 12 to 15 pounds of di- stible carbohydrates and fat in her ily ration, the nutritive ratio of e ration (i. e., the relation be- ween the two groups of components entioned) ranging from 1:5-7; in ther words, a balanced ration would ntain 5 to 7 times as much digesti- le carbohydrates and fat (starchy mponents) as digestible protein flesh-forming substances). If the w is fed alfalfa only, she will re- ive the following amounts of di- stible components in her ration, ssuming that she eats about 30 unds per day:

Feed	Digestible Protein	Carbh & fat	Nutritive Ratio
0 lbs. alfalfa hay....	3.1	11.5	1:3.7

These figures are obtained from tandard tables. of composition of eeding stuffs, which show that 100 bs. of alfalfa hay contain, on the verage, 10.4 lbs. of digestible pro- ein and 38.2 lbs. of digestible carbo- ydrates and fat; hence 1 lb. con- ains .104 lb. and .382 lb., respec- ively, and 30 lbs. contain 3.1 and 1.5 lbs. The nutritive ratio is btained by dividing 11.5 by 3.1, hich gives 3.7, showing that the ra- ion contains 3.7 as much digestible arbohydrates and fat as digestible rotein.

A cow fed alfalfa hay only, there- ore, evidently receives too much rotein for best results, unless al- alfa is very cheap or the cow is a oor producer; in either case it will ot pay to feed her more expensive eeds. But from a physiological oint of view, the ration is too high n protein and has a too narrow utritive ratio. In order to improve t, feeds of a low-protein character ust be added to take the place of ome of the alfalfa hay. Feeds of his character which are available in his State are, among rough feeds: rain hay, cereal straw, Indian corn r sorghum stalks, Indian corn or orghum silage, etc.; among the oncentrates, barley, oats, Indian orn, sorghum varieties, dried plain r molasses beet pulp, cocoanut meal, tc. If corn silage is available the ation may be composed as follows:

Feed	Digestible Protein	Carbh & fat	Nutritive Ratio
0 bs. alfalfa hay	2.1	7.6	
0 lbs. corn silage.....	.4	4.7	
	2.5	12.3	1:4.9

Since both these feeds are bulky, containing considerable proportions of indigestible matter, and since heavy producers cannot do their best unless a fair portion of the ration is given in the form of easily digestible concentrates, the preceding ration may be improved by replacing some of the alfalfa with rolled barley, as shown below:

Feed	Digestible Protein	Carbh & fat	Nutritive Ratio
15 lbs. alfalfa hay	1.6	5.7	
30 lbs. silage	.4	4.7	
5 lbs. barley	.5	3.6	
	2.5	14.0	1:5.6

A great variety of different rations may be made up from the rough feeds and the grain, mill feeds and other concentrates available to our farmers, and in the selection of these, the relative cost of feeding stuffs must be considered as well as the character of the nutrients supplied in the rations. The largest production secured at a moderately low feed cost should be the aim to be sought by the practical dairy farmer, and not a production obtained at the cheapest possible feed cost, which may or may not give fair returns "at the pail." A goat living on circus posters and weeds picked up along the roadside is a very economical milk producer, but her production will not go far toward feeding and clothing the family. Even milch goats have to be fed liberally, and must receive grain too, if they are to make a satisfactory production.]

DRY-SALT CURED HAMS.

Dry-salted hams and picnics should be closely trimmed, and then sprinkled with a solution of sugar and saltpeter before being treated to the salt, explained Wm. Constantine during his interesting meat-cutting demonstration at O. A. C. The salt should be thoroughly rubbed on and the meat stacked in a suitable receptacle, where it should remain for two or three days—less time in warm, murky weather—and then be taken out, new salt well rubbed on, and repacked in a different position. This process should be renewed for a period of about sixty days, gradually lengthening the intervals of three days t ofive or six, and so on to the end of the period. The pieces are then taken from the salt and well-smoked. If well prepared the meat will keep well and also have a tendency to retain its best flavor and to brown nicely in frying.

GETTING COWS WITH CALF.

To the Editor: I notice in Press where someone is having trouble getting cows with calf. The following has never failed for me in this connection. A few hours before breeding take one small cake of yeast from a five-cent package. Soak in pint of lukewarm water, then add another pint of water and mix well. First inject a quart of warm water, washing the vagina thoroughly, then inject yeast solution and let her to the male in an hour.—J. M. Shank, Reedley.

[This remedy has given good results in the condition mentioned and is worth trying. The writer has published various lines of treatment in these columns from time to time and all are used with about the same success.—Dr. H. B. W.]

R. L. Clark of San Joaquin county has sold his herd of Holstein cows and is getting a good start in registered Percheron horses. He has four very fine Percheron mares and a young four-year-old stallion that weighs 2,000 pounds in breeding condition. State Veterinarian Keans pronounced him a perfect horse in every way. He is native bred out of imported dam and sired by an imported sire.

Those Cornstalks
Might have been Succulent Silage

Do stalks beat back and forth in *your* cornfield—gaunt, silent reminders of what *might* have been—or are you feeding them now as rich, juicy, nourishing silage?

It is during these cold, wet winter months that your feed bills seem to continually grow larger and your cream checks smaller. It is now that you realize most *your* need for an

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This famous silo has made millions for American farmers by giving them the best and cheapest feed they have ever used. Its sixty thousand owners are the men who *now* have plenty of rich, succulent feed—the men whose cream checks are largest and whose herd is sleekest—the *successful* men.

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We have several splendid grandsons of this now famous cow which we can deliver to you at prices which will suit the pocketbooks of every dairyman wishing to improve the quality of his herd, whether it be a grade or pure-bred herd. These bulls are sired by our herd bull, Prince Alcartra Korndyke and out of A. R. O. cows, and are the only living grandsons of a cow having a record of over 30,000 pounds of milk in a year. Such an opportunity for increasing production has never been offered DAIRYMEN AND BREEDERS in California, price and quality considered. Buy one of these bulls and solve your low production problem. Write

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DR. J. A. CRAWSHAW, HANFORD, KINGS COUNTY, CAL.

Poultry Questions Answered.

[By Geo. H. Croley, President Federated Poultry Association of California.]

WHAT IS HOGANIZING?

To the Editor: Please explain or state where I can secure this information: What is Hoganizing, and of what special value is it to a flock of hens or their owner?—B. M. P., Raisin City.

[To Hoganize a fowl means to judge it for utility qualifications, viz.: ability to produce eggs, to lay on flesh, or to yield both eggs and flesh. This method of judging is taught by Walter Hogan in a copyrighted book he has written, entitled, "The Call of the Hen." It is not claimed that this method is as yet absolutely perfected, but it proves true in nearly all cases. It not only teaches how to determine the egg-laying qualities of the hen, but also how to rate the male bird as a breeder of laying pullets or of meat-producing progeny. This judging of the male bird is very important for the reason that when animals are bred to an extreme type there is an ever-increasing tendency to reaction and the male seems to be the avenue that Nature selects for this reversion to primitive conditions in physical qualities.

The following endorsement of the Hogan method is by the American School of Poultry Husbandry: "Some three years ago Mr. Hogan sent us three males, all Single Comb White Leghorns; one was of his 280-egg type, selected according to his system, another was of the 250-egg type, and the third was of a 70 or 80 egg type. He also sent us two pens of hens of his own selection and breeding. We trapnested all the hens, and bred from all three males. The results in every case have borne out Mr. Hogan's claims and the truthfulness of his methods of selection and breeding. We have also tested the hens in the egg-laying contests; taken measurements and made tests and judged their capacity for laying as per his system, 'The Call of the Hen.' The results so nearly tally with the system in practically every case that we feel that this is a valuable method of selection and breeding, which should be in the hands of every one who attempts to raise poultry."

"The Call of the Hen" may be had from several sources and can be supplied by the Pacific Rural Press. The price is $2 postpaid.]

BRED BACK HENS DO NOT LAY.

To the Editor: I have some pure-bred White Plymouth Rocks, late fall hatch, that have not started to lay yet, although over a year old. They look healthy and eat well. The feathers under the vent are stained from their droppings. What is the cause and remedy?—C. L. M., Manzanar.

[The staining of the plumage below the vent no doubt is due to some disturbance of the digestion, or to bowel trouble caused by some laxative food, and while in this case it may be one reason for poor laying, it probably has little or nothing to do with the lack of eggs. It is almost certain that these fowls have "bred back" to the egg production capacity of their wild progenitors.

As my son bred nine Buff Orpingtons hatched Oct. 1, 1914, that have done the same, it may be instructive to relate the circumstances that led up to this result. A friend had a 20-month-old cock of large size, beautiful color, and unusual vigor, for which he paid $25 as a very young cockerel. Having bred a large number of chicks from this bird, he wanted to trade him for two of my son's hens and a few days later he brought the cock to our house and made the exchange. On my arrival home that evening, my son said, "Dad, that cock is one of the finest colored birds I have seen and he is good looking generally, but according to the Hogan test he is worth less than two cents. However, I am going to breed him to my two best hens until I get a few eggs to set first part of September as an experiment."

He set two hens and after culling out three or four cockerels, there remained six cockerels and nine most beautifully colored pullets. The cockerels had every indication of being breeders of heavy laying pullets and were sold, but the pullets were worth less than nothing. One has gone into stew and the balance will follow. While no exact record has been kept it is giving them the benefit of the doubt to say that those birds, now nearly 16 months old, have not averaged eight eggs each in their entire laying period of, we will say, nine or ten months.

This illustrates how important it is to head the breeding pen with a male bird that is from a heavy laying mother, for that is what influences more than anything else the production of heavy laying pullets.]

POULTRY NOTES.

[By Geo. H. Croley.]

A peculiar condition of the turkey trade, during the recent holidays, was noted. While the receipts were unusually large, the offerings from the recognized turkey raising districts were apparently less than in former years, while many new locations supplied small or moderate sized shipments which in the aggregate amounted to a very great part of the delivery of turkeys to the San Francisco market.

After the close of the Exposition, it was anticipated that the unusual demand for squabs would rapidly shrink. Whether it is due to the natural falling off of supply at this time of the year or to the increased appetite of the local people for juicy squab, the fact remains that there seems to be as good a demand for extra choice stock as formerly.

As an argument in favor of raising heavy hens and the delivery of them in better condition, a writer in the Country Gentleman estimates that the addition of only one and one-quarter pounds per fowl to those produced in the United States would amount to a gain in weight of 1,125,000,000 pounds and a value of $225,000,000.

The University of Missouri has issued a circular regarding the poultry mite, in which it is stated that sunshine is one of the best remedies in an attempt to destroy them. This is another endorsement of the open front poultry house that permits the sunshine to penetrate practically every part of the house.

The third annual show of the Nevada State Poultry Ass'n was held at Reno, Jan. 20-23. Included among the educational or utility features of the exhibition, was an egg-contest for which cash prizes and ribbons were provided for first, second, third, and fourth prizes. While Reno is not in this State, it is so near the line that it is theoretically a California show. A California judge placed the awards, and exhibitors and visitors from this side of the line greatly assisted to make this show a success.

LIVE STOCK NOTES.

(Continued from page 142.)

one boar; W. D. Merril, Rio Bravo, one boar; C. R. Williams, Suisun, one boar; Chas. Williams, Concord, one boar.

BEEF CATTLE.

H. L. Murphy was a visitor to this office early in the week and informs us that he will soon leave on another trip east for Shorthorn and Hereford bulls. He already has a nice lot at his ranch near Perkins which he brought out some time ago and which he is offering for sale. He also brought out a nice lot of female Shorthorns which he will use in establishing what he hopes to be one of the finest herds of Shorthorns in the State.

SHEEP.

A report from Nevada states that over 90,000 head of sheep are grazing in Nye county, most of which are located in Hot Creek and Stone Cabin valleys.

A report from Klamath Falls, Oregon, says that 2,000 lambs were shipped from there by O. B. McKentree the middle of this month which had been fed on alfalfa. The report says that farmers got $15 a ton for their alfalfa by feeding it out.

A consul report says: "The fourth wool sale for this season in New Zealand came on in Auckland November 25, at which 9,318 bales were offered against 12,290 bales for the 1914 sale. The prices paid were greatly in advance of those ruling at the 1914 sale.

Woolmen in attendance at the National Wool Growers' Association convention at Salt Lake last week subscribed $6,000 in twenty minutes to maintain a lobby at Washington against the 640-acre Homestead Bill. Officers of the association were elected as follows: F. J. Hagenbarth, Salt Lake City, president; A. J. Knollin, Chicago, eastern vice-president; M. I. Flowers, Flagstaff, Ariz., western vice-president; S. W. McClure, Salt Lake City, secretary; F. D. Miracle, Helena, Mont., treasurer.

HORSES.

A horse buyer from Texas is located at Fresno who is said to be purchasing about 100 head a month for shipment to Texas. The account does not say whether these are for war purposes or not.



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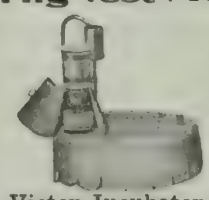
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POULTRY DEPARTMENT, HOPLAND, CALIF.
Best Equipped Poultry Farm in California.. Sanitary conditions perfect.
EGGS FOR HATCHING AND BABY CHICKS.
Breeding Pens now mated with large-sized, healthy matured breeding birds. All open-air housed, thus promoting strong sturdy chicks.
STANDARD-BRED SINGLE-COMB WHITE LEGHORNS.
Hatching Eggs, $1.50 per setting.....$5.00 per 100
Baby Chicks, Jan. and Feb. delivery ..... 12.00 " 100
" " March " ..... 10.50 " 100
" " April " ..... 10.00 " 100
WHITE PLYMOUTH ROCKS.
Hatching Eggs, $2.00 per setting.....$ 7.00 per 100
Baby Chicks, 20c each ..... 15.00 " 100
In the Utility Class at the P. P. I. E. Poultry Show our Leghorns received 4 awards, and on Eggs 1st and 2nd.
Our White Plymouth Rocks received 7 awards, and on Eggs 1st and 3rd.
BOOK ORDERS NOW TO MAKE SURE OF DELIVERY.
Terms—10% deposit with order, balance before shipment.

Farm Poultry for Profit.

[Written for Pacific Rural Press by Susan Ewaysgood, Pomona.]

RAISING GEESE.

Geese and ducks ought to be the vorite stock for all the young lks on the farm to invest in. They e so easy to raise and can be rned into money so quickly that e can scarcely think the time has me to sell.

Of course this does not mean that her geese or ducks can be raised thout work, or that they will stand y amount of neglect. On the con- ary they require good feed, plenty it and good care, but they pay for big and they are interesting from art to finish.

Hatching.—To begin with geese, is best to hatch the eggs either th geese or good reliable hens. A od plan is to set one or more ese and several good hens at the me time, then later test out the gs and relieve those hens that do t seem able to stand the strain, r it requires a good, hardy hen to tch geese eggs out. As the time r hatching draws near, give as any of the eggs as possible to the ese and watch the hens very close- as they may destroy the goslings nen they see what sort of family ey have brought forth.

Raising.—The goslings, when first tched, are very tender and the st chill, if it does not kill, might most as well, for the gosling that ts chilled rarely ever makes a good owth, if it lives. So as fast as ey hatch take them away from ose or hen and wrap in flan- l until you have several, when ey will do with a good nest of fine t straw under them and a warm ver. Make it close or they will awl out. After all are out just de- le how you are going to riase em. If with the goose, see that e is fed and watered well after r long vigil and allowed some ex- cise, then put her in a good nest th a fence around so that you can ntrol her for a few days, as the slings must not be left to roam at st. I prefer raising them by hand, ey are such a little trouble and ch good feeders that it delights my art to watch them.

Fireless brooders make fine places raise goslings in. Make a good st of straw, leaving no corners for em to get into. If there are any, l up with gunny sacks or other uff and just have a round nest for em. Have a good warm cover at st and lighten it as they grow. Do t feed for thirty-six hours after the tch is off and then not a great al. Just a little rolled oats and ead crumbs moistened in milk and little coarse sand in it, and a dish water they can reach in up to eir eyes but no further.

Feeding.—Feed rolled oats and ead crumbs about three days, then adually mix in one part of bran d one of cornmeal. After the first ek you can feed a mash of two rts bran, one part shorts or mid- ings, one part corn meal, one part eat scraps and always a little sand. ow this is supposing you are rais- g them without pasture; if you ve a clover or alfalfa patch, when e goslings are ten days old you n turn them out and just feed ce a day and see that they have a od dry bed at night and that is l the expense they will be to you. A good dry bed and keeping them out of water will save you many goslings, and the first few days the drinking water must have the chill taken off, for cold water gives them cramps.

Geese on range are as near self-supporting as anything I know of, and after they are grown they will stand about as much abuse, if there is any profit in abusing things, but while young they must be taken care of. If you don't want to turn them out on range, feed them lawn clippings or vegetables, chopped alfalfa or anything you happen to have, but don't change about too much as they are a little doubtful of changes in the feed. Geese are not strictly vegetarians, but they do not require so much animal food as either chickens or ducks.

USE CARE IN BUYING FOWLS.

Some time ago I cautioned readers of the Press not to get excited about the "Tom Barron" stock of Leghorns, that were winning at eastern egg contests, but it appears the caution was not heeded by one reader who lives in Idaho, Mr. J. L. Borden, who writes me that seeing the Tom Barron stock of heavy laying Leghorns advertised in an old reliable paper, the Rural New Yorker, he sent a money order for several hens, cockerels and cocks. As the price was advertised he did not have any correspondence concerning them, but took the advertisement to mean what it said, "hens that were heavy layers and large size."

When the stock came, they were found to be small, in fact very small, hens weighing only three pounds and cockerels three and a half pounds. One was knock-kneed, another was a worse cripple than that and all had scaly-leg and were lousy.

Instead of taking the matter up with the advertiser, Mr. Borden wrote to the Rural New Yorker, because they claim to guarantee their advertisers.

But in this case they were not true to their words, and after much writing back and forth Mr. Borden shipped the birds to the office of the Rural New Yorker in order that they might judge who was telling the truth in the matter.

John J. Dillon, writing for the office, became very indignant over this, telling Mr. Borden, that he evidently expected show birds, for the price paid, etc.

Now Mr. Borden contends that this was never thought of because Barron stock was not advertised as "show birds," but strictly "utility birds," and that was what he wanted, not knock-kneed, scaly-legged stock. Mr. Dillon further says, "scaly-leg is nothing, it is easily cured by poultry men." Evidently the gentleman never tried to cure it or he would not think it was quite so easy.

I do not mean to say that all of the Barron strain of Leghorns are like the birds sent to Mr. Borden; the breeder who sent out such stock as these and the newspaper that fails to make good its promise of protection are the ones I am after. Other breeders who advertise in that journal may, and doubtless do, breed this strain of Leghorns so that they are of large size that are heavy layers, just as is done with a number of good strains. The moral I wish to point is this: Don't run away with the notion that because the fowls of a certain strain have won great honors at some distant contest that all birds of that strain are anywhere near as good. Be just as careful in buying them as you would if they were not of a noted and widely advertised strain.

Melone and Perry of Stockton have completed the shipment of 17,000 sacks of barley to Europe.

Poultry Breeders Directory

RHODE ISLAND RED ANNOUNCEMENT.—Remember that February chicks are what you want for early high-priced broilers, and R. I. Reds are what we recommend for February. The pullets make fine winter layers. We will have lots of them, but order early, as the demand for our sturdy little youngsters is heavy. We are booking orders now for delivery any time to suit you. Write now, the earlier the better. Free circular. Campbell Poultry Ranch, Campbell, Calif.

WE OFFER 10,000 R. I. RED CHICKS during Feb'y at $12.50 per 100. Lots of 1000 or more at $12. Also 4500 Barred Rock chicks at same price. 8000 White Leghorn chicks at $10 per 100, or $90 per 1000. All of these are pure-bred high-class stock. These prices are special to secure early orders. Write us your wants today. Free 65-page catalog. Pioneer Hatchery Co., 620 S. Spring St., Los Angeles, Cal.

ROOFDEN CHICKS are hatching every week. When do you want yours? White Leghorns that are worth while, by hundred or thousand. Black Minorcas, beauties, great layers of big eggs, and a hardy strain. Rhode Island Reds, the breed for meat and winter eggs. We can supply you with prices that are right. Ask us. Circular free. Roofden Poultry Ranch and Hatchery, Campbell, Cal.

BABY CHICKS—All sturdy youngsters from good stock and hatched right. Rhode Island Reds. Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

WELL HATCHED AND STRONG day-old chicks from healthy vigorous breeders. White and Brown Leghorns per 100 February, $11, March $10, April $9. Reduction in quantities. Let us send you our announcement. San Jose Hatchery, 373 Meridian Road, San Jose, Cal. **Chicks well hatched are half-raised.**

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. Lay most when prices highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for heavy laying. Eggs, chicks, stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

WHITE PLUMAGE POULTRY FARM and Hatchery. Sells day-old chicks from healthy, vigorous breeders White Leghorns at $10 per 100, $90 per 1000. Barred Rocks and Rhode Island Reds at $15 per 100. We sell the Victor Incubator and Brooder. Circulars free. H. A. Schlotthauer, Exeter, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 398. Los Gatos, Cal.

MODEL POULTRY FARM—White Leghorn Specialists We are now booking orders for Hatching Eggs, Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired **Heavy Winter Layers.** W. C. Smith, Prop., Corning Cal.

PENN'S QUALITY BARRED PLYMOUTH ROCKS—At the World's Poultry Exhibition, San Francisco, our **Western Bred** Rocks ranked among the best in the world, both in untility and exhibition points. Catalogue free. Breeding stock and eggs for sale. Golden Rule Poultry Farm, St. Helena, Cal.

ALL KINDS OF BREEDING and laying hens, roosters and pullets. Petaluma incubators, new annd used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minorcas, Buff, White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards. 2550 San Pablo Ave., Oakland, Cal. **Closed Sundays.**

THE SANTA CLARA VALLEY HATCHERY can supply you with many different varieties of chicks. We stand by the chick and the chick speaks for us. Have four second-hand Jubilee Incubators for sale, 500 egg capacity. 500 growing White Leghorn chicks for sale now. Jos. A. Bihn, San Jose, Cal., Route 6.

540 EGG "PIONEER INCUBATOR"—$45 freight prepaid, or $46 on terms of $15 down, and balance in three payments of 30, 60 and 90 days. We ship for your approval before you pay a cent. Free, 32-page catalog. Write today. Pioneer Hatchery, 620 S. Spring, Los Angeles, Cal.

WHITE PLYMOUTH ROCKS—If you are interested in high class stock, and want to buy as good as there are anywhere, write Mahajo Farm, P. O. Box 597, Sacramento, Cal., for catalogue Chicks. Eggs or Breeding Stock. Awarded all first prizes at California State Show, 1916.

PULLETS: RHODE ISLAND REDS—75c to 1 50. Baby chicks, $14, hatched to order. Leonard Ryan, El Cajon.

BUFF ORPINGTONS—Utility winners Exposition. Runner Ducks, Eggs, Stock. Glendale, Fleming Ave., San Jose, Cal.

BUFF ORPINGTONS, BUFF LEGHORNS, BOURBON RED TURKEYS, BUFF DUCKS—Winners at Riverside, Pasadena, Los Angeles and San Francisco. Breeding stock. Hatching eggs. Baby stock. Free illustrated booklet. The Ferris Ranch, R. 2, 144D, Pomona, Cal.

WHITE AND BROWN LEGHORNS—If you want the best and are really interested in the highest class of stock write Mahajo Farm, P. O. Box 597, Sacramento, Cal., for catalogue. Chicks, Eggs, Breeding Stock. Awarded all first prizes at California State Show, 1916.

WHITE LEGHORNS—RHODE ISLAND REDS—Trapnested and Hoganized. Breeding from not less than 200 egg birds. Booking orders now. Hatching Jan. 25th-June. Monta Vista Poultry Farm, Z. W. Wright & Son, Ontario, Cal.

BABY CHICKS—White Leghorns, Black Minorcas. We guarantee safe arrival and full count. Strong, vigorous chicks. 1916 catalogue contains instructions on care of baby chicks. Free Lasher's Hatchery, Petaluma, Cal.

INCUBATORS AT MANUFACTURERS' PRICES—To assist the poultry industry, we are making this concession. Write the GEO. H. CROLEY CO., INC., 631-637 Brannan St., San Francisco, for particulars.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

BARRED ROCK COCKERELS—$2.50 each. Am booking orders for Rhode Island Red and Barred Rock chicks for February, 15c each. G. L. Hawley, Madera, Cal.

WHITE ROCK BABY CHICKS from good winter layers. Booking orders now. Early hatched chicks make early Fall layers. Few Hoganized cocks for sale. Mrs. J. B. Tupper, Ceres, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorca, White Leghorn stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

WHITE LEGHORNS—Hoganized. Bred to lay. Booking orders now for hatching eggs. $6 per 100, $50 per 1000. No chix. R. H. Dickinson, Los Gatos, Cal.

SILVER SPANGLED HAMBURG—White and Silver-Laced Wyandotte cockerels and eggs; Silver-laced Wyandotte hens. Tribble Nurseries, Elk Grove, Cal.

WHITE ORPINGTONS AND BUTTERCUPS—Hoganized and Tested—220 egg strain breeders. Chicks and eggs for sale. M. S. Woodhams, San Mateo, Cal.

BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trap-nested stock. Fairmead Poultry Farm, Fairmead, Cal.

ORPINGTONS: BUFF AND WHITE—Black Minorcas and Carneaux pigeons. Cockerels ready for service. Susan Swaysgood R. 2, Pomona, Cal.

WHITE LEGHORN BABY CHICKS that are hatched right, from good stock. Order now for spring delivery. Mrs. G. Logan, Morgan Hill, Cal.

HATCHING EGGS from Hoganized S. C. W. Leghorn two-year-old hens, $1 per setting, $5 per 100. Allendorf Egg Ranch, Kerman, Cal.

EAST SACRAMENTO HATCHERY—Capacity 16,000. Special low price for large lots of chicks. Box 1205, M St. Road, Sacramento, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and cockerels. B. C. Quessenberry, R. 4, Lodi, Cal

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

RHODE ISLAND RED BABY CHICKS and Eggs. Heavy laying strain. Send for circular. Rosedale Ranch, R. 1, Hayward, Cal.

TRAP-NESTED LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue W. G. Suits, 378 Bandini Ave., Riverside, Cal.

BLACK MINORCA, R. I. Red, Buff Orpington Cockerels. Eggs for hatching. Mrs. R. A. Holdridge, P. O. Box 282 Dixon, Cal.

TRAPNESTED LEGHORNS—White and Buff Stock. Eggs, chickens. Arthur R. Schroeder, Box 179R, Mountain View, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

S. C. RHODE ISLAND REDS—Hatching eggs, Baby chicks and cockerels. Mrs V. P. Hewitt, Dixon, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

HARES AND RABBITS.

LEADING RABBITRY IN AMERICA—Flemish Giants and New Zealands. Cut your living expenses. Catalogue free. Empire Rabbitry, Empire, Cal.

BELGIAN HARES—Young stock for sale. Hurd Bros. St. Helena, Cal.

TURKEYS, DUCKS AND GEESE.

BOURBON RED TURKEYS and eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914. Just as fine this year. A. E. Balmer, Alhambra Valley, Martinez, Cal.

WHITE PEKIN DUCKS—Heavy layers, heavy table-fowls, rapid growers. Eggs, $1.00 per dozen; $5.00 per hundred. Baby ducks, $18.00 per hundred. **PEKIN DUCK FARM, Santa Cruz, Cal**

MAMMOTH BRONZE TURKEYS—THE BEST IN THE WEST—Extra special prices. Further information cheerfully given. Write now to secure best birds. Geo. A. Smith, Corcoran, Cal.

WANTED FOR COMMERCIAL HATCHERY—Bronze Turkey eggs, Pekin duck eggs and goose eggs. No fancy prices. Address Stag's Leap Ranch, Yountville, Cal.

HART'S BRONZE TURKEYS—Vigorous young stock. Also large yearling hens, $5 each. Eggs in season. Circulars free. Albert M. Hart Clements, Cal.

SEVEN YOUNG TURKEY HENS, One Gobber—Mammoth Bronze selected stock, $25 f. o. b. for lot. S. C. Reed. Acampo, Cal.

THOROUGHBREDS—White Holland Turkeys, White African Guineas for breeding. T. M. Calvert, McFarland, Cal.

FOR SALE—One pen of China Pheasants, one male and five females. L. R. McCoy, R. I, Box 205 Stockton, Cal.

The Home Circle Page of the Pacific Rural Press

MRS. BEST'S BULLETIN.

My dear Friends: If you happen to be downtown and see a woman stop "dead in her tracks" before a show window it is a sign she is giving thoughtful consideration to the new styles for spring. Sometimes the sidewalks are impassable for women stopping so to contemplate the modes. This is more and more the case as one store after another bursts into attention with its blossoming windows. And this year the displays are especially compelling.

A gentleman member of the Home Circle family describes the effect of the displays in his own virile manner. He says they "slam you in the eye."

In these times, instead of being jumbled as full of new garments as they can hold, each window is given over to three or four costumes only. Each costume has exclusive use of all the space that the eye can conveniently cover. Thereby each costume is distinctly presented. The principle is the same as the "close-ups" in a motion picture. And moreover the window looks like a throne, not a pit; and the "dummies" in it are paraded with the dignity of queens, and not in the confusion of a mob. Truly the new window dressing believes in the direct and simple appeal.

New sport costumes, more appropriate to this climate than the leather ones, are now being shown. Among them are some that pay deference to the vogue of leather by trimming the collars, cuffs and pockets with that material. Which is probably enough.

In the new costumes for general purposes I notice both princess and two-piece dresses, both fitted coats and box coats, flaring cuffs and deep close fitting cuffs, skirts with both the pannier effect and without; both sleeve dresses and jumper dresses. The side belt is very strongly in favor on all fitted coats. Effective use is made of the buttons, which are very few and applied as pairs.

In the cheaper ready-made spring garments, the general fashion is carefully modified. This is always so in popular-priced garments, only the ultra-fashionable few being depended upon to follow style to its most unreasonable limit. The manufacturers take care not to trifle too much with the common taste, and in the main produce for it a rather sensible and nifty garment. This year I see many of the coat suits in a small and neat black and white check, and following in a general way the cut of the hour.

By the way, I dreaded that it would come—the imitation leather hat. My own taste is against wearing imitations of any material, but the imitation leather I have seen is palpably oil cloth. The imitation is awful. It is awfully cheap and cheaply awful. Don't wear it.

Yours imploringly,

Rosabella Best.

TEACHING MOTHERHOOD.

It has come at last—a college course in motherhood. It is to be at the University of Chicago, with Dr. Marie Mover responsible for the innovation. The lectures will deal with the care of health of girls during their years of growth, their preparation for normal motherhood, care of health while approaching and after motherhood, and care of the infant child.

AN EASILY MADE "BUNGALOW CAKE."

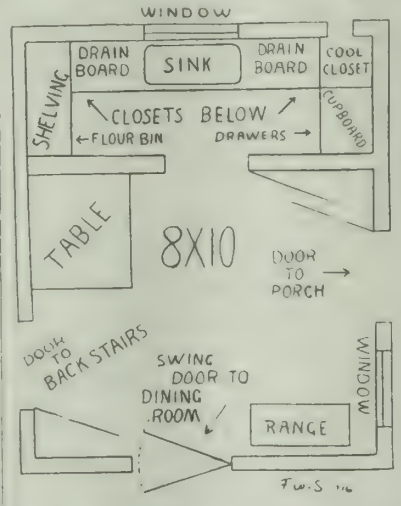
(This Week's Preferred Recipe.)

Those who have tried this cake speak very highly in praise of it. It is used as a double layer cake with any kind of icing or jelly between and on top. Sift 1½ cups flour, 2 teasp. baking powder, 1 cup sugar, and a pinch of salt together very thoroughly; put 1 egg, 3 tablesp. melted butter and 1 teasp. vanilla extract in a cup together, and pour on the foregoing in a bowl and beat all about 5 minutes. Put into two shallow cake pans and bake about 20 minutes.

A PANTRY SUGGESTION.

This sketch is from a reader, F. W. S., who presents it as a practical arrangement of a pantry combined with a small kitchen, and one that is in successful operation.

"It is more convenient than it looks," he writes. "The kitchen is



left for cooking and the pantry is nevertheless right at hand. The door between it and the kitchen can be kept closed, except in the midst of preparing the meal, and the pantry thereby generally kept cool. It takes the place of a large kitchen cabinet, food storage and scullery; and all the dishes, pots and pans ae kept there. Except for the actual cooking of the food, most of the work of the kitchen is done in the small space of the pantry, which is still but a few steps from the stove. We have used this arrangement for four years now, and have not yet found any fault with it."

A GARDEN CLUB.

Why not a garden club in your neighborhood?

The uses of such a club are twofold—to encourage community interest in planting, and to study private gardening.

One branch promotes the planting and caring for trees and beautifying public parks, streets and roads.

The other branch agitates better home gardens. A systematic way to do this is for each member to choose a different plant or flower to experiment with and to report upon to the club. When she has her chosen subject flourishing she invites other members to visit her and inspect it and to exchange views regarding it. Of course at the end of the experiment she brings in a written report to the club for the future guidance of the members.

In this way definite and gratifying results are attained, besides making the club work purposeful for each member.

A CUSTARD OF WORTH.

This custard will go quickly in the making and with enthusiasm in the eating.

Cut and butter on both sides slices of thin bread; quarter, and then cover the pieces as they lie in the bottom of a bowl with one quart of custard mixture. Bake; and when firm spread it with a meringue, which may be browned with the pan put a few moments back in the oven. The custard ingredients are: 1 qt. milk, yolks of 4 eggs, 1 cup sugar, 1 tablespoonful corn starch. Stir the eggs and sugar together and then the cornstarch moistened with a little milk. When they are well mixed stir in the bulk of the milk. The whites of the four eggs are then beaten up, with powdered sugar to sweeten, for the meringue. Good flavors for the custard are orange or almond. Lemon is a flavor liked by some, but for custard a faint amount of lemon flavor goes a long way.

MATCHED MENUS.

Here are some sensible combinations:

With Roast Beef—

Hominy; baked squash or sweet potatoes; spinach, asparagus or brussels sprouts.

With Roast Chicken—

Rice: grape jelly; creamed celery.

With Lamb Chops—

Tomatoes; peas; potatoes au gratin.

With Roast Duck—

Turnips, creamed salsify; sweet potatoes; currant jelly.

With Veal Chops—

Rice in any form; tomatoes; apple salad.

With Veal Stew—

Baked or escalloped potatoes; dumplings.

With Roast Veal—

Rice; spinach, cauliflower or creamed cabbage.

DID YOU KNOW

That gold thimbles are in fashion again?

That tatting bodkins can now be bought in gold and silver and beautifully enameled?

That flour is now made of bananas, lima beans, cassava root, green peas, chestnuts and potatoes, and that it is being more and more used?

SWEET ALYSSUM.

By Sunbonnet Sue.

Has anyone had any other than a happy experience with sweet alyssum? In my garden it shall always have a place.

I have never been disappointed by sweet alyssum. Its graceful masses of snow blossoms wave a friendly recognition to me in summer's heat or winter's rain. It blooms bravely and wants so little.

In our climate it grows like a perennial. Seemingly there is no end to sweet alyssum.

It seems to grow because it loves you. And the more you are cruel to it the more it loves you.

I shear it cruelly when it has bloomed and bloomed and its flowrets are turning to tiny seeds. I grasp its full head of exhausted blossoms and let the blade cut through leaf and stalk. All I leave is a short, stubby stool of bleeding green twigs. The luxuriant sprays in heaps I throw over the fence, but the short stubby stools remain to reproach me, and I can see the bald, bare ground between.

It smacks of sacrifice and farewell to sweet alyssum; the end of its smiling; the abandonment of its cool green and white bed of fragrance. But not so.

In a week, if I water it, all its scars are vanished mid leafage. If I do not water it, the growth goes on. In six weeks it is all a mass of white bloom, a riot of tiny white flowers laughing in triumph.

I do not know how many times a year I cut it. The flowers are so lasting. But I do know that even when gone into seed it lingers and waits ever so patiently to be plagued with the pruner, to repeat blithely its white and green glory.

I love to carpet a spot in my garden with the sweet alyssum that so loves me.

Berkeley, Cal.

EXPERIENCE EXCHANGE.

We are indebted to J. W. MacL. of San Martin for this chocolate pudding, one of the best steamed puddings ever: ½ cup sugar, ¼ cup butter creamed together; ¼ cup cold water; 1¼ cup flour and 1 large teasp. baking powder sifted together two or three times and add 2 teasp. ground chocolate or cocoa and sift again; 2 eggs beaten very light, and a pinch of salt; raisins and walnut meats chopped fine may be added. Steam 1¼ hours—don't let water stop boiling, keep covered while cooking. A good sauce is made of 1¼ cups water, 1 cup sugar, butter size of an egg, pinch of salt; flour to thicken, mixed with the sugar, about a dessertspoonful; let these ingredients boil up and then add a beaten egg and cook until thick enough.

THE WEEK'S BEST HOUSEHOLD HELP.

To have paste that will paste—Take half and half starch and flour and add to a little boiling water. Let it stand a minute, add more water, cook and stir till thick. It is supposed not to mold after use. To make it keep some time add a few drops of oil of cloves.

LIKE MARY USED TO SMILE.

By John Quill.

I saw a couple walkin'
Out in the park one day,
The fellow was a-talkin',
Girl hadn't much to say;
He'd emphasize his subject,
An' ev'ry little while,
She'd sorter smile up at him,
Like Mary used to smile.

A kind of soothin' sweetness,
I never can forget,
Delight o' joy in livin',
I see her sweet eyes yet;
A lot of folks are praisin'
Such things as dress an' style,
But all that's true is smilin'
Like Mary used to smile.

I feel so kind o' lonesome,
A-goin' through this world,
A dizzy-like sensation
Has got me sorter whirled;
They're gettin' few and fewer,
But yet, once in a while
You'll see a girl a-smilin'
Like Mary used to smile.

I've ben so weak, here lately,
Ain't felt like doin' much;
I don't feel good for nothin'
Like doin' chores an' such;
Last night I was a-dreamin'—
Could see a thousan' mile—
I saw an angel smilin'
Like Mary used to smile.

—Christian Herald.

MRS. JINKS ON BEQUESTS.

By B. Fairfield.

Yes, Polly—say, don't peel those potatoes so thick—yes, that frame with the human hair picture in it was left us by Mr. Jinks' grandma—you can waste a bushel of potatoes a year if you don't peel 'em thin—and it's a family relic, not to say hair-loom. I've got the house full of things bequeathed to me.

And then again, there's things been bequeathed to me that ain't in the house. No, ma'am. Not in the house; nor even in the woodshed, where that frame would be if it wasn't mostly Jim's. Some of the articles I've been remembered with by the deceased weren't quite a melancholy comfort — unless you count a log-cabin quilt from my sister Lou, poor soul, which she made with her own hands between raising a passel of children and was sure melancholy enough although not strictly a comfort. Of course I cling to that, though it's the worse off for years of service. I've got it on my own bed—between the mattress and the springs to keep the ticking from getting rusty, which it will do in this climate.

I've been remembered a lot with such things. Not that I'm above money and jewelry, but that was the last thing they always thought of giving me. No, I take that back—the last thing they always thought of giving me was some personal token. "Of no intrinsic value" as the saying goes, "but treasured for its associations." That reminds me I'd better take it out of the trunk up stairs and send it to Belgium—that cork leg I inherited from Cousin Wesley in 1904.

The nearest I ever came to getting something I could make use of myself—quarter 'em when they're that size, Polly — was when Aunt Gusta died. I was always her favorite and did most of her sewing for her. About eleven months before she died she married her fourth husband—she'd buried the three others. A nice man Hector was, and used to go with her to the cemetery with her and carry the flowers she regularly put on the three graves. It was a large lot and had room for another grave; always thoughtful and provident, Aunt Gusta was. Had all the gravestones alike, with no extra cost for designing after the first one. Well, she surprised everybody, including Hector, by going before him, and he was intelligent enough to order the favorite style of gravestone. He wrote me a tear-blistered letter—just shift the lid a little on that stew-pan and the spuds won't boil over—stating that Aunt Gusta remembered me to the last and he was sending a whole trunkful of stuff that she insisted I must have. He was sending them, much though he prized them himself.

Of course I could hardly wait until the bequest arrived, and when it did it took two men to lift it off the wagon. It was as heavy as a coffin itself. I got Jim to bring the hatchet, as the key hadn't been sent, and we cracked it open. Was I feverish? Well!

She'd remembered me all right. You know if there is one foolish passion I have, it is for fine corsets. The trunk was full of them—all of them the best ever made. They were hers, and except that she weighed 220 pounds and you know what a slat I am it was perfectly lovely of her.

Oh, well. I don't believe in wasting anything after a person passes away either. There's Jim. But he's got such a little neck I don't to save me know who I'll find to give his collars to. He wears a No. 13—goodness, here we've let the water boil away and scorch the spuds!

Taking Due Precautions.—Little Albert, son of a minister, was intensely afraid of thunder. One afternoon in July he was caught in what promised to be a severe electrical storm. His father saw him dash for home, and noticed that his lips were moving as he ran. As he got safely into the house his father soothed his fear and then asked: "What were you saying, Albert?" Albert shuddered. "Oh!" he replied, "I was just reminding God that I am a minister's son."

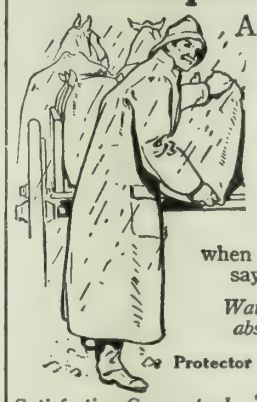
Unexpected Reply.—A Scottish minister was one day talking to one of his aged parishioners, who in the course of the conversation ventured to express the opinion that ministers ought to be better paid. "I am glad to hear you say that," said the minister. "I am pleased that you think so much of the clergy. And so you think we should have bigger stipends?" "Ay," said the old man; "then we'd get a better class of men."

Measurement. — London Householder—Not many people away holiday-making in war time, I suppose, milkman? Milkman — Well, mum, you'd be surprised; at least five gallons of my customers were away last week-end.—London Punch.

Getting a Supply. — Visitor — Is this all the soap there is in this room? Landlady — Yes, sir; all I allow you. Visitor—Well, I'll take two rooms. I like to wash my face in the morning.—Philadelphia Public Ledger.

Wonderful Result. — "Was your garden a success last year?" "Very much so. My neighbor's chickens took first prize at the poultry show."—Phila. Record.

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The Markets.

Unless otherwise noted, prices quoted are f. o. b. San Francisco.

San Francisco, Jan. 26, 1916.

WHEAT.

Coast prices are showing the influence of conditions in the East, where the market has been soaring this week, owing to export sales and adverse weather conditions, and local values have been marked up sharply. The new prices, however, are not favored by local buyers, and business here is very quiet.

Cal. Club, ctl.	$1.80@1.85
Northern Bluestem	1.95@2.00
Northern Club	1.80@1.85
Northern Red	1.85@2.05

BARLEY.

Values are steadily held at the old level, with a firmer feelng, as buyers are taking a little more interest, and there is some anticipation of better prices. A heavy rail movement to the East has had quite a stiffening effect on the market.

Shipping, ctl.	$1.35@1.37½
Choice Feed, ctl.	1.30@1.35

OATS.

No change is noted, and the local market is quiet except for the usual jobbing business in red feed.

Red Feed	$1.30@1.35
Red Seed	1.45@1.65
White	1.45@1.50

CORN.

Local prices are well maintained, but unchanged. There is a fair demand for Eastern yellow, with good California selling at about the same price; and Egyptian, etc., continue in good demand for feeding.

Eastern yellow, ctl.	$1.80@1.85
Milo Maize	1.40@1.45
Kaffir	1.65@1.70
Egyptian	1.45@1.55

BEANS.

There is little new in this department at present. Trading has been rather quiet, and as there was little movement of limas and cranberry beans at the recent advance, the prices show a slight recession. Other lines are quite steadily held, and reports from the interior indicate a strong undertone to the market, with prospects of a good movement by next month. There is little stock left in growers' hands in the valley district, and stocks in general are rather light.

(On wharf, San Francisco.)

Bayos, per ctl.	$5.00@5.10
Blackeyes	3.60@3.70
Cranberry Beans	4.75@4.85
Horse Beans	3.25@3.50
Small Whites (south)	5.80@5.90
Large Whites	5.75@5.90
Pinks	4.30@4.40
Limas (south)	4.50@4.60
Red Kidney	6.50@6.75
Mexican Reds	4.50@4.65

RICE.

The Pacific Rice Growers' Association reports a good-sized sale at $2.05 per ctl., an advance of 5c, with a quiet but firm market both here and in the south. Buyers are waiting to dispose of the cleaned rice, and it is believed that the movement would be retarded rather than stimulated by lower prices.

SEEDS.

There is not much movement in the cover-crop lines quoted, but alfalfa is receiving a little more attention, and the miscellaneous garden seed business is active. Values show little change.

Alfalfa, per lb.	18 @19 c
Melilotus Alba	30 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	4¼ @ 4½c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Sudan Grass	40 c

HAY.

Supplies are comng forward a little better, but are still short and the demand is strong. The small shipments are due to shortage of cars as well as to adverse weather. There is a heavy demand at outside points, both south and north, as well as in the interior, and with prospects of a continued shipping business country stocks are more firmly held. Offerings of alfalfa are light, with a good demand.

No. 1 Wheat	$12.00@15.00
No. 2	10.00@11.50
Tame Oats	10.00@16.50
Wild Oats	8.00@11.50
Alfalfa	10.00@14.00
Stock Hay	6.00@ 9.00
Straw, per bale	.25@ .40

FEEDSTUFFS.

With diminishing supplies of alfalfa hay, alfalfa meal continues to advance. Rolled barley also is a little higher, and recent shipping business in the whole grain indicates that continued firmness may be expected. The general market for feed is firm and active.

(Wholesale prices per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$22.00@22.50
Alfalfa Meal, per ton	20.00@21.00
Alfalfa Molasses Meal per ton	21.00@22.00
Bran, per ton	25.00@26.00
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00@25.00
Cracked Corn	39.50@40.50
Middlings	32.00@33.00
Rolled Barley	28.00@29.00
Tankage	45.00
Rolled Oats	29.50@31.00

VEGETABLES.

The market is in rather unsatisfactory shape, as the bad weather continues to retard buying, while causing a large proportion of the offerings to be of unattractive quality. Good stock, however, generally brings rather high prices. Strawberry rhubarb is now coming in, and sells as high as $2 per box. Southern peas and beans are easy, with no first-class stock offered, while peppers are higher. Tomatoes also have advanced very sharply, with few coming in, and eggplant is considerably higher. Celery shows a wider range, according to quality, really good lots being higher. Lettuce is weak, with an abundance of poor stock, little of which sells above 75c.

Cabbage, ctl.	35@50 c
Cauliflower, doz.	35@75 c
Sprouts, lb.	3@ 4 c
Rhubarb, box	$1.00@1.25
Strawberry Rhubarb	1.75@2.00
Peas, southern, lb.	.05@ .10
String Beans	.08@ .10
Peppers, bell, lb.	.10@ .15
Tomatoes, L. A., crate	1.75@2.00
Eggplant, lb.	.08@ .10
Celery, crate	2.00@3.00
Artichokes, doz.	.50@1.00
Lettuce, small, crate	.50@1.00

POTATOES AND ONIONS.

Delta stock, both potatoes and onions, is somewhat higher, with light supplies. There has been a shortage of potatoes throughout the country, and stock in the Northwest, which is usually available here, has gone to other markets. Onions also are in demand in the East, and local stocks are running low. Australian stock will be coming in soon.

(On Wharf.)

Oregon Burbanks	$1.60@1.85
Salinas Burbanks	2.00@2.10
Delta Burbanks	1.50@1.90
Sweet Potatoes, ctl.	1.35@1.90
Onions, Delta, ctl.	1.85@2.25
Oregon	2.00@2.50
Garlic, per lb.	10@12½c

POULTRY.

Values stand as before on all lines. The local demand is rather light, but no great quantity of Eastern stock is appearing, and local shipments have not been unduly large.

Turkeys, dressed	24@30c
Live Turkeys, lb.	20@21c
Broilers, 15 lbs. to doz. and less, lb.	32@33c
do, over 15 lbs. to doz.	23@25c
Fryers	22@24c
Hens, extra, per lb	17@19c
Small	17@18c
Smooth Young Roosters, per lb.	17@19c
Squabs, per doz.	2.00@4.00
Geese, per pair	2.25@3.00
Ducks, young, lb	18@19c
Old	14@15c
Belgian Hares	9@11c

BUTTER.

Extras have shown no change whatever through the week, being the same here as at Los Angeles and somewhat lower than last year. The lower grades are a little stronger, but the market shows no feature of much interest at the moment.

	Thu	Fri	Sat.	Mon	Tu.	Wed.
Extras	28½	28½	28½	28½	28½	28½
Prime Firsts	27	27	27	27½	27½	27½
Firsts	25	26	26	26	26	26

EGGS.

Last week's storms caused a sharp curtailment of supplies, sending prices the first of the week to an unusually high level for this season. Since then, however, both grades have come forward much more liberally, and prices are again on the down grade, though higher than a fortnight ago.

	Thu.	Fri.	Sat.	Mon	Tu.	Wed.
Extras	33½	32	37	43½	35½	33
Sel. Pullets	31	31	35	42½	33	31½

CHEESE.

Flats are coming forward in good shape, and have dropped back 2c, while Y. A.'s have gained ½c on light arrivals, and Monterey cheese is firm, with light offerings.

Y. A.'s, fancy	17½c
Fancy Calif. flats, per lb.	16½c
Monterey Cheese	17@18c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	28½	28½	28½	28½	28½	28½
Eggs	35	35	33	33	33	33

DECIDUOUS FRUITS.

Local buyers are taking no very active interest in apples, and there has been no shipping movement of much consequence of late. Supplies, however, are not considered excessive, and values are steadily held on desirable lots.

Apples, Cal. Newtown	$ .75@1.25
Pearmain	.65@1.00
Greening	.65@1.00
Baldwin	.75@1.25
Oregon Spitzenbergs	1.50@2.50
Jonathan	1.25@1.75

DRIED FRUITS.

While prices here show no quotable change, the market seems to be picking up a little in consuming markets, with a few more inquiries received by local holders. The latter have not yet gone out after new supplies to any great extent, but attractive offerings of most varieties should be salable without difficulty. It is understood that practically the last available lot of California figs has gone East, and all markets are very short of this fruit. Prunes are very firm, and while the local movement is not heavy there is an increasing demand from the East for the large and small sizes, which are closely cleaned up. Apricots are dull for lack of demand. Peaches find less demand than most other fruits, but stocks on the Coast are comparatively light, and there is no disposition to shade prices, the shortage in other lines assuring a cleanup before the season is over. This should give a clear field for the new Association, which is getting things well lined up for next year. Muscatel raisins are moving to England from New York, and there is a fair demand here. The New York Journal of Commerce says:

"Coast prunes continue strong, with buyers showing a good inquiry, and purchasing on the part of the operators displaying a slight increase. The New York buyers, however, continue slow in purchasing, and the actual volume of buying done on the part of the local trade for future Coast shipment is comparatively light.

"Spot California prunes are firm, with the smaller sizes very scarce. A moderate buying is in progress in

THE HOG THAT BRINGS MOST MONEY.

[Written for Pacific Rural Press by R. M. Chaplin, Farm Advisory Dept. Western Meat Co.]

The price of hogs in San Francisco, as well as in any other market, is largely determined by supply and demand, yield and quality. To a certain extent yield and quality go hand in hand, and if hogs have a high yield it will be of prime pork. It will be absolutely necessary for California ranchers to produce pork of equal quality with Eastern farmers in order to command equal prices when conditions are such that our requirements of pork are supplied by our own ranchers. It is therefore necessary that extra stress must be laid on efforts to improve the quality of hogs, and with this end in view we are advancing our price on top hogs to 7¼c, making the spread 175 to 250 pounds, as we believe this will be an incentive to hog-raisers to hold their hogs until they put on extra weight rather than sell them off in an immature condition from 100 to 150 pounds.

There is very little money in raising and marketing light hogs —these are bringing considerably lower prices than heavy hogs, and if raisers can get one-half or 1 cent a pound more by putting on an additional 40 to 50 pounds' weight, they should do so, as the extra weight they put on is sold at a profit and at the same time they are realizing a higher price for the total weight.

With present prices of feed stuffs, pork ought to be grown at not over 5 cents a pound, and hogs weighing 130 to 140 pounds, if properly fed, should put on a pound and a half per day, so that with a month's feeding, hogs weighing from 130 to 140 pounds, and worth 6½ cents on the San Francisco market, will bring 7¼ cents per pound if their weight is increased to 175 to 200 pounds.

Special Live Stock Market Report.

The cattle market here is in about the same condition as reported last week, with the exception of a shaving of price on dressed heavy cattle, which are selling as low as 10 cents. Everybody here seemed to have plenty of cattle on hand to supply their trade, while the railroads were tied up and shipping conditions are back to normal again. The hay shortage in Nevada is becoming acute and feeders there will not be able to hold as long as is customary. About 2500 feeders have been shipped into this State from Nevada points and put on green feed, from where they will be turned off as grass cattle next summer.

While not quotably higher there is a stronger feeling in the mutton and lamb market and a little higher price on dressed mutton and lambs is expected any time now. Reports from the valleys indicate that there have been heavy losses in lambing in the river districts. The wet weather which has prevailed all over the State this month has undoubtedly made inroads on the lamb crop and has not been conducive to good feed.

As will be noted in another column of this issue one packer in this city is offering a premium on hogs weighing 175 to 250 pounds. This should encourage farmers in holding back their hogs and being more liberal with the grain sack. Hogs are not being offered freely at this time in this market, due perhaps to the great amount of green feed now available. This is good policy and should be continued. The feeling in Chicago the past week has been somewhat weaker and prices have been cut a trifle. The runs however continue heavy.

WOOL.

There is considerably more activity in the local market than has been evidenced for some time, especially in fleece wools. As a result the market has been braced up on three classifications. The market at Boston has a strong tone and the tendency is toward higher prices. This is attributed to the improvement, previously reported in this column, of the European markets as well as to the general prosperous condition in this country.

several quarters, and interest appears to be growing, after being very dull during the after-holiday lull.

"Coast peaches and apricots are very quiet, with advices reporting a slow demand in all quarters. However, the limited stocks in the hands of packers maintain the general tone of the market on a very firm basis.

"A good inquiry continues for California raisins, and the prices are held on a firm basis. English operators, who have bought heavily since the first of the year, are still in the market."

Apples	6½ @ 7½ c
Apricots, per lb.	9 @ 12 c
Figs, white	5 @ 6 c
Black	3½ c
Calimyrna	8 @ 10 c
Prunes, 4-size basis	5 @ 5½ c
Peaches	4½ @ 6 c
Pears	4 @ 7 c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6¾ c
London Layers, 3-crown, 20-lb. box	1.25
Imperial Clusters, 6-crown, 20-lb. box	2.50
Bulk, layers, 50-lb. box	2.75

CITRUS FRUITS.

The eastern auction sales report higher prices for oranges, which are caused by light shipments received and on the way. The rains of the last two weeks have caused very light shipments from California, but with bright weather the southern part of the State will send east several hundred cars daily. The lemon growers report that crop to be in fine shape also.

On the New York auction, Monday, Jan. 24th, oranges averaged from $1.95 to $3.30 per box, and lemons brought from $3.10 to $3.85. At Chicago the same day oranges averaged from $2.50 to $3.75, and lemons $3.75 to $4.25 per box. Shipments for the season are almost 1000 cars less than they were a year ago.

Oranges have been in better demand in the San Francisco market than most other fruits, but the movement is not heavy. There is quite a lot of export business, however, which in conjunction with Eastern trade is the determining factor, and dealers are looking for an early advance in navels. Tangerines already have been marked up a little. The top figure on grapefruit is a little lower.

(Wholesale prices, San Francisco.)

Oranges, Navels	$1.50 @ 2.75
Tangerines	1.50 @ 2.00
Grapefruit	1.75 @ 2.25
Lemons, box	1.50 @ 3.00
Lemonettes, box	1.25 @ 1.75

HONEY.

Values show no quotable change, but most of the supplies held here have now been absorbed, and there is quite a bit of demand, in view of which there is a decidedly firmer tone to the market.

Water White, comb	13 @ 15 c
Amber	8 @ 12 c
Water White, extracted	7 @ 8 c
Light Amber	3 @ 4 c
Dark	2 @ 2½ c

NUTS.

The nut situation is unchanged. California walnuts are entirely nominal, with nothing offered, while the trade is fairly well supplied with Oriental stock of very ordinary quality. Almonds are getting rather scarce, but there is no real shortage, and the movement is almost entirely in small lots.

(Prices f. o. b. San Francisco.)

Almonds (1915):	
Nonpareil	15 c
IXL	13½ c
Ne Plus Ultra	13 c
Drakes	11 c
Languedocs	11 c
Walnuts (1915):	
Budded, per lb.	17½ c
No. 1	14 c
No. 2	11 c
Jumbo	17 c

LIVE STOCK.

Further changes are noted in the classification of hogs. Light stock is in ample supply and a little easier than last week, and hogs under 175 lbs. show no unusual firmness; but stock between 175 and 250 lbs. is wanted by the packers, and good stock brings quite an advance. Quite a lot of lambs have been shipped in lately from the north. Sheep are scarce in California, and the market is firm.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, S. F.)

Steers, No. 1	6¾ @ 7 c
No. 2	6¼ @ 6½ c
Cows and Heifers, No. 1	5¾ @ 6 c
No. 2	5¼ @ 5½ c
Bulls and stags	4 @ 5½ c
Calves, light	8½ @ 9 c
Medium	7½ @ 8 c
Heavy	6½ @ 7½ c
Hogs, grain-fed:	
100 to 150 lbs.	6 c
150 to 175 lbs.	6½ c
175 to 250 lbs.	7¼ c
250 to 325 lbs.	6½ c
Prime Wethers	6¾ @ 7¼ c
Full Wool Lambs	8¼ @ 8¾ c

DRESSED MEATS.

Steers	10¼ @ 10½ c
Veals, large	12½ @ 13 c
Small	13 @ 14 c
Prime Wethers	12½ c
Lambs	14½ c
Hogs	9½ @ 10 c

WOOL.

(Prices paid in the country.)

Sacramento Valley, lb.	16 @ 17 c
Southern, year's staple	13½ @ 14½ c
Six months	12 @ 13 c
San Joaquin (defective)	9 @ 10 c
Northern, free	12 @ 15 c
S'thern Mountain, free	12 @ 13 c
Tehama Co., free	13 @ 14 c

HORSES.

This week has been the most active for some time in the local horse market, a number of good sized offerings coming in from various parts of the state, and including a wide range of weights and classes. Heavy, gentle-broke stock in good condition found ready sale, both for local and country use, and there has been some demand even for the less desirable offerings, though it is hard to get satisfactory prices for such offerings. There is considerable demand for mules at present in the country.

(Approximate values at San Francisco, based on auction sales.)

Drafters, 1700 lbs. and up	$200 @ 225
Drafters, 1550 to 1650	150 @ 200
Chunks, 1350 to 1500 lbs.	150 @ 175
Wagon horses, 1050 to 1350 lbs.	110 @ 150
Green Mountain range horses, 950 to 1200 lbs.	20 @ 75
Farm Workers	50 @ 100

GROCERIES.

Flour has again been marked up, in sympathy with the sharp advance in wheat. Other staples show no great change at present, though practically everything in the foodstuff line is firm. Coffee is coming in more freely, and may ease off a little.

(Wholesale prices, San Francisco.)

Flour, Family Extras, per bbl.	$6.40 @ 6.80
Sugar, granulated, per lb:	
Cane	6.30c
Beet	6.11c

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who have the "Pep," are tired of working for others, and wish to acquire land of their own. Land is in Tulare County, between Pixley and Spa, mostly graded and checked, and has been in Rice last year, producing from 30 to 40 sacks per acre. Also good for grain, fruits or alfalfa. Electric pumping plants, reservoirs, ditches and buildings. For rent on shares, or sale on crop basis, on long terms.

Address: R. C. Fairall, Pixley, Cal., or R. Schiffman, owner, Chamber of Commerce Building, Pasadena, Cal.

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.00
" 23	30.50	34.83	30.00	34.33
" 30	28.16		26.66	
Feb. 6	23.33		23.75	
" 13	23.00		25.10	
" 20	23.60		23.58	
" 27	21.40		20.80	
March 6	20.50		19.00	
" 13	20.66		19.00	
" 20	21.00		19.66	
" 27	20.83		18.50	
April 17	22.00		23.08	
" 24	21.80		22.25	
May 1	26.16		22.00	
" 8	23.33		22.00	
" 15	23.16		22.00	
" 22	23.75		21.91	
" 29	23.08		21.83	
June 5	22.50		20.70	
" 12	22.00		21.00	
" 19	22.00		20.00	
" 26	23.33		23.83	
July 3	23.83		22.50	
" 10	25.50		25.00	
" 17	24.83		24.66	
" 24	25.41		25.50	
" 31	25.80		25.80	
August 7	30.50		28.00	
" 14	31.16		28.66	
" 21	31.25		30.16	
" 28	30.58		29.16	
Sept. 4	30.08		30.16	
" 11	34.33		31.66	
" 18	37.08		33.37	
" 25	38.66		34.66	
Oct. 2	40.08		37.33	
" 9	40.08		38.00	
" 16	45.50		40.00	
" 23	48.08		42.00	
" 30	48.58		42.83	
Nov. 6	51.08		43.00	
" 13	54.25		45.33	
" 20	53.83		45.00	
" 27	52.90		43.40	
Dec. 4	43.91		40.16	
" 11	41.16		37.33	
" 18	27.83		28.00	
" 25	40.80		36.60	

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	28.60	28.00		28.80
" 9	25.33	26.66	26.00	28.16
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	28.66		28.00	
Feb. 6	26.68		26.80	
" 13	26.74		27.00	
" 20	29.00		27.16	
" 27	29.10		27.00	
March 6	27.00		25.25	
" 13	24.66		24.00	
" 20	23.00		22.50	
" 27	22.91		23.00	
April 3	23.00		22.23	
" 10	23.08		22.00	
" 17	23.00		22.00	
" 24	23.00		22.00	
May 1	23.08		22.00	
" 8	23.00		23.08	
" 15	23.58		23.00	
" 22	23.58		23.00	
" 29	23.50		23.00	
June 5	23.90		23.00	
" 12	24.08		23.83	
" 19	25.16		26.00	
" 26	25.50		26.16	
July 3	25.83		26.16	
" 10	26.21		26.00	
" 17	26.58		26.00	
" 24	25.41		25.50	
" 31	27.00		26.00	
August 7	27.00		26.00	
" 14	27.00		26.00	
" 21	27.50		26.00	
" 28	28.00		26.00	
Sept. 4	28.00		26.00	
" 11	28.00		26.00	
" 18	27.00		26.00	
" 25	26.50		26.00	
Oct. 2	25.91		26.00	
" 9	26.91		26.00	
" 16	27.00		26.00	
" 23	27.00		26.00	
" 30	27.00		26.00	
Nov. 6	26.55		26.00	
" 13	28.11		25.33	
" 20	29.59		28.66	
" 27	28.90		28.80	
Dec. 4	27.41		26.50	
" 11	27.33		23.83	
" 18	43.08		36.00	
" 26	26.40		28.00	

The 1915 almond crop was the largest ever produced.

The Exchange sold the last of its 1915 crop on January 15, 1916---demonstrating that this strong co-operative association can successfully finance and market any crop.

Almond growers not affiliated are invited to co-operate for mutual benefit by becoming members. Full information will be given upon request.

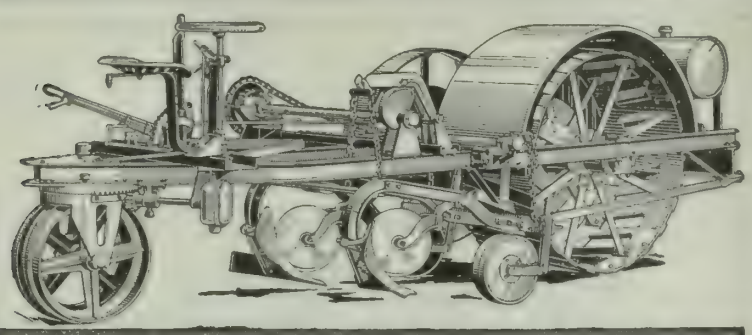
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San Francisco.

Publisher's Department

WANTED A WIFE—is the heading of an advertisement sent us this week by a farmer living in Colusa county. We returned the writer his money and the ad. as we are not running a matrimonial bureau. However, for the benefit of our young lady readers who may feel aggrieved, we will forward any letters to the gentleman that may be sent to this office. The advertiser stated that he was a young man, good looking, brown eyes and dark hair. He wants a housekeeper, from 18 to 24 years of age—doesn't say anything about nationalty, color nor beauty. Write to him, girls, care of the manager of Pacific Rural Press, and your letters will be forwarded.

The book department reports heavy sales these days. Orders coming from all parts of the State and in fact from all over the world. In number of sales our California Fruits still lead, with California Flowers and California Hog Book running a race for popularity. Our two books of 1000 Agricultural Questions Answered in each, and California Poultry Practice are in a class of their own and we sell lots of them.

In writing to Mr. Guilford, Ralph D. Robertson of Willows, one of the best agriculturists in the U. S. Service, says: "I have read your 'California Hog Book' with much interest and shall continue to enjoy it. It strikes me as being extremely practical." This book is published by the Rural Press and will be sent postpaid for $2 per copy.



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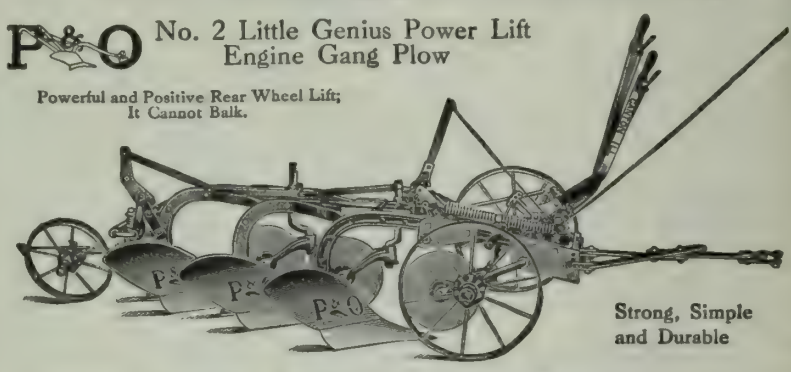
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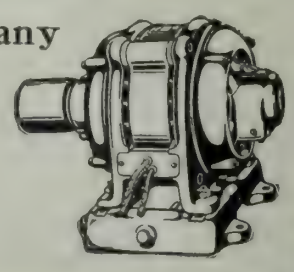
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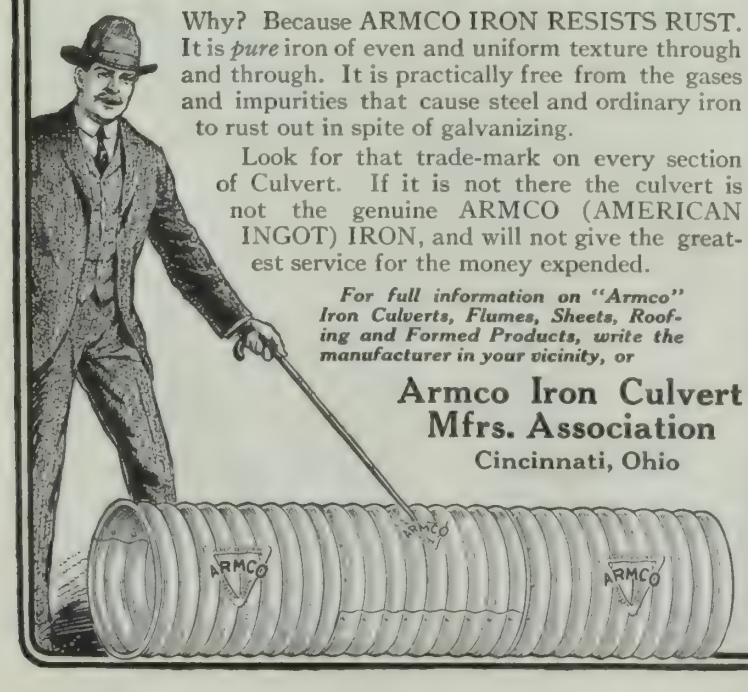
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Vol. XCI—No. 6 Forty-sixth Year.

THE PACIFIC RURAL PRESS

SAN FRANCISCO FEBRUARY 5, 1916. LOS ANGELES

California State Library 7-1-17

Fruit Growing in Imperial Valley.

With wise selection of soil and varieties, Imperial Valley's freedom from disease, cheap water, which renews fertility, her early season, and her market facilities make fruit culture a most promising pursuit.

[Written for Pacific Rural Press.]

THE fruit grower's opportunity in Imperial Valley is unique and large, yet limited. A new land, uninfested by the horde of insect and fungus troubles which make fruit-growing so costly or uncertain in other sections, she bids fair to remain free. Her 300,000 acres, irrigated with cheap and plentiful water, are isolated from infection from the rest of the world by a wide border of desert, which rises like a yellow blanket against the dark background of equally unfruitful mountains, which all but encircle the Valley.

The county horticultural commissioner is keenly alive to the dangers which may be encountered in every importation of nursery stock or seeds, and the county supervisors have provided him with laws and inspectors by which "we will keep the county free from insects and diseases if it is humanly possible." Telephones and good roads help make it possible to quickly stamp out any infestation that might occur.

Due to the dry, hot climate, with very few inches of rainfall per year, and a summer temperature which sounds more oppressive than it is, perhaps most of the fungus diseases cannot live, even if introduced. Grape mildew is very likely one of these, and varieties, such as Purple Damascus, are grown free from disease. Sulphuring and spraying are unknown in Imperial Valley fruit culture. Add to the disease immunity, a temperature that warms up so early in spring that the Valley gets fruit to market ahead of all other points, an efficient railway service, and government men giving marketing aid, and you have conditions prime for profitable production of early shipping fruits, whose trees thrive through the hot summer.



Harvesting Table Grapes in the Imperial Valley.

Experiments with practically all kinds of fruits have been made in various parts of Imperial Valley ever since the water came, about fifteen years ago. We give the general conclusions of those most competent to judge.

With the exception of dates, citrus fruits, olives, and Winter Bartletts, only early fruit is profitably marketable.

Dates Popular.—Dates are still an experiment, though there is much enthusiasm which has led to the planting of considerably more acreage of seedlings in various parts.

Pomelos Best Citrus Fruit.—Oranges are not favored commercially because they are not often very prolific, and usually have grown "raggy" and tough, though with what to some is a delicious sweetness, excelling oranges from other parts of California. At least one rancher, who has a few trees bearing an abundance of tender fruit, claims that the ragginess is largely due to the poorer cultivation and fertilization, which most Imperial Valley oranges get. Small but thrifty lemon orchards are encountered here and there, but enthusiasm is not high.

In grapefruit, Imperial Valley seems to have the lead of California, for the many trees already producing show heavy yields of fruit superior to that from the rest of the State and comparing favorably with that from Florida. The orchard most talked about is one of 108 trees of Marsh Seedless, planted in long rows between oranges and lemons. It paid $2560 last year to its owner, who last spring planted sixty-odd acres to grape fruit and budded over some of his oranges. The 108 trees already bearing were never pruned until this winter, and received rather indifferent care. One man this year will plant 160 acres, and everywhere one goes in the Valley, he finds large numbers of plantings two acres and upward. The Imperial Valley fruit is sweeter than is commonly found; the bitter is less pronounced, the rag is tender, and altogether it is as desirable to eat without sugar as the average western orange.

Olives are not much known, but the isolated trees seem to thrive and bear.

(Continued on page 163.)

PACIFIC RURAL PRESS

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., February 1, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	.58	25.42	24.81	50	32
Red Bluff	59	16.39	14.13	50	30
Sacramento	1.00	14.55	10.93	50	34
San Francisco	1.66	21.95	12.77	56	38
San Jose	1.28	13.88	9.19	54	28
Fresno	.89	8.61	5.20	58	32
Independence	1.60	9.47	5.12	52	—
San Luis Obispo	4.28	22.63	10.68	60	36
Los Angeles	3.02	17.61	8.18	58	38
San Diego	—	——	5.25	56	38

THE WEEK

We were not so far wrong last week when we fancied that the weather prophet might send us Alaska weather. That has not happened so far, fortunately, but one thing seems to be established, and that is that our weather has been mis-sent to Alaska. Last week it was telegraphed from Southern Alaska that "no snow had fallen, there had been no ice up to the middle of January, and children were attending school barefoot." No doubt our real-estaters will soon be subdividing for date-growing up there. That all may have an even chance, we do not mind saying that it was at Sarnak that the kids were barefooting — and the name sounds as balmy as Egypt.

Southern California has had more than her share of weather troubles, though, fortunately, no very low temperatures have fallen. It has been rather an excess of warm water, troublesome widely, but most destructive below San Diego, just about where you get to Mexico. Sad injuries and life losses have befallen a section which is proverbially calm and salubrious—and all so unexpected, too, for it is a country where the trouble is to fill the reservoirs—not to make them hold the water. The sad lesson should not be forgotten; it is not safe to live in the pathway which reservoired water may require.

As we write, the storm area seems to have swung free from the State, and the customary winter sunshine of California resumes its hold upon sky and earth. There are all kinds of possibilities for February weather, although February temperatures are fairly constant. It is the great planting month. Though too late for wheat in most situations, it is in the range for nearly all other field and garden plants, except those intolerant of frost, and, with the soil moist to the very bottom of it, 1916 should be a year of great production and prosperity.

What Makes California Great?

We delight to devote a little space now and then to the views of non-Californians upon what is characteristic of the State, for we all live so close to California that we may not see clearly the State in perspective, which gives the truest view of it. Five years ago Charles H. Gaunt was sent to San Francisco to increase the efficiency of the Pacific Coast division of one of the great national telegraph companies. He was manifestly a man of achievement and discernment, or he would not have been put upon the task, and now he has returned to the East to bring a central division up to the efficiency he has established here. Such a man's judgment of California is worth knowing for the better understanding of our own problems. At a leave-taking tendered to him last week, Mr. Gaunt said, among other things, these:

"For five years I have tried to be some small part at least of the life upon the Pacific Coast. I have studied its people and their activities, and have marveled at their energies and their understanding. The attributes of its people have brought an empire to the Pacific Coast, and because of them it must endure and flourish until it transcends in power and beauty all other empires. The loyalty of the Pacific Coast is not climatic, nor is it inherited. It is spontaneous. Not the loyalty of blind obedience, but the loyalty that places each man's shoulder against the wheel to combat the common foe, and keeps the shoulder against the wheel to support the common cause."

It is then the California people which make California great, not by idling under its manifest natural advantages, but by standing together, for or against, as the truth may require. All seers emphasize the loyalty—the solidarity of Californians. Let this product of pioneer life live in coming generations.

What a Canny Scot Did with Grapes.

Now that we hear so much about protecting vineyardists from farther disappointment in pursuing an unprofitable industry, and so much also about the plungers who have been broken up by pursuing it unwisely, it is at least interesting to hear of a man who filled up a savings bank with the earnings of his vineyard. It is announced that the late John Muir, the Sierra scientist and literateur, who was supposed to have died nearly penniless, because neither sciences nor letters have much standing in wealth-winning, really left quite a snug fortune. Instead of having lived under temptation to break into a bank, he had really been filling several banks—all unbeknownst to his relatives.. He left a fortune of a quarter of a million. Of this, $185,000 was in cash deposited in various banks. The money, explains his daughter, Mrs. Hanna, was laid away when her father took ten years from his work as a naturalist, and devoted his time to the cultivation of his vineyards, which were deeded to him by Dr. John Strenzel, his father-in-law, who was a Polish revolutionist, who, escaping from exile in Siberia, came to California, settled in Alhambra valley near Martinez. We remember him very well from 1875 to the close of his life, but he had done things long before that date, for he showed the first California raisins at the State Fair of 1863, and was wise in California fruit-growing when the first great push for greatness came to our fruit industry in the latter '70s. When Muir won Dr. Strenzel's daughter for his wife, he not only captured a reigning rural belle (for we remember her as very gracious and popular), but won the father also, for he gave him his vineyard and its appurtenances. It appears that during his decade as a vine-grower, Muir kept putting away this five thousand a year of grape profits in savings banks, depositing altogether $50,000. This is the deposit which grew to nearly $110,000 by compounding interest, and kept on growing after Muir's death several years ago. He made money with grapes, not only during the decade mentioned, for his biographer says: "He never quite ceased to be the rancher and become entirely the naturalist."

Perhaps This Is Not So Canny.

The prohibitory law in the State of Washington seems to be stirring up the local millionaires, and they are reported to be making preparations to move. Three of them have declared their intentions to move to San Francisco. This is the condensed news record of it: Their homes in Seattle were recently raided by Sheriff Robert Hodges under the new prohibition law of Washington. From the cellar of one of them the Sheriff took $10,000 worth of rare vintages, some of which had been acquired originally by his father. From the $50,000 home of another a thousand dollars' worth of wine was taken, and from the home of a third two thousand dollars' worth was thrown out. These three men became millionaires by the lumber and cement routes, and they had laid up much domestic bric-a-brac of a liquid character for use in coming days. Their claim is that it had been purchased long before the prohibition law went into effect and that their property was taken from them without due process of law. But without waiting to recover, they propose to move to San Francisco, where sheriffs do not have such plenary powers. Of course, there is a question of how safe they will be in California, for the prohibition army proposes to make a more resolute drive on the public throat during the current year, and no one can tell how they may plug it up. Perhaps it would be more canny to store wine by aeroplane above the three-mile altitude. It is cool enough up there and more readily shifted than from a cellar.

The Rangers Go Forth to Fight.

Perhaps the broadest and sharpest issue which has ever arisen in this country between production and distribution is that which has been pending for several years between the great range and the great packing interests. Though they have fought for years, and have won some victories, and have entrenched themselves in some co-operative institutions, and have worked their guns for transportation and distribution from these platforms with more or less success, the range interest still feels itself assailed, beaten and robbed by the great packing institutions which they call trusts and unholy combinations against fair play for producers. Our immediate interest in this old conflict is that the fight is to be put on in the immediate future with re-doubled fury. At the great rangers' convention (which is the more intelligible name for the convention of the American Live Stock Association) at El Paso last week, the committee on marketing conditions issued a statement in which it was charged that the packing interests are in control of practically all the stockyards and terminal facilities. "In a large measure," the statement sets forth, "they are in control of the

banks and cattle loan companies at the market centers. Under these conditions, it is impossible for the seller to meet the buyer on equal terms. The cost of meats to the consumer is higher than ever before in the history of the country, and we consider an investigation to determine the cause should be made,'' the statement continues. On the basis of these declarations the convention delegates subscribed $56,000 as the nucleus of a $250,000 fund to finance a fight for better marketing conditions. A committee was appointed to endeavor to enlist the assistance of the government in an investigation of the profits of the packing industry, apparently for the purpose of showing that the men who grow the meat are not in it with the men who handle it.

California's Interest in the Issue.

In the great length and breadth of this issue California has only limited original interest because California is not a great range-producing State. We are in the meat situation very much as we are in the bread situation, which we tried to throw out clearly in our issue of January 22—that is, we are hungry and dependent on our neighbors bringing in something to keep us from starvation. Our pantries are full of fruit-cakes, of stuff to make wine and beer of, etc., and we have to push such things out to get money to buy bread and meat with. If that were all of it we would simply have a consumer's interest in the range products, and would be on the same side of this appeal to the government with the man who wishes to buy a soup bone on the east side of New York—or of London, so far as that goes. But really our interest is different from that because we have in California a great undeveloped meat-making capacity, and ought not to be buying meat from the middle of the continent, nor from any other part of it. Our interest in the death-struggle between the great rangers and the great packers is like that of the sportsmanlike woman who shouted, ''Go it, husband,'' and ''Go it, bear,'' as either of the contestants seem to need encouragement—to the end that the fight be fair and the victory fairly won. And we cherish this judicial sentiment because we have faith that the thorough exposition of the situation may do two things at least: it may show what producers' rights are and how far packers are making it impossible to secure them. While doing that it will uncover the whole marketing condition and show that producers must thoroughly co-operate to get their rights, and to open facilities for fair trade. It will show also what California meat-producers have to do, to fairly buy or sell a few head of this or that meat-making furniture which they may need to do. Since boyhood we have seen the handicaps which have been heavily laid on farmers, by drovers, cattle-buyers, sheep-buyers, pelt-buyers and all that class of middlemen, who can put up more games between themselves to get live stock products away from producers than the whole neighborhood of farmers can see through in the course of their natural lives. The big packers may be bad enough, and we expect the issue now being urged by the great rangers will show that, but it will not show up all the little swipes, deceptions and conspiracies which exist throughout the country and keep the small meat-makers from getting proper reward for their labors and investments. Our hope, however, is that if the great range producers do succeed in slaying the big game which crushes them, the small producers may take heart to rid the country of the many go-betweens which beset the pathway of farm meat production. We need open markets of some kind in all the larger towns to which stock can be driven and sold, and we need in the metropolis a large market to which animals can be consigned with assurance that they will not be juggled with and beaten below what they are rightly worth. Sometimes it takes a great thunder-storm to clear the sky and the air, and that is what we hope the great rangers will be able to engender with their quarter of a million of slush money. It takes sharpers to catch sharpers, and we hope the rangers will have their sharpers ground to a feather-edge.

The Human Equation.

Col. Irish has his aerial scouts out on another page of this issue reconnoitering Col. Weinstock's position, and what we get from him this week is by wireless from one of his runabout aeroplanes. It is too soon to expect heavy firing, for the big guns on both sides are not yet in positions. And yet, we get a little intimation of where the howitzers will be mounted, for one line of attack at least. Col. Irish exalts the ''human equation,'' which we take to mean: what are you going to do about it, in a free country, if the people prefer to have their own individual ways instead of the imperial way which you conceive to be best for them? We expect a battle will soon open on some such fundamental question as this, but we are not fighting it, so all we can do is to invite the reader to watch for the shells which will follow the gas-bombs, which is about all the contestants have fired so far. Our position in this war is that of benevolent, armed neutrality—we are willing to have the thing fought out on our territory for the ultimate good of the state, but we do not de-mobilize our own army. We advise every reader to catch on to these war-bulletins which the commanders issue and keep on.

Queries and Replies.

Querists must give name and address.

Growing Onions from Sets.

To the Editor: Is there a certain time to plant onion sets to keep the hard stalk from growing up through the center? I was raised in Mississippi and we always planted onion sets early in the spring. They made large onions, but never had the hard stalk that gives me so much trouble now. If you can help me on this subject I will appreciate it very much.—M. W. E., Jackson.

Probably you were growing at the South the ''potato'' onion, which is popular in that part of the country. It is better to grow from sets than are the kinds chiefly grown in California which come better from the seed. The ''potato'' and the ''tree'' onion make ''top sets'' on the stem instead of seed, and these top sets planted out do not shoot a seed stem such as you object to. You can grow very useful onions from ''bottom sets,'' which are seedlings allowed to go dry, and have their growth thus stopped, but you must use them sooner—that is you must pull them before they shoot the seed stems. California has such a fine climate for onions from the seed that sets are very little used. Onions are hardy and the way to get early onions is to plant seed in the fall, not in the spring.

Cats Scratch Fruit Trees.

To the Editor: What should be done with fruit trees next to the house where the cats have scratched them and the sap runs out,—C. E. K., Sacramento.

Scrub off the gum, which is probably now soft from the rains, with an ordinary scrubbing brush, and let it dry. Then cover the wounded parts completely with Bordeaux paste (or common whitewash will do) and surround with wire net or slats so the cats cannot get to the bark; also put up a rough scratching-post for the cats.

Tile-Draining in California.

To the Editor: Has tile-draining proved beneficial under conditions of California climate? I am sure a discussion of the use of tile in California, especially in connection with adobe soils, would be helpful to your many readers.—O. L. T., Santa Rosa.

There is little need to discuss tile drainage theoretically. That chapter was practically finished a generation ago. Any soil which does not rid itself of surplus water readily should be under-drained—providing the crop justifies the expense. Not only that, but land now useless can often be given high productive value by drainage. It is usually heavy land that needs drainage because light land usually drains itself, unless it lies too low. In that ease, deep outlet should be provided for it to do so through drains. The kind of discussion which would be helpful would be the recital of experience of what tile drainage has cost and of what advantage it has been in the experience of our readers. We shall be glad to have accounts along that line.

Pigs and Piemelons.

To the Editor: Do pie-melons affect the litters of pigs of a sow when that is the chief feed; if so, which way does it affect them?—E. W. V., Visalia.

Piemelons have no poisonous effects. Pigs kept chiefly on them might be expected to encounter any trouble which might be induced by starvation. A piemelon sow could not produce milk to make strong pigs because the feed lacks nourishing contents. Piemelons can be used to advantage in connection with grain, alfalfa hay and other good feeds, but not chiefly nor alone.

Inter-Planting Walnuts.

To the Editor: Will you give opinion on the setting of walnut trees in an orchard of twelve-year-old peach trees, removing only such trees as are necessary to place the walnuts at a distance of sixty by fifty-four feet? The peach trees stand twenty by eighteen feet. Later as walnuts come to bearing I would remove the remaining peach trees.—D. E. C., Wasco, Cal.

Walnuts are likely to have rather a hard time breaking into such an old, close-set peach orchard with only such a footing as you propose. You will probably have to use extra water and manure to push them and cut back the near peaches to give them light. We would rather remove alternate short-distance rows of peaches and plant the walnuts at 40 feet so as to square up with alternate rows of the remaining peaches. This would leave the walnuts at 40 feet when the other peaches come out. In this way you can rip up the center of the land under the displaced row deeply and get out as many old roots as possible and this would give the walnuts a better chance. But before doing this we should want pretty good evidence by observation of old trees, that walnuts are thrifty and profitable in your section.

Straight Tips on Spring Spraying.

[Written for Pacific Rural Press by H. P. Stabler, Hort. Commissioner, Sutter County.]

In the Rural Press for January 22nd you have published spraying directions with the recommendation of Rex at one to eight. This is the strength for fall work. The company suggests a dilution of one to eleven for spring .

I send you an account of spring spraying I have just prepared for circulation among Sutter county fruit growers, and before publishing it I worte the various spray manufacturers and have incorporated their directions for dilution for late spraying. The copy was submitted to Prof. Ralph E. Smith before it was printed and has his approval.

Peach Blight and Shot-hole.—Two sprayings are necessary for the control of peach blight and shot-hole fungus in peach, almond and apricot trees. The first application should be made in the fall before December 15th, while the second spraying should be done just before the trees bloom. If for any reason the first treatment was omitted the spring spraying should be done without fail, as it is the more important of the two. Twig borers, curl leaf and pernicious scale (also called San Jose scale) will be controlled by the spring application.

Why Lime-Sulphur?—The lime-sulphur spray is recommended for this work as it is an insecticide as well as a fungicide. It is not advisable to use Bordeaux mixture as it would not be effective against twig borers and scale, although it is a strong fungicide. Home-made lime-sulphur is now almost entirely superseded by the commercial article. However, growers who desire to make the solution can obtain the most approved formula by addressing the County Horticultural Commissioner.

Commercial lime-sulphur sprays have given satisfaction in the past. Of the many reliable brands on the market the best known here are "Rex," "Ortho" and "Orchard Brand." For spring spraying the manufacturers of these brands recommend their dilution as follows: "Rex," one gallon of the material to eleven gallons of water; "Ortho," one gallon to eleven gallons of water, and "Orchard Brand," one gallon to ten gallons of water. The barrels should be agitated before the liquid is drawn off and kept tightly closed when not in use. When applying, the mixture should be kept constantly stirred. These sprays are to be used only when the trees are dormant.

Why a Power Outfit?—A power outfit is necessary for the best results as it is important that the liquid be forced into the rough places on the bark under a pressure of 150 to 200 pounds. The nozzle should be held close to the limbs in order that the full driving force of the spray may be realized. This is especially important when it is sought to control twig borers. These small grubs bore into the ends of tender shoots causing them to wilt and die; often the damage is very serious and when not killed outright the young trees are left misshapen and injured. Later they find their way into the fruit, causing the wormy peaches and almonds.

How to Get the Peach Worm.—During the winter the larva or grub of the twig borer remains just under the bark in the crotches of the limbs and can be discovered by the frass or saw dust that is pushed out of the burrow. For about two weeks the larvae is busy in its efforts to quit its winter quarters and finally emerges about the time the young leaves appear when it bores into and destroys the shoots. Last year this troublesome pest did great damage to peach and almond trees and with conditions favorable for its development may appear again this season. The late spraying is timed to control this pest. It is equally important at this time to thoroughly coat all of the small limbs and branches for control of peach blight and curl leaf.

While late treatment is advised, growers must be governed by the weather conditions, size of orchard, capacity of the pump and efficiency of the equipment. If possible the work should be completed just as the trees are beginning to bloom.

Peach Blight and Apricot Shot-hole.—Peach blight, a fungus disease of the peach and almond, causes a gummy substance to appear on the branches and in cases of severe infection, orchards have the appearance of having been burned over. Later the leaves drop and the crop is injured. The spotted and gummy peaches and almonds so noticeable last year were infected with peach blight.

Shot-hole of the apricot, also a fungus disease, is found on the leaves, perforating them and causing the rough brown spots on the fruit, often rendering it unsalable. Its similarity to peach blight makes the same treatment necessary. These two fungus diseases are usually more prevalent in seasons of excessive and late rains. Their wide distribution last year and the heavy rainfall this season makes it probable that they will reappear. Prevention is possible by thoroughly spraying, at the right time, but they cannot be checked after they have become established on the tree.

Curl Leaf Spraying.—The curl leaf fungus causes the leaves of some varieties of peach trees, noticeably the Phillips cling, to curl and drop, weakening and injuring the tree. It is easily controlled, but the spraying must be directed against the smaller branches and fine brush, which must be well coated with the liquid.

San Jose Scale.—Pernicious scale (also called San Jose scale) is again to be found in many orchards and if not combatted, very soon kills deciduous fruit trees. Lime-sulphur will practically eradicate this scale; the trunk and main branches require the spray.

Lime-sulphur sprays are not recommended for brown apricot scale occurring on cherry, prune, apricot, plum and occasionally on peach trees; however, all deciduous trees are benefited by a thorough application of lime-sulphur while the trees are dormant.

What to Do if It Rains.—The occurrence of an unusual amount of rain after the blossoming period may make a third spraying necessary for

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peach blight. This condition existed last year. In this event, after the fruit is well set, Prof. Ralph E. Smith recommends the Bordeaux mixture composed of three pounds of quick lime, two pounds of bluestone and fifty gallons of water.

Spraying followed by rains within 24 hours should be repeated. The attention of almond growers is particularly called to the importance of spraying this season with lime-sulphur. Peach blight and twig borers caused severe damage to the trees and crop last year and a repetition of these troubles would cause the loss of thousands of dollars. Even if it was not possible to give the trees the fall treatment the orchard will be greatly benefited by a thorough spraying with lime-sulphur just before the trees bloom.

Nut Trees on Public Highways.

[Written for Pacific Rural Press by C. B. Lewis, Brusselville, Oregon.]

People in this country, living as we do under different surroundings and environments than do the Europeans, act differently and live differently, and generally in a way that we find most suitable.

The common people of Europe live not always as they would like to, but as they have to in a great many cases. We have more room, more freedom and enjoy more liberties than they ever have any thought of enjoying.

Here is the idea I wish to emphasize: Why not practice thrift right now and not wait till we are compelled to. Not an inch of ground is wasted in the nations of Western Europe; every available means is used to get the maximum returns per acre. They believe in natural beauty as much as we do, and they park their highways with shade trees, and every city has its park or city garden which they are very proud of. In the nut-bearing regions, they take advantage of this and plant nut trees of different sorts, and besides the shade a bounteous crop is produced every year. Reaping these harvests is one way they have in helping the poor, giving them nuts or food for their labor.

They have not much space to be given up to roads and highways, and even though the roads may be narrow, they are always kept in good condition. The nut trees, mostly walnuts, are planted about sixty to seventy-five feet apart alternately on each side of the road. This is a wonderful sight to behold and a profitable luxury as well.

Some one may say, "How can we protect those trees from harm and from thieves who steal nuts?" How do we keep anything from being stolen? If the laws are properly enforced, no one need have any fear from such cause.

Since this country is becoming deforested quite rapidly, we should take it upon ourselves to replenish the plantings as much as possible. Trees when grown to some size serve as windbreaks and it is thought affect the general weather conditions in a more or less degree, helping to keep a more even temperature.

I would like to have every homemaker consider this seriously and look about in your own locality and see what can be done. Couldn't you start the ball rolling by planting some, along one side or around the entire place? Think about it.

48TH FRUIT GROWERS' CONVENTION.

The next fruit growers' convention, the forty-eighth of an ancient and honorable series, will be held in connection with the National Orange Show, at San Bernardino on February 18 and 19. The following program shows how rich in practical interest is the offering:

Friday, Feb. 19, 9:30 a. m.—Opening exercises; Citrus Culture in Butte County, F. Mason; in Sacramento County, W. W. Hinsey; in Tulare County, Hobart Webster; Certain Phases of Pomelo Culture, A. D. Shamel, U. S. D. A.

Friday, 1:30 p. m.—Value of a Good Brand, C. C. Chapman; Valencia Orange, Byron Clarke; Citrus Culture in Mexico, Prof. D. L. Crawford, Pomona College; Why Citrus Growers Should Organize Clubs, V. V. LeRoy.

Friday, 7:30 p. m.: Scale Control of Citrus Trees, Prof. H. J. Quayle; Insects Injurious to the Citrus Tree, Prof. E. O. Essig; Bird Friends and Mammal Pests of the Citrus Grower, H. C. Bryant, State Fish and Game Commission.

Saturday, 9:30 a. m.—Lessons from the Past Year's Experience, C. C. Teague, Limoneira Company; Renewing of Old Trees, J. D. Culbertson; Discussion led by A. D. Shamel; Pruning Young Lemon Trees, W. H. Fleet; Discussion led by Mr. S. B. Hampton; Sources of Unnecessary Decay, R. L. Willits; Discussion led by G. W. Hosford.

Saturday, 1:30 p. m.—Formation of Nitrates in the Soil, Dr. W. P. Kelley, Citrus Experiment Station; Movement of Nitrates in the Soil, I. G. McBeth; Our Present Knowledge of Citrus Fertilization, Dr. H. J. Webber, Citrus Experiment Station.

Saturday, 7:30 p. m.—The Eight to One Test for Oranges, (speakers to be announced); Problems in Citrus Culture, G. Harold Powell, California Fruit Growers' Exchange; Rural Credit Systems, Marketing, Colonel Harris Weinstock, State Commission Market.

Apple Growers.—Special program for Apple Growers' meeting to be held at San Bernardino, February 19, 1916: 9:30 a. m., Pruning the Apple, J. B. Hundley; Spraying the Codling Moth, Geo. P. Weldon, Sacramento; Varieties of Apples for Southern California, Isaac Ford and K. R. Smoot. 1:30 p. m., Cultivation and Cover Crop, W. M. Mertz, Citrus Experiment Station; Packing and Marketing the Apple Crop, F. S. Jerome, Watsonville Apple Distributors.

Following is the February schedule for Glenn county farm bureau meetings: Feb. 7 and 8, Codora Farm Center, night meeting Tues., Feb. 8; February 9, Jacinto Farm Center, night meeting Wed., Feb. 9; February 10, night meeting at Orland Farm Center; February 10 and 11, Larkin Farm Center, night meeting Fri., Feb. 11. The monthly meeting of the Board of Directors will be held at the office of the Farm Adviser, at 10 a. m. on Saturday, February 5.

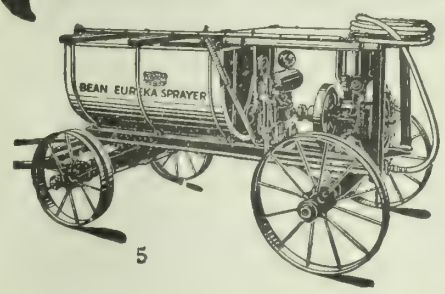
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Demonstrating Ammonium Sulphate Uses

[Written for Pacific Rural Press by William B. Parker, Farm Adviser of Ventura County.]

Ammonium sulphate is an efficient fertilizer and soil rectifier for certain conditions, as was shown by a demonstration plot on Mr. Allen Fraser's foothill orchard near Ventura. The Farm Adviser was requested to investigate the stunted condition of the apricot trees in one section of this orchard, and found that the twigs were stubby, that the leaves were reported to have been pale and the fruit small in size and amount.

An examination of the soil showed that the drainage was good, that there was no underlying plow sole, hard pan or gravel bed, and that the texture of the soil was extremely good. Since the recent investigations of the Division of Soil Chemistry and Bacteriology as reported in Bulletin No. 260 of the College of Agriculture and Agricultural Experiment Stations has shown that the form of nitrogen used in a fertilizer influences the rate and amount of nitrates that a soil can produce therefrom, it was decided on consultation with Prof. Lipman to work on the following basis. Large quantities of farm manure had been applied to the soil with no results. Therefore the trees were probably not obtaining enough available nitrogen because neither the manure nor soil nitrogen could become available readily enough. Sulphate of ammonium nitrogen has been shown to be highly available, in the experiments above noted on similar soil types. Taking these observations together, it was decided to use sulphate of ammonia in an attempt to improve the condition of Mr. Fraser's trees. This was done with the following results:

1. When the leaves came out they were a dark green in color.

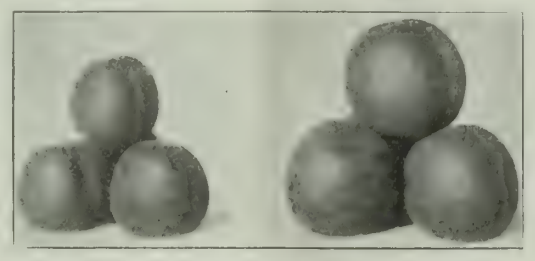
2. The new growth was very vigorous. In June the contrast between the four treated trees and the untreated trees was so marked that one could distinguish them as far as they could be seen.

3. The weight of ten average fruits from the treated trees was found to be one pound, five and a quarter ounces, or 15,097 fruits per ton. The weight of ten average fruits from the untreated trees was eleven ounces, or 29,090 fruits per ton. The difference between the ten fruits from the treated trees and the ten fruits from the untreated trees was 10½ ounces, which corresponds to 13,993 fruits per ton.

By comparing the weights of the pits of the fruits from the treated trees with those on the checked trees, it was found that while the treatment has resulted in an increase in the weight of the fruits, the per cent of pits had been decreased, the former having 7 per cent pits, while the latter had 7.9 per cent.

Stubby growth, yellow condition of the foliage and small fruit is not in all cases due to the condition above described, and before applying any amount of ammonium of sulphate to an orchard the grower should consult with the farm adviser, if there is one, or with the College of Agriculture of the University of California.

One of the best ways to determine the value of ammonium sulphate on a soil is to spread 3-5 pounds upon the feeding area of each of a half dozen trees. Let the trees do the deciding, as they did in Ventura county.



Result of a demonstration of the use of ammonium sulphate on certain soils in Ventura county. Left, average from an untreated plot; Right, average fruit from treated plot.

TEPARYS NOT SMALL WHITES.

To the Editor: I noted an article about Tepary beans in your last issue, and as I tried some on my place last year, and had fair success, I would like to ask if they are going to be a bean readily marketed?

Are they sold as "small whites"? I have never seen them quoted in the market list of "Beans." Are they bought by seed houses? I have none to sell this year but would plant several acres next year if there is a sure market. They made an average of nine sacks per acre on the small piece I seeded to them last year, which is better than hay. We had some very hot weather, but the Teparys stood it fine.—Geo. N. Bell. Napa.

[Nobody knows what the future market for these beans will be. They are not sold as "small whites," but rather under their own name, what few are handled. At this time they are being sold for one cent a pound less than "small whites" in this market.—Eds.]

BLACKEYES IN CORN.

[Written for Pacific Rural Press.]

"We planted blackeye peas and non-saccharine sorghums together at the same time," says J. E. Hawley of Madera county. "Then we irrigated just when the corn began to joint and again when the head was pushing, if necessary. We cut the corn heads off and put the grain in our granary for future use and the pigs were turned in on the blackeyed peas to harvest them. A movable panel fence was used, to give them a small field at a time. Any one who has not tried it would be surprised to see how long a piece would last a bunch of hogs and how well they look after they have been working for their board a month."

The latest figures from the Department of Agriculture show that on January 1, there were 1,550,000 beef cattle in California as compared to 1,480,000 a year ago and 1,546,000 five years ago. The value per head is given as $36,30 as compared with $39.30 a year ago and $23.50 five years ago.

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Protest Against Exaggerated Olive Yields

To the Editor: We have before us a clipping from a newspaper published in this State, wherein a letter is printed from a local olive "expert" to a city dweller on the subject of olives and their crops. It says, "We have in this section trees which are from six to eight years old, yielding six to eight tons of fruit per acre, with the majority fine fruit." It goes on to say that the district mentioned is the best known olive section in the world, etc., etc.

It should be proper for any citizen who is at all posted on olives and their crops to deny such an exaggerated and misleading statement. It seems especially proper for this association of olive growers to protest against the writing or publication of such mis-statements, on the ground that they not only injure the industry, but they injure the reputation of the whole State, and especially are apt to mislead and harm the innocent individual who reads and credits as a fact these impossible figures of crop returns.

An olive tree well cared for and in good soil and under proper climatic conditions may yield a half ton to the acre, the fifth season after planting. The seventh crop may be a ton to the acre. These figures are based on known results and upon the present planting per acre of young trees. They will vary, however, but there never was nor will be in California or elsewhere, a grove that yielded a crop even approaching that quoted above. Almost a record yield for planting on a large scale is reported by a company who employ the most efficient brains, combined with scientific methods. They report 2½ tons per acre for 6 year old trees, a wonderful yield, yet they plant twice the usual number of trees to the acre, with the intent of cutting out one-half when they are ten years old.

The olive industry is a fine one for the city man to embark into if he has money, brains and patience. It is no royal road to fortune and the trees require work, will and water, to quote Prof. Wickson and his "Three W's." "No one county is the best either and many are equally good." All these things, and many more may be accurately determined by any one interested, from the proper State authorities; but let us frown down such idle statements as the "olive expert" has lately and modestly made of his excellent community. It is no longer the fashion to say such things.

R. L. Underhill,
Secretary California Ripe Olive Association.

YELLOW FOXTAIL ON OVERFLOWED LANDS.

To the Editor: I have some low overflow land that I irrigate for summer pasture and the last year I have noticed a grass that commences with a flat, reddish stalk. Its tendency is to lie on the ground till the seed stalks come out when the growth is more upright. These stalks are round and grow about two feet high. The seed grows in a tassel that greatly resembles the top of a corn stalk, but much smaller, being only about three inches in length and breadth. The seed shells very easily and the plant spreads very rapidly.

It grows in water, but is much more leafy if only irrigated. It never comes up till after the danger of flood has gone and the ground warms, grows all summer till frost, which kills it. Has this plant any food value and if I allow it to spread, will I develop an asset or a liability?—W. W. M., Dixon.

[Answered by Professor H. M. Hall, University of California.]

The grass is Yellow Foxtail (Setaria glauca). This very troublesome weed of the Mediterranean region, and well-known in the eastern States, is becoming much too common in California, where it is a serious menace to alfalfa fields, especially where for any reason the alfalfa is not in a thriving condition. It is very desirable therefore that the plant be exterminated wherever it appears. Since it is an annual this would seem to be merely a matter of preventing it from setting seed; but the seeds are produced in such abundance that the eradication of the plant is often a very difficult matter. Since I have no first-hand knowledge on the subject, I quote as follows from Professor Pammel's Weed Flora of Iowa (Iowa Geological Survey Bulletin No. 4):

Extermination.—It is not generally recognized, but it is probably true, that more money is spent in the extermination of foxtail than of any other class of weeds we have in the State of Iowa, yet they are all easily destroyed. One of the best and most effective methods of destroying the foxtail is by plowing the small grain field as soon as the grain is removed. If this is not done a large amount of seed is produced. After this plowing the small grain field should be disked and harrowed in the spring and then planted at least four or five times. This method should prove effective for the destruction of foxtail and pigeon grass.

The plant here discussed should not be confused with the various species of Barley-grass (Hordeum murinum, etc.), which are commonly called Foxtail in California. The true Foxtail differs from the Barley-grass in its much more slender habit and narrower, cylindrical flower-clusters.]

A thorough canvass will be made and meetings held in practically every raisin-growing district in the State during the coming month in an effort to secure new members for the California Associated Raisin Company.

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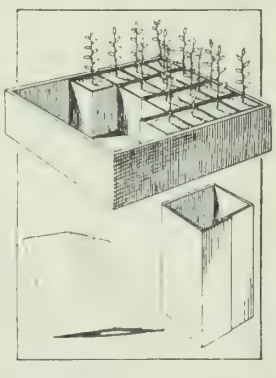
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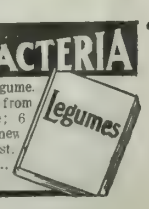
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Col. Irish Rises for the 'Human Equation.'

[A Reply to Col. Weinstock's letter in our last issue.]

To the Editor: We began a discussion of official branding, routing, storing and borrowing money on farm products, all to be a government function, administered by a political commission, part of a political machine.

I had already written Col. Weinstock's office a letter intended to turn his attention from bottle feeding the producer, to the consumer's part in the exchange of farm products. I thought to impress him with the fact that the producer cannot reform the habits of the consumer, and that those habits have caused the failure of all large attempts, in our large cities, to bring producer and consumer together in a public market. The phone is too handy and the distinction of having the goods delivered is too highly valued.

Now, if Col. Weinstock insist upon using what I have said about the consumer as an argument in favor of paternalism, by which the State will take the most important part of the producer's business out of his hands, and every year make him more ignorant and less independent and effective than he is now, so be it.

He may brand the farmer's products with the state seal until it stands out on every sack and box as plainly as the stigmata on the palms of Christ; he may route, store and borrow money on the goods, and what will it all have to do with pulling the consumer away from the telephone, or stopping the retailer from paying and charging a price that will pay him the cost of delivery and interest on the investment in his delivery plant?

Now, pausing long enough to beg of Colonel Weinstock to omit personalities, complimentary or otherwise, and to remind him that his opinion of my mentality has nothing to do with the case, permit me to repeat the statement that the farmers of this State have shown themselves entirely capable of co-operation and routing and selling many of our more important products.

To this Col. Weinstock opposes the statement that only 62 per cent of the citrus growers are in co-operation and their wisdom is often overcome by the foolishness of the 38 per cent of independents.

Granted; but when Col. Weinstock, for the State, becomes the 62 per cent, and handles the State's branding iron and stencil, routes, stores and borrows money on the goods, what is he going to do with the 38 per cent of independents? The first principle of paternalism is that a law can do everything. Does Papa Weinstock, the citrus Santa Claus, propose to make it a crime for the 38 per cent of citrus growers to attend to their own business, and when he gets them safely in jail, add their product to his pack?

Again, opposing voluntary co-operation, Col. Weinstock finds "the human equation" in the way, with "rivalries, jealousies and lack of human confidence."

Please show me where the human equation is not. It is as much in the dry goods business, yes, and in the wet goods, and groceries, in legislation, political machines, and the churches, as amongst the producers.

Col. Weinstock seems to think that he has a mission to smite the human equation in the farmer and cancel it out, and substitute for it the Weinstock equation.

I beg to appear as attorney for the human equation. Paternalism in government is out gunning for it. But in that human equation is the quality that makes states and defends their sovereignty. Within it is that initiative which has brought 62 per cent of the citrus growers into co-operation, and, if not destroyed, it will so show forth the benefits of co-operation as to bring every outsider in. The same is true of all forms of production that can be made the object of co-operative usefulness. Old Mother Experience is still teaching school, and makes stalwarts out of men by hard knocks.

Col. Weinstock is undoubtedly benevolent. But would he want the State as an Overlord in his business? He has bad years and good; years when he could weep into one of his stock handkerchiefs, and fit it for a fire sale.

Does he in such melancholy moments "think it about time, for the welfare of the State, that the State took a hand in the situation," of the dry goods trade?

He is highly cultivated. His head is well stored with knowledge. Is there room in it for one more idea? If so it is this: let him admit to the bright company in his brain, the knowledge that the farmer is a business man like himself, and just as wise in his business as he, just as capable of managing it, and just as trustful of the human equation.

The farmer does not care to be treated as a mendicant, a weakling and a dependent.

The theory that the State should protect the unwise against his folly, the unskillful against his inapiness, and to do this take from all men of a class, or common occupation, their independent control of their affairs, may for a time produce larger profits, but in the long run it will produce smaller men, for the more the State does for the people the less they will do for themselves.

Jno. P. Irish.

RAISING A BIG CROP OF BEANS.

[Written for Pacific Rural Press.]

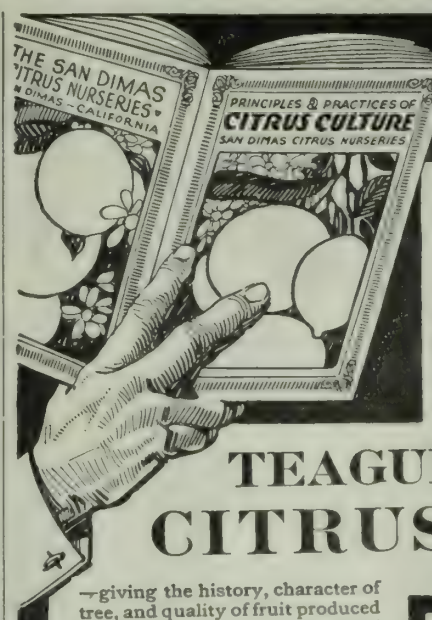
An average of $78.90 per acre from 20 acres of Blackeye beans, while unusual, is what Dr. Cross of Manteca, San Joaquin county, secured last year.

The yield on this land was 28½ sacks of 80 pounds each per acre and the price received was $3.50 a hundred.

The land was a sandy loam and was well plowed and harrowed early in the spring. Planting was done with a planter May 26, the rows being 32 inches apart and the seed dropped every three or four inches. The field was hoed once to kill the big weeds in the rows and cultivated three times during the summer. The beans were harvested the last of October, the vines being cut beneath the surface with knives attached to a sled. They were then put into small cocks and allowed to cure for two weeks, after which they were rolled with a large roller.

Dr. Cross thinks it important to let them stay in the cock to avoid an excess of green beans and prefers rolling to thrashing as he gets less cracked beans in this way. Later they are run through a fan mill for cleaning.

Besides the yield of beans the straw is valuable, either as a cattle feed or for fertilizer. When stockmen will not pay a sufficient price Dr. Cross spreads the straw over the field and plows it under for fertilization purposes.



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Thomson Navel — Golden Buckeye Navel
Golden Nugget Navel — Navelencia
Mediterranean Sweet — Ruby Blood
Sweet Seville — Paper Rind St. Michael

MANDARIN ORANGES
Dancy Tangerine — King Mandarin
Willow-Leaved Mandarin — Satsuma--Oonshiu

COMMERCIAL LEMONS
Eureka — Villa Franca — Lisbon

STANDARD LIMES
Mexican — Tahiti

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Marsh Seedless — Imperial — Triumph

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Bouquet des Fleurs — Variegated Lemon
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Peaches Perhaps Too Thrifty.

To the Editor: A peach orchard (clings and freestones) of 20 acres stands in soil composed of fine silt and river-washed pebbles, upon a terrace or bench bordering the San Joaquin river. This deposit is about 12 feet deep and is underlaid by a stratum of chalky, old, volcanic ash, containing some fine pumice stone. This stratum, where it is exposed on the immediate river bank, is from 12 to 18 inches thick, and about the level of winter high-water mark. Beneath this occurs other more or less porous river deposits. Water in the house well, on orchard level, stands at about 20 feet from surface.

This orchard, now in its eighth year, makes a vigorous growth; the soil seems to furnish abundant nutriment; but there has never been a good average crop gathered from it. The tract is level; and is generally irrigated 3 or 4 times a season. Water is in sufficient supply for good wetting.

Why does the crop fall short? Because of too high living, or too deep soil—affording rapid drainage—or improper pruning? It has been suggested by one peach grower that less severe winter topping, or very little at all, this winter would stimulate the setting of fruit buds for next year's crop; but I am not offering suggestions. I wish the editor to do that.

There are 20 acres of Malaga vines,—same age as peach orchard,—contiguous to orchard and in exactly the same soil. The vines are apparently thrifty and strong, and are expected to turn off 80 to 100 tons of green grapes this season.—W. L. A., Fresno.

[If your peach-growing adviser has seen the trees and the way they have been pruned he certainly has the advantage of us in making a guess and you probably cannot do better than follow his advice. We would add that one irrigation rather late in the summer ought to be enough to carry the trees through on such deep soil even if somewhat leachy. We should prune less and irrigate less and watch the trees. The soil surely seems all right by the way the peaches grow and the grapes bear.—Editor.]

MAKING GRAPE VINES BEAR.

To the Editor: In your issue of December 25 Mrs. M. L. W. of Occidental asks about Rose of Peru vines which do not bear fruit. I would say that there are many things to be considered in connection with making an old vine produce a crop. First, it is very hard to state reasons without seeing the vines. Mrs. M. L. W. states that her vines are very strong and vigorous. In that case, I would conclude that she will not succeed in producing a crop until she forces the vines to develop fruit buds. There are a few fruit buds already developed and she should know the difference between a fruit producing bud, and non-producing, and then she could begin to make her vines produce.

If Mrs. M. L. W. will plow say about April 10th (that is after the vines have made a start) about 10 to 12 in. deep, and let the ground lie without further work except to keep the weeds from covering up the vines, when the vines have made a growth of from 3 to 6 inches in length just take out the end of the shoot which has fruit buds; and if there are not any fruit shoots to amount to anything, take out from 30 to 50 per cent of the shoots, and pinch out the ends of all that remain. This will check the vigorous growth by late pruning (March 10th) and neglect of cultivation, and by forcing the new shoots to put out laterals next to the base of new growth will force the vine to develop fruit buds; also to produce a second crop of grapes this season.

It is possible to make even the Thompson Seedless and Sultana vines to develop fruit buds on all renewal spurs. I find many vineyards that are failing to produce fruit, will under the system of pruning one-year-old wood (what is termed a sucker or wood shoot), produce grapes the following year if it is forced to develop fruit buds. There is no difference where we get or leave the spurs (providing the right buds have been developed), but we must learn first the difference in buds and, next, how to produce the fruit buds where we want them.

If Mrs. M. L. W. will follow my system, within three years her vines will be producing from 10 to 15 tons per acre. Make the start this season, and improve each year until the vines are brought up to a standard.

Frank Henry.

Fresno, Route 7, Box 78.

WINTER ASPECTS OF CURL LEAF.

To the Editor: Enclosed please find blackened leaves and blackened, distorted twigs from one of my peach trees Is it a disease which must be looked after?—K., San Francisco.

[Answered by Prof. W. T. Horne, University of California.]

[The specimens are affected with curl leaf disease. The evident reason why you have not recognized this is that in this case the disease has developed to an unusual extent on the twigs, which the curl leaf causes to puff up and be soft and fleshy early in the season, but which now are dry and turned black. Also some of the leaves which normally fall off from curl leaf shoots are still attached.

The disease is not, as you suppose, a local one in the orchard, but can be expected to attack all of the trees unless suitable treatment is applied for prevention.

I do not think that pruning will be liable to help a great deal in this case, although it would be well to clip out such twigs as those which you have sent, for they cannot return to normal growth.

The treatment for curl leaf, as it is probably known to you, consists in spraying just before the buds open, with Bordeaux mixture or lime-sulphur solution. This should effectively prevent the curl leaf in all the peach-growing sections of California , although there are districts from which we hear that one treatment has not been entirely successful. Any treatment made after the blossoms open and leaves commence to appear must be with some very safe materials, on account of the tenderness of the trees, and it is probable that it will not be practicable to undertake anything more than the one spraying.]

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Highest price paid in San Francisco, Los Angeles and New York for our nuts.

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Correct in every detail. No trouble. Cheaper water. Perfect satisfaction. 3 Irrigation Booklets free. Luitwieler Pump Eng. Co., 713 N. Main St., Los Angeles

What Shall the Information Bureau Do?

[Written for Pacific Rural Press by Santa Clara County Correspondent.]

Great are the possibilities of the prune and apricot growers' information bureau, whose formation was authorized at the growers' meeting held in San Jose on Jan. 19. To realize these potentialities, the action of the State central committee must be wise, united, and comprehensive. The committee must build not only for the present season but for the years to come. The writer believes, in common with other growers with whom he has discussed the matter, that the glorious vision portrayed by Col. Weinstock is a thing the realization of which lies considerably in the future. How far in the future depends largely on the length of time it will take to knit a strong, pliable, well-wrought fabric from the differing, often warring, elements that make up the producing end of the California prune and apricot industry. For the initial steps in this creative process the prune and apricot growers' information bureau is well fitted.

One of the first duties of the newly apopinted State central committee, working through its executive secretary, is the cataloging and classifying of every dried fruit and apricot producer in the State. The securing of this information and the soliciting of membership in the bureau may be done at the same time. In each fruit-growing election precinct, school district, or other small unit of area or political subdivision the bureau should secure the services of an honest, competent and efficient assistant whose duty it would be to interview every grower in his district. From each grower he should ascertain his bearing and non-bearing acreage; his last year's production; whether he will need to borrow money to make his crop; if he does require money, how much and when. An earnest attempt should be made to secure each grower as a member in the bureau by having him pay his assessment in full. If payment in full is impossible the grower should contribute what he is able to with the understanding that he is to have no active hand in the selection of the State central committee men and in the conduct of the other activities of the bureau. He would, however, later be entitled to receive such market and crop information as the bureau might collect. This individual promotion work might well be supplemented by growers' meetings in the different sections at which the purposes of the bureau could be explained and endorsements of its work be secured. Through proper organization the desired field information would be obtained in a comparatively short time, as would also a good membership in the bureau. While the field work was going on the central office of the bureau would also be getting in touch with sources of market information, both foreign and domestic, and so far as possible with those who might later supply foreign crop information.

With a membership that would probably comprise at least 60 per cent of the prune and apricot growers of the State, and with a list of all the other growers at its disposal, it would be comparatively easy for the bureau to hold a plebiscite, or election, on any question of policy affecting the industry. For example, the questions concerning Col. Weinstock's revolutionary ideas could be thoroughly discussed in Grange, Farmers' Union, Improvement Club or wherever growers congregate in California, and after a widespread educational campign of this or similar nature has been conducted and completed the question of so organizing as to put into practice the marketing ideas of the State Market Commission Director could easily be placed before the grower and a decisive answer made. For the present the opinion of those who may best be listened to is, that so far as the prune and apricot growers are concerned, it is advisable to market this year in the old way. Let the ideas of Col. Weinstock meet the tests of time and thorough consideration and, if deemed advisable, let the 1917 crop and those of a series of subsequent years be held mainly here in California and supplied to the markets only as needed, and then in a scientific manner.

Summing up, the writer believes it desirable to see the organization of the information bureau perfected. Prune and apricot growers will then have at their command a machine that is capable of expressing their will and desires, concerning any political or economic question pertaining to the industry.

RICE HULLS DANGEROUS.

To the Editor: In your issue of June 29, you refer to the "By-Products of Rice for Stock Feed." I do not think you made it strong enough regarding the harmful effects of feeding rice hulls. These hulls splinter and these splinters get into the gums and roofs of the mouth and cause a very serious congestion, making eating almost impossible. I have had experience on this subject in the Texas rice fields and no one ever attempted to sell them as feed there.

Rice bran is good, if sweet and fresh, but is hard to get at a price worth while as the rice polish is much more nutritious and at double the price of bran is considered the cheaper.

Rice polish is a splendid summer feed for sows and young pigs as it is not at all heating, though strengthening and fattening. It should be fed as a slop in conjunction with other feeds.—G. Frank Rossire, Porterville.

[We understand that the rice mills in California are taking pains to see that none of the hulls are mixed with the rice bran or polish as it is largely through such practice that rice by-products have come into bad repute in the southern rice-growing states. The only use that California rice mills are advocating for hulls, is in packing goods for distant shipping, as they are said to be practically fire proof.—Editors.]

J. H. Courtney of Modesto, the local representative of the California Peach Growers, reports that the peach growers of Stanislaus county are backing up the Association splendidly and it is his opinion that the greater part of the crop will be handled by them.

TREES

Order Now

It makes no difference to us whether you contemplate planting a large commercial orchard or your home grounds. With our complete assortment of stock grown under the most favorable conditions, we are prepared to give the very best of attention to all those who favor us with their orders.

The splendid rains have made conditions ideal for planting and this looks like an enormous year. Better send us your order now to make sure of getting what you want to plant.

Walnuts

California is the only state in the Union in which walnut culture has been carried on on a commercial scale. Now that French types of walnuts have been introduced, many localities in which walnut culture did not seem to give any promise a few years ago are becoming walnut centers.

For years we have been walnut headquarters. Our magnificent stock of Franquette in the Vrooman strain, together with such varieties as Mayette, Eureka, Placentia Perfection, etc., offers the planter an opportunity to secure the finest trees at reasonable prices. We advise planting grafted trees only, and will make special inducements to commercial planters. Write us for quotations.



As nearly everyone knows, the Calimyrna Fig is the celebrated fig of commerce introduced and grown by us successfully. It leads all others for shipping, table and drying purposes. The demand is exceeding our most sanguine expectations.

We can also supply White Adriatic, Mission and other leading varieties. Write us for quotations and suggestions.



We have specialized on ornamentals for a great many years. Our stock is adapted to California conditions and is more diversified than that of others.

Our landscape department will gladly assist you in the laying out of your grounds and the selection of varieties.

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GEO C. ROEDING: PRES. AND MGR.

Box 18 Fresno, California

FRUIT GROWING IN IMPERIAL VALLEY.

(Continued from page 153.)

Winter Bartletts. — The 20-acre winter Bartlett orchard in the southern part of the county has proved a big money-maker; and many young orchards have been started from its wood, including 40 acres not yet in bearing, planted by the owner of the old 20 acres. But consideration is needed of the facts that the fruit as grown at present does not keep commercially much into the new year; it is rough and unattractive in appearance, is oversize for marketing, often ripens and rots on one side before the other is soft enough to eat, is stringy and coarse. With all that, however, it has a delightful flavor and juiciness, and is the only late deciduous fruit in that Valley.

Early Fruits Need "Soft" Soil.— For early fruits and dates, only the "soft," well-drained, early-warming, sandy soil of the Valley is suitable. W. E. Packard of the University Experiment Station at Meloland estimates about 25,000 of the acres now under irrigation as suitable for fruit.

Any deciduous fruit except figs that does not come early enough to beat that from the northern districts to market is acknowledged to be destined to failure. The hope of Imperial Valley fruit lies in its superior sweetness and earliness. The "hard" lands do not produce such fruit, though in many places the trees are doing finely.

Fruits Discarded.—Among deciduous fruits early tried out and discarded are cherries, peaches, plums, prunes, apples, pears, grapes for raisins, nuts, and most small fruits. Many of these, according to Horticultural Commissioner F. W. Waite, have leaves which are too porous to endure the summer heat. Certain it is that the trees have not lived long, did not develop fruit buds successfully in the hot, excessive dry atmosphere, and the fruits in most cases have been fibrous and lacked flavor. A few Muscat and Thompson grapes are made into raisins by watching carefully to roll or stack the trays before the fruit is dried too hard, but even these have failed to arouse enthusiasm.

Commercial Deciduous Fruits.— Deciduous fruits generally recognized as adapted to the soft lands of the Valley are apricots if rightly cared for, figs, and most important, table grapes.

Newcastle, Blenheim and Royal are the varieties grown, the latter two being a little later in ripening and a little larger. Such, which do not get onto the market early enough, are dried in a small way for local use. Practically all of the many apricot orchards scattered about the valley show weazened, dried-up fruit buds and discouraged new wood. At least two orchards, however, have plenty of new growth and plump buds. This is due to better care and more thorough watering, according to the successful ones, who prove the adaptability of the apricot to the valley.

Figs are almost omnipresent, mostly as roadside or home orchard trees, though the many trees of all varieties that have long been bearing prove the fig to be especially adapted. The wasps necessary to pollenize the Smyrna variety are more prolific and mature sooner in this dry, hot climate, so that as many as seven generations a year are available for all crops of the Smyrnas.

Early table grapes seem the fruit most universally cultivated in considerable areas, being grown principally for shipment to Eastern markets. They color and sugar better and are the earliest in the State. Thompson Seedless are coming to be recognized as the best commercial grape, though the ordinary Spanish Malaga occupies more acres now. The Government maintains an Experiment Station with 215 varieties of grapes near Brawley, and from this there are about to be introduced a few new table varieties which show more alkali resistance along with other and better points, such as color and shipping quality. Thompsons ripen earlier and unless picked at he earliest lawful stage of maturity, are likely to shatter badly in shipment. Persian varieties, though usually very shy bearers, are generally fair money makers, the berries being well colored, sugared, and large sized earlier than Thompson Seedless.

Birch MacQuiddy of Contra Costa county is one of the few who are successful in growing mushrooms for the city markets. His farm comprises a piece of ground 20 by 65 feet in dimensions and the proposition looks so good to him that he will enlarge it this year.

Heavy shipments of potatoes have been made the past two weeks to southern California from Stockton.





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For Orchard and Vineyard

Practical—work with any standard tractor. One-man outfits—controlled by man on the tractor.

No levers—one reason why these plows work so successfully. Plows leveled and depth regulated by screw device. Can be run close to trees and vines without injuring branches.

High and Level Lift—Pull the rope and all bottoms raise high and level. Another pull lets them down.

Plows raised in fourteen inches ground travel. Make square headlands.

All bottoms raise high like a double bail, high lift horse plow. You know from experience what this means. Plows do not clog or gather trash on the turn.

Extra wide and semi-floating front truck.

Equipped with either three or four famous John Deere 12-inch bottoms with Quick Detachable Shares—the shares that can be taken off and put on in one-fifth the time it takes to change bolted shares.

Write us for free booklets telling all about John Deere Light Tractor Plows for orchard and vineyard work, or Light Tractor Plows for regular field work—the plows with Quick Detachable Shares, high and level lift.



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For Field or Orchard

MADE especially for use in the West. Work successfully in every soil where a disc plow should be used.

Plow anywhere from five to twelve inches deep.

One-man outfits—controlled by man on the tractor. Work with any standard tractor.

Can be used either for field or orchard work simply by changing the land axle.

All levers down close to plow when at work—plow can be operated close to trees and under limbs without injuring them.

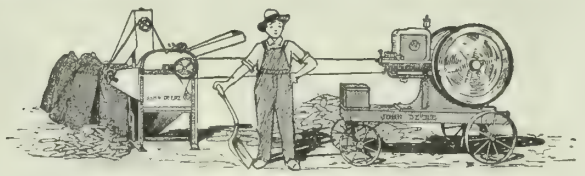
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Twenty-four or twenty-six-inch discs with chilled metal bearings—constructed so that bearings do not drag along wall of furrow when plowing deep.

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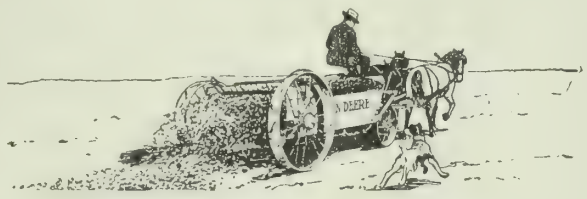
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Easily started; perfect speed control (speed can be varied 40 per cent without stopping engine). Complies with insurance regulations. Hopper cooled—a simple, efficient system that does not require long pipes and numerous fittings.

High grade throughout. Inspect the extra guard ring over piston pin to prevent possibility of scoring cylinder. Ask about the "R & V" oscillating magneto. Write for free booklet.



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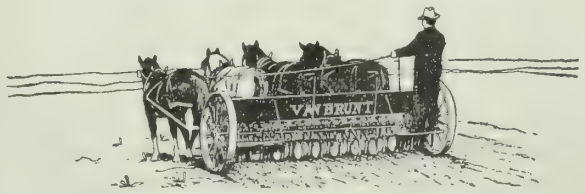
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John Deere, Moline, Illinois

Mechanical Power on the Farm.

[Written for Pacific Rural Press.]

EXPERIENCE WITH POWER FOR SAWING, GRINDING, ETC.

To the Editor: In reply to R. E. Smith, Bishop, as to "What Size Engine," will volunteer my experience. I use a Fairbanks-Morse No. 1 corn and cob mill, and a wood saw with a F.-M. 2 h.p. engine. This engine is ample for a sheller or grinder with flywheels if the latter is not crowded and handles the wood saw very easily, cutting apple limbs up to 8 or 9 inches without any trouble, but it is largely a matter of flywheel weight, speed and size of saw. My first outfit was without fly-wheel, and the engine could hardly pull through a 3-inch piece without pulling down. Next outfit was equipped with a 22-inch saw and a 100-pound flywheel, and with the 2 h. p. engine it will keep three men on the jump to keep it going and we have cut limbs up to 11 inches in diameter and 10 or 11 cords a day. However, use as small a saw as you can for the size of wood you wish to cut, since a small increase in diameter of saw requires a large increase in engine capacity. I use an aermotor pumping engine to run a 1900 washing machine with wringer, but think you will find that grindstone requires more power than washer, especially if you are grinding a sickle or the like. A big engine is more comfortable to work with as it makes things move faster, though of course is not economical on a light load when you compare time saved with extra gasoline used by the larger engine. Permit me to state that a cheap substitute for new steel shafting is 1-inch pipe—use hard wood bearings, and smooth bearing surface of pipe with a file. Get split wood pulleys and your outfit hasn't cost much. W. L. H.

Watsonville, Cal.

RIVER EATS DIRT.

The Santa Ynez river has eaten away about 50 acres of fine alluvial farm soil 30 to 50 feet deep on one of the ranches under direction of E. C. Tallant of Santa Barbara county. During the past 10 years $20,000 has been spent to stop the damage, but nothing has availed. A bulkhead was put in, piling driven 20 feet deep, and cables held them, but a high water aided by the quick sand of the river bed, and the drift wood, broke off the piling where they entered solid ground. The current hits one bluff and is deflected against another alluvial bluff not far below, at right angles. It is the latter that has suffered in spite of all that could be done. Now a company has, under contract, "no cure no pay," put in current deflectors along the crumbling bank—20 of them about 100 feet apart, and no damage had been done up to Jan. 7. These deflectors are V shaped, built to stick their noses into the current, deflect it, and create a comparatively still water behind them in which sediment collects and builds up the bank that was formerly eaten away.

ENGINE WITHOUT BATTERIES AND WOOD SAWING.

In a letter to this office, A. A. Denny of Palermo comments on our recent article about starting a gas engine direct from the magneto in this manner:

"I have a two horse power Stover engine which starts direct from a Hendricks magneto. The magneto is coupled by a beveled leather friction wheel, direct to the face of the engine fly wheel. Two or three strokes or turns of the crank shaft will create an explosion when the engine is not loaded or fastened to a force pump, and five to ten turns of the crank shaft will insure the engine keeping up speed enough to maintain a steady fire till it has gained speed enough, by belt connection, to saw wood.

"The engine has the make and break spark system. I have used the magneto for six years with very little ignition trouble; before that I used batteries with all kinds of trouble.

"I would also state for the benefit of your subscriber enquiring about the efficiency of a two horse power engine to saw wood that an engine of that size of good standard make can saw 12 to 18 tiers (nor cords) of hard dry oak, two to 12 inches in diameter, per day with two men. It will take small wood as fast as one can feed it to the saw, but one cannot crowd the saw with the larger pieces and the saw must be kept in the best of order, with the front of the tooth filed on an exact line of a straight-edge drawn from the front of the saw tooth to back of the nut on the mandrel.

"The reason of this is that with a slight hook in the tooth, the saw is slightly inclined to feed itself, thereby causing unnecessary friction in feeding the saw which acts as a brake and wastes power."

SIZE OF RESERVOIR FOR 50 ACRES.

To the Editor: Please advise me as to the proper size of a reservoir for irrigating 50 acres of alfalfa land. It will be fed by a four-inch centrifugal pump. What is the best method to prevent seepage?—H. H. B., Millville.

[Answered by Prof. S. H. Beckett, University Farm, Davis.]

[You state that this will be supplied by a four-inch centrifugal pump and I am assuming that the discharge will be not more than 450 gallons per minute. With this discharge, assuming that in the irrigation you cover each acre to a depth of eight inches of water, approximately 17 days' continuous operation of the plant will be necessary, in order to cover the 50 acres.

In building a reservoir, where almost continuous pumping is necessary, it is advisable that it be built of such size that it will hold from 18 to 24 hours' continuous pumping. If the reservoir is used, your pump may be allowed to run all night and a part of the day before it will have to be emptied. If the size is figured to hold 18 hours' pumping, it will have to have a holding capacity of 1½ acre feet of water. It is estimated that a desirable depth is 6 feet. It will then be necessary that the reservoir have an average surface area of 10,890 square feet. On a side slope of one to one (that is, 45 degrees), your reservoir would then have a bottom dimension of 98 feet square and a top dimension of 110 feet square. This slope is presumably in





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heavy loam or clay soils. If you have a lighter soil it is advisable to increase the slope to 1½ to 1. This would give you a bottom dimension of 95 feet square and a top dimension of 113 feet square. Should you desire the reservoir to hold 24 hours' pumping, the holding capacity will have to be increased to two acre feet or 87,120 cu. ft.

The best method to use to prevent seepage is a concrete lining of at least two inches thick. In using this lining, however, you should be sure that the banks of the reservoir are thoroughly settled before the lining has been placed.]

LAND LEVELING.

[Written for Pacific Rural Press.]

"Here is S. S. White, the best land leveler of this part of Imperial Valley," said E. Gannon, who has a 200-acre ranch near Seeley. So we asked Mr. White how he does it.

"Just knock the bumps into the low places with a Fresno scraper, throw up border levees, and then finish the job.

"There will be hollows and high places, not very noticeable, but enough to drown or dry out your alfalfa and to make your cotton uneven.

"To get these leveled right, I nail a six-foot wood strip vertically to the partition in an orange box and put an adjustable crosspiece on it about 5½ feet from the ground, set the outfit at the edge of the field where I can sight across it from the field to the horizon. Then stand at a point some distance away, which has been cut down to the proper level of the field.

"If the crosspiece is at tne right height I can sight across it exactly to the horizon while standing straight. Then, in following the scraper, a glance across this stick will show whether to dig out a little or dump a little. When it gets down to fine work, flood the land. This will show up the high places and soften the clods so the scraper can take off as little as an inch, for whatever distance is needed.

"Where there is no level horizon, as in a valley surrounded by mountains, a second cross stick must take the place of the horizon, and the outfits moved to level each check. Even then, it will require estimate work for all points not in line with the sticks, but practice will make this easy."

FIXED WORN PISTON RINGS.

[Written for Pacific Rural Press.]

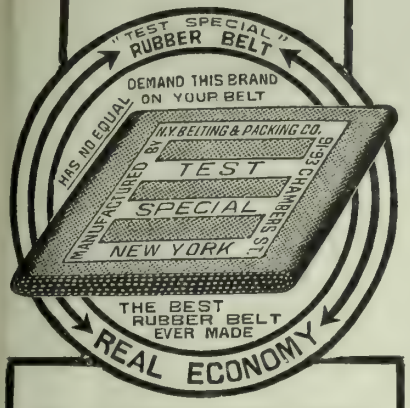
The piston rings and cylinder of the Samson gas engine of J. E. Dodds of Fresno county became worn so there was considerable loss of power. Instead of having new rings put on, he took the piston to the local agent who had some special wire to fix it with. The wire was hammered out to 1-32 to 1-16 of an inch thick and about ¼ inch wide. Each ring was opened enough so the wire could be pushed around under it. This expanded the rings so that it took nearly an hour to get the piston back into the cylinder, but it has not stuck, and has worked some months since, on the Samson irrigation pump.

DRAINING.

When you drain the water off from the radiator and motor, be sure to remove the plug in the bottom of the pipe leading from the radiator, and open the pet cocks on the pump and lower water manifold. If the water does not run out you must either remove them entirely or open up the hole by running a wire through the hole. Don't let it freeze up.

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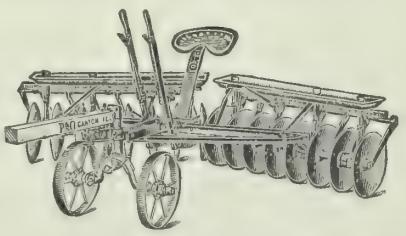
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STAR DISC HARROWS

Made in 4, 5, 6, 7, 8, 9 and 10 ft. sizes, with 16, 18 or 20 in. discs. Can furnish plain, cut-out or plow-cut discs. With or without weight boxes. Tandem Attachments, Tongue Trucks, Third Lever Attachments, Transport Trucks and Seeder Attachments furnished when ordered.



The steel frame is riveted and braced to the tongue in three places, affording great strength. Low hitch, with tongue and clevis in line of draft, avoiding neck weight. Hard maple oil-soaked bearings, cheaply replaced when worn out. A simple device locks scrapers against discs, away from discs or in position to be operated by foot levers. Each gang operated by its own lever and can be set at any desired angle. Heavy bumpers relieve the bearings of all end pressure. Will do efficient work in dead or back furrows.

A third lever attachment can be furnished which gives more penetrating power and a wide range of adjustments of depth. Highest quality steel discs, carefully sharpened and polished. Curved pull irons hold the harrow level at all angles. P & O Disc Harrows have been made for sixty years and are standard the country over. 'It's the Way We Build Them."

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PRUNE GROWERS GET STARTED.

The State Central Committee of the Prune and Apricot Growers Information Bureau held its first meeting Jan. 29 in the directors' room of the San Jose Chamber of Commerce. The meeting was called to order by J. H. Bone who was then chosen chairman of the committee. The State Market Commission Director's nomination of Dr. James B. Bullitt as a member of the S. C. C. was ratified.

George E. Merrill was elected executive secretary and treasurer of the Bureau.

An executive committee was appointed consisting of Chairman Bone, Dr. Bullitt, C. E. Warren, R. P. Van Orden and Sec. Merrill ex officio. In addition to other duties the executive committee is to perfect and report a plan of work and organization to the full committee at its next meeting on Feb. 12.

The use of capacious office rooms for the year was donated by the Farmers' Union in the Union Building, San Jose. Checks in substantial amounts were also donated by several San Jose merchants.

Within a few days the Bureau hopes to be equipped for business and to initiate an active campaign for market and crop information and membership.

General Agricultural Review.

CITRUS AND SEMI-TROPICAL.

Cloverdale will hold its 23rd Annual Citrus Fair from Feb. 18 to 22.

There is at present a bill before the House of Representatives providing for a one-cent-a-pound increase in tariff on oranges and lemons.

A reduction of $12.50 per car on all carloads of citrus fruit pre-cooled and afterwards initially iced between California points and the East, has been announced.

The California Fruit Growers' Exchange is now putting out 100,000 glass orange juice extractors in order to stimulate the orange trade by encouraging the use of orange juice as a drink.

It is risky to bud grapefruit, according to Herman Brusson of Whittier, because the shoots fruit so heavily before the union is strong enough to bear them through any considerable wind.

The Valencia crop from Tulare county is estimated at 1500 carloads this year, an increase of 300 cars over last year. If shipments come up to expectations, it will be the largest crop of that variety ever leaving Tulare county.

An organization known as the Strathmore Early Orange Association was recently established in the Strathmore section of Tulare county. A modern packing house will be erected during the summer, and the fruit marketed through the Mutual Orange Distributors. The following are the directors of the new association: W. M. Hilger, G. H. Collins, E. O. Shoemaker, F. J. Edwards, and E. B. Gould.

DECIDUOUS FRUITS.

The Mills Orchard Company will shortly plant 400 acres to prunes on their property at Hamilton.

C. C. Lester recently purchased the W. C. Stroud ranch of Gilroy, consisting of 30 acres of full-bearing prunes.

H. T. Harrold of San Jose is planting 60 acres to orchard near Modesto; forty will be planted to peaches and twenty to almonds and apricots.

The Directors of the California Peach Growers met Fresno bankers on Jan. 31 to discuss important questions in regard to financing the association.

A shipment of 3000 peach trees infested with the Eastern peach borer was recently destroyed in Ventura by Inspector Essig; it was from a nursery in Kansas consigned to a Ventura party.

The Libby, McNeill & Libby cannery at Selma is shipping to San Francisco the peach pits accumulated during the past season. These are used in the manufacture of by-products, and chiefly for making oil, which as sold as artificial oil of almonds.

OLIVES AND NUTS.

Plans are being made for the celebration of California Ripe Olive Day. Publicity headquarters will be maintained at Oroville and Los Angeles.

The presence of black scale has been found in some of the olive orchards in Placer county and County Horticultural Commissioner Turner has issued a warning to the growers.

A shipment of 1200 almond trees infected with nematod, an insect that causes root knot on young trees, was recently condemned by Horticultural Commissioner Stabler of Sutter county.

The Paso Robles Almond Association met recently and elected the following officers: Paul S. Brown, president; J. H. Van Wormer, secretary and treasurer; C. J. Trussler, delegate to the State convention; and G. A. Mehrhood, H. E. Brooks, and Fred Iverson, directors.

The California Almond Growers' Exchange have announced that delivery of the last lots of the 1915 crop is now being made. The past season's crop was the largest ever produced in California and it is estimated that the returns to the grower-members of the Exchange will be over $1,000,000.

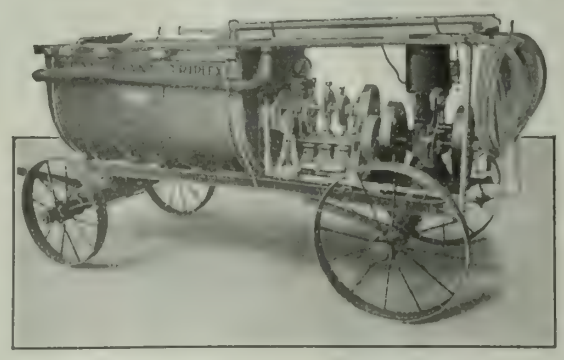
GRAPES AND SMALL FRUITS.

The Italian Vineyard Co. is planting 18,000 walnut trees among their 4000 acres of vines in the sand near Cucamonga. It is intended to interset the whole vineyard.

Only once in the thirteen years J. D. Conrad has been in Imperial Valley, has he noticed rain to speak of in October. This gives grapes a good chance to dry, and dates a good chance to ripen.

Muscat grapes do well in Imperial Valley, according to M. Manoogran, who ships some East every year for Arakelian Bros., besides drying some. They ripen about a week later than Malagas, about July 22. They have 60 acres of these varieties near Grape and 20 acres of Thompsons. The latter are best for the Valley, in his estimation.

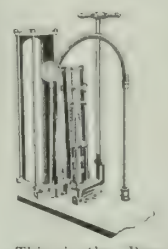
A meeting of raisin growers was recently held in Yuba City in behalf of the California Associated Raisin Company, which was addressed by Col. Weinstock and Jas. Madison, President of the Association. A resolution was adopted by the hundred growers present to affiliate with the Associated and to do all within their power to urge other producers to do the same.



The "BEAN" for Results

A spraying outfit may have all the other virtues you might possibly think of—but if it doesn't drive the spray material onto the trees at heavy pressure, and if it doesn't keep up uniform work—it's a failure, and your time and money are largely wasted. The **BEAN** gets results. The sturdy Novo Engine and the Matchless Bean Pump drive the material on at tremendous pressure—so that it reaches every crack and crevice—and does the work thoroughly and completely. You should become familiar with the

10 Big Distinctive Features



This is the Bean Magic, the only hand pump that can be continuously operated at 120 lbs. pressure by one man without exhaustion. Porcelain-lined Cylinders, Ball Valves, and Bean Quality all the way through.

that gives the Bean its prominence. You should know about Bean Porcelain-lined Cylinders, the Bean Pressure Regulator, the Pump without a Stuffing Box, Bean Underneath Suction, the Bean Re-filler, Bean Eccentrics, the Bean Rocking Bolster, Bean Direct-connected Engine and Pump, Bean Interchangeable Parts, and

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—the valves that cut sprayer troubles in half. Simply bell metal balls revolving on reversible and interchangeable brass seats. No threads to rust, corrode, or stick tight. Can be opened up entirely in less than 2 minutes without lowering the pressure, without stopping the engine, without drawing the liquid from the pump.

Check the Coupon. Write Your Name and Address on the Margin and Mail for Our New Catalog.

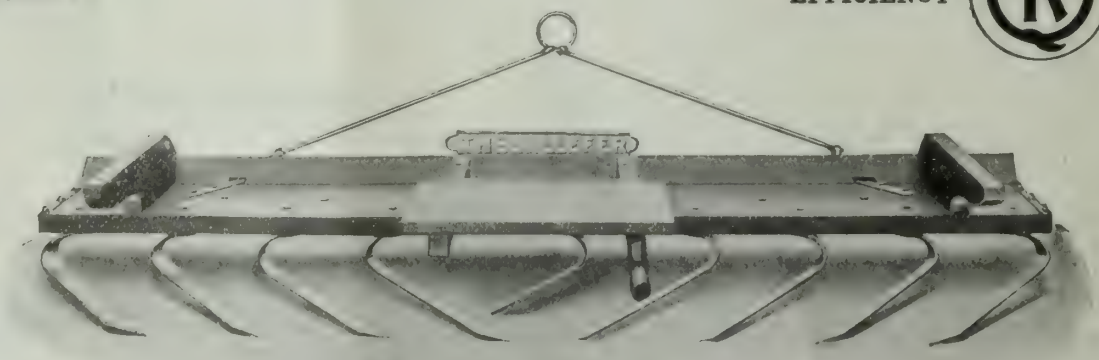
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The long continued rains will make the call for WEEDERS and MULCHERS very heavy during the next few weeks, and as there is a very limited amount of these tools on hand, it is advisable to get orders in early.

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KILLEFER EFFICIENCY



Clean Cut Weeder and Mulcher

It is just what the name implies, the most effective tool for keeping down the growth of weeds after rains or irrigation on orchard, bean, beet, or grain land. It does twice the work with the same team of any other tool for this purpose, and as the knives overlap each other it is impossible to miss anything in their course. Our patented knives are formed with a straight throat so that they wear uniformly from heel to point and are all stamped with our quality trade mark.

The orchardist will find this tool a valuable one for leveling down furrows and for preparing the ground for the cultivator. The large range of work makes it almost indispensable, and the extremely low price at which it is sold brings it within the reach of all. **Made in 4, 5, 6, 8, 10 and 12 foot sizes.**

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Will sell one-half or all at **bargain.** ADDRESS OWNER,

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If you are in the market for seed rice, buy the best.

Seed which is absolutely free from Water Grass, by official test, is what we have.

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Eucalyptus

Write for prices, stating quantity and variety wanted.

W. A. T. STRATTON,
Petaluma, Calif.

GRAIN AND FIELD CROPS.

It is estimated that between 700,000 and 800,000 sacks of lima beans remain unsold in California.

It is reported that over 2000 acres will be planted to cantaloupes in Turlock this year, being an increase of about 500 acres over last year.

The first few crates of cantaloupes from Imperial Valley last year were shipped May 14 to New York and sold at $50 per crate. Tom Saitow of Brawley was the grower.

An appeal has been made to the authorities of San Mateo county for relief from the swarms of seagulls that have been raiding the vegetable gardens since the recent storms.

A number of San Francisco capitalists have secured an option on 3000 acres of alkali land near Traver; and should the deal be consummated, it is expected that rice will be planted.

Owing to the difficulty in getting means of transportation to foreign markets, it is reported that approximately 12,000,000 bushels of 1915 wheat still remain unmarketed in the Pacific Northwest.

As a result of a recent investigation on the part of the California Development Board and the California Fish and Game Commission, it has been found that the wild ducks are not a menace to the rice industry as they feed only on the waste product.

It is expected that the largest acreage that has ever been planted will be put into grain on the west side of the San Joaquin this season. Owing to the many cold storms, a good deal of the grain is turning yellow in the sections where there is poor drainage.

The Sacramento Valley Rice Growers' Association has prepared an or- commissioners' authority to proceed in the campaign against water grass. The Board of Supervisors of each rice-growing county will be asked to adopt ordinances to this effect.

J. S. Wooten, who farms 1600 acres on the West side of the San Joaquin, reports that the largest acreage of summer fallow in a number of years will be put in this season when the weather permits. He has 500 acres yet to seed. The main crop there will be barley, owing to the fact that it will be too late to seed oats.

At the recent meeting of the Turlock Merchants and Growers' Corporation, the following officers were elected for the ensuing year: C. C. Carlson, president; A. A. Caldwell, vice-president; F. W. Hosmer, treasurer; and C. C. Carlson, David F. Lane, O. M. Mills, A. A. Caldwell, Manuel Furtado, W H. Lockwood, and D. W. Johnson, directors.

The Theo. Wolf Hop Co. of Sacramento recently made a contract with the lessee of a 120-acre hop ranch near Mayhews for the delivery of 80,000 pounds of hops in 1916, 60,000 in 1917, and 60,000 in 1918. The contract price was 11 cents a pound for the first 60,000 pounds of hops and 10 cents per pound for the amount over that each year.

MISCELLANEOUS.

A 2200-acre ranch is being operated by the State in Napa county for the purpose of supplying farm products to all the State institutions. The work on the ranch is done by honor prisoners from San Quentin.

An illustrated lecture on the selection and planting of shade trees was given at Ceres on Jan. 28 by Prof. John W. Gregg, of the division of landscape gardening and floriculture of the University of California.

A number of Glenn county ranchers have joined together in a campaign to plant shade trees along the highways of all the irrigated parts of the county during the next few months.

As a result of the meeting of the stockholders and directors of the Luther Burbank Company it was decided to throw the concern into liquidation rather than to attempt to refinance it.

The farm bureau meetings have been attracting much attention in Stanislaus county and have been well attended in spite of the stormy weather. This week Farm Adviser Connor has addressed three meetings at different points on the subject of "The Value of the Silo."

POWER FOR SILO CUTTER.

To the Editor: Am going to build a silo this year, and it being rather a hardship to rig completely to fill it, I thought maybe a Ford could be rigged up to run the cutter. Can you advise the most economical and practicable way to do this?—A. G. C., Turlock.

[Answered by Prof. J. B. Davidson, University Farm, Davis.]

[Ford automobiles have been used to operate power machines in many instances, but the writer is familiar with only one. In this case one of the rear wheels was jacked up and a belt run around the tire to a one-hole corn sheller. The outfit seemed to run quite satisfactorily. Data is not on hand to indicate how much power might be delivered from the rear wheels of a Ford car for power purposes. We would expect 7 or 8 h.p. to be available. The horsepower rating of the motor according to automobile standards is 22½ h.p., but it would not be practical to operate the motor at full speed and it would not deliver its full power to the rear driving wheels.

It is suggested that a good arrangement would consist in a jack to which pulleys might be run from both drivers. This jack would consist in a short piece of shafting carrying 3 pulleys; two to receive the power and one to deliver it to the ensilage cutter. A twelve-inch ensilage cutter will require from 6 to 9 h.p.

There is a device on the market for utilizing the power from an automobile. This consists in friction wheels onto which an automobile is backed.]

You will find many times that if the engine starts to miss fire it is caused from water, and you can stop it by operating the petcock in the bowl of the carburetor and draining off some of it.

Smudge Pots
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Frost Damage?
We have saved the crops in thousands of orchards.
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THE A. I. ROOT CO. 245 Mission Street, San Francisco, Cal.

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WESTERN MEAT COMPANY

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HUMUS FOR BACTERIA AVAILABLE.

[By Dr. C. B. Lipman, University of of California.]

While the necessary air, moisture, and temperature conditions are essentials to the development of soil bacteria and to their activities in behalf of the higher plants, they are merely the necessary conditions which make the humus a congenial home, laboratory, and source of energy for soil bacteria. Bacteria are dependent upon the humus supply, because in the heavier soils it tends to allow a better air supply and in the light soils, makes water retention greater. Bacteria depend upon the humus of the soil for carbohydrate material which some of them may use as a source of energy in order to fix nitrogen from the atmosphere. Bacteria depend upon the humus supply for part of their mineral food. They are dependent on it, because it regulates and varies the soil temperature, to their advantage, especially in light soils. Bacteria depend upon the humus supply because it contains largely the nitrogen supply of the soil which through their activities, and only through their activities, can be properly transformed into such compounds as plants are able to absorb. Therefore, the greatest of the practical relationships between soil management and soil bacteria is concerned with the humus.

We have very many light soils whose poor humus supply affects their water-holding power. We have very many heavy soils whose poor humus supply makes them run together, bake, and clod. All of these conditions reduce the bacteria in these respective soils. To improve these conditions we must maintain the humus supply. This we would probably do with greater ease but for the abnormally low humus supply. We must make use first of the materials which will give us the largest tonnage of organic matter which at the same time will decay rapidly enough; and yet will not only give back to the soil the nitrogen that it took out, but add to it the nitrogen which it obtained from the air. This necessitates the use of legumes for green manure crops or a combination of legumes with non-legumes.

We can certainly use to good advantage the vetch and wheat or oats and peas as cover crops so as to give us from the non-legumes a tonnage of material and from the legume crop considerable quantities of nitrogen from the air. For soils very poor in humus, in order that the bacterial activities may be properly encouraged, green manuring should be carried out every season. Even then we may only maintain comparatively low humus content in those soils, especially since some of these green manure crops are bound to be failures or partial failures in unfavorable seasons of rainfall, such as the past one has been. We know that the kind of organic matter which is used as a source of humus makes a large difference in the numbers, the kinds, and the activities of soil bacteria. Some of our investigations now in progress are bringing out striking facts which, however, are not in a complete enough state to report upon. We think, however, they will yield results which will modify to a considerable extent the

OLIVE

Mission, Manzanillo, Asc

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All varieties.

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GRAPE FRUIT
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LIMES
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KUMQUATS
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practice now in vogue with reference to the humus supply in soils.

PLACENTIA WALNUTS.

[By Dr. L. D. Batchelor, University Citrus Experiment Station.]

The Placentia variety is being planted to a great extent through the southern sections at the present time. It has the Santa Barbara Soft Shell type, and originated in Placentia, California. It is a vigorous growing variety, producing an erect, well-shaped tree which reaches a profitable bearing age fairly early. As a mature tree it is a medium producer but not exceptionally heavy. This variety is not resistant to walnut blight to any degree, as it becomes fully as badly diseased as the average seedling. The Placentia variety has very little merit for the badly blighted regions. The nuts are of medium size, smooth, but of only medium uniformity, as some trees produce quite a proportion of rather rough nuts. The shell is thin but strong, and only fairly well sealed, cracking quite badly during the process of harvesting. The kernel is light tan in color, fairly smooth, and well filled through the nut, mild flavor of medium quality, the harvest season is early. All things considered, this is generally looked upon as the best, thoroughly tried variety for the southern part of the State. It is not known to be particularly resistant to sunburn in the hot inland valleys and therefore the planting of the Placentia should be considered an experiment under such conditions.

WALNUT GRAFTING POINTERS.

[Written for Pacific Rural Press.]

As little exposed cut surface as possible after setting walnut scions is desired by H. R. Dakin of Santa Cruz county. To get all of the cut surface into the cleft, he used to cut a square shoulder deep enough so that the cambium would be in a straight line from shoulder to point. Then when it was placed right at the top, he could know its connection with the stock cambium at the point. The stock would be split slightly and wedged open after cutting a narrow cleft with a semi-circular harness knife to fit the scion. By splitting the stock, the scion could be placed tight without much driving. To drive a walnut scion hard is to risk loosening its bark and killing the scion. A little driving is desirable, however, and the sharp shoulder at the top of the cleft used to cut into the scion bark and loosen it. Cutting a square shoulder was quite a job, anyway. So now he begins the cut on the scion with a deep, sharp curve instead of a square shoulder, and the top edges of the cleft are also rounded off so they won't bruise the scion. Thus with a little care, the cambiums join all the way down and the scion is not bruised. This gives a better percentage.

At the end of the first year the grafts are thinned out, leaving only those on the upper or inside of the stock so they will have less tendency to break out. 1x2 sticks 8 to 12 feet long are nailed beside the new shoots to control their direction. The long first year's growth is too soft to stand sun and frost anyway, so is cut back to four feet and the succeeding new growth tied to the sticks for three years.

Free Library Service to Rural Schools.

[Written for Pacific Rural Press by J. L. Gillis, State Librarian.]

Recently I wrote of the county free library and its numerous ways of giving service to the people, no matter in what corner of the county they may live. Yet another phase of county library service remains to be described, one that rubs the Aladdin's lamp of book service for the children. The advice to "take them young" was never used for results more effectively by any institution than by the library. And one of the places to do this is in the school library. A child given a library habit is pretty sure to continue it in manhood, especially if the community does its share in providing the books for that child when he reaches manhood.

The school system recognized this —and gave it feeble expression— when it first established district school libraries and provided legally towards their support. But there was no thought-out plan, and consequently for the last 44 years the school libraries have been building up an unrelated mass of books and other library material, useless and extravagant.

This has not been the fault of either teacher or trustees, but of the system. Each school district has had a part of its money to set aside as a library fund—usually anywhere between 15 and 50 dollars. This has been spent for supplementary books and apparatus for the schools, and story books for both children and grown-ups. Every school in the county would buy much the same material. Once used it went dead on the shelf till needed next year—grown-up fiction sometimes going to sleep forever. As a result no one ever had anywhere near the library material needed or wished. And all this while the State of California was spending sometimes as much as $300,000 on this service. A clear case of getting nothing for something.

If the county free library could change all this, can any one have the temerity to talk about "taxes"! So successful has the county free library been in changing this condition from waste to efficiency that nowadays teachers who have taught where they have had the county free library service for their school will hesitate to go to teach in a county where the library has not been established.

This change is no miracle, but simply a sane application of business methods to school libraries. It is consolidation, but being co-operative does not come under the Sherman anti-trust law! Instead of each school's having a group of books, nearly all of which have outgrown their usefulness in the district and consequently represent just that much money bearing no interest on the investment, the county free library provides the schools with their library service, making them branches of a library system so complete in its co-operation that it reaches if necessary from the National Library at Washington clear through to the smallest district school library in the most remote mountain canyon.

In order to receive this service, the trustees of any high or elementary school district may transfer to the county free library their district school and library fund. Each school board decides this matter for itself. Spending the money, thus pooled, the county librarian is able to bring about many much-desired results: In the first place, the money being spent in bulk, much better prices are secured, and so the money goes farther; then a book expert is handling the business, and knowing books and prices well, can make careful purchases; then as the books are to travel, fewer copies are often needed than when each school owns for itself alone, for one copy will be used several times instead of going dead on the different shelves.

So far the points have been only for economy. Even if the plan went no further, it would have justified itself, since as good service would have been received, and much money saved. But now comes the spending of this saved money for a better service. Instead of each school's having only perhaps twenty-five dollars' worth of books,—did you ever stop to think that means perhaps only three dollars' worth for each grade? No wonder the children say even before the holidays, "I don't want any of those old books. I've read everything there"—instead, then, of this scarcity, the teacher receives at the beginning of the term a shipment of the books and other library material she needs for the first month or so. As she finishes with them, she sends them back and receives other shipments to take their place. All through the year the fresh material comes and the used material goes, the material needed indefinitely of course staying indefinitely; the material needed temporarily staying as long as needed, and then returning to headquarters to be cleaned, mended, and sent out to another district. Even the very first year of the county free library service to schools in the county, they are bound to receive more than their own money would have bought, and as each year accumulates a larger supply in the county free library, their service increases more and more, till after a few years teachers, superintendents and librarians alike say with satisfaction that the county free library is being able to give unlimited service,—that is, everything the teacher asks for in supplementary books, story books, maps, globes and other apparatus, and a building up of the permanent material, such as encyclopedia, dictionary, and other reference material.

In thirty-three counties which have adopted the county free library plan, over 500 districts have already taken advantage of this method of co-operating for school library service. Their satisfaction has been so great that other districts, advised by their county superintendents, are continually following the example, and bringing, each day, the time nearer when "all the children of all the people" will have as adequate library service as the State of California can give them.

Mario G. Monocal, president of Cuba, in May last bought a 210-acre ranch ten miles out of Havana and has fitted up a model poultry farm. He is experimenting with a number of breeds including White and Buff Leghorns, Rhode Island Reds, Buff Orpingtons, Langshans, and others, including a very thrifty Spanish Fowl called Prats. There is a poultry association in Cuba, the secretary and treasurer of which, Senor D. Noguer, owns a poultry farm at Puerta Blanca, where he has over 2000 fowls, mostly White Leghorns obtained from the United States.

A NEVADA POTATO YIELD WORTH WHILE.

To the Editor: After reading your article headed "Potatoes 24 Tons Per Acre" I thought you might be interested to hear how we are raising potatoes on alfalfa land in Nevada.

In the spring of 1914 I plowed up four and a half acres of old alfalfa and raised a fair crop of potatoes, with what I thought poor seed. From that crop I picked good seed and planted again in the same ground next year, and raised 45 tons of fine Burbanks without an eel worm or any other disease.

For the 1915 crop I plowed the ground in February, did six days' scraping to make it perfectly level, and the first of May I plowed again and harrowed. The 15th of May I put in my picked seed in rows three feet apart. One man did the dropping while I plowed the seed under, using a ten-inch plow. I irrigated to bring the plants up and then let them stand till the leaves were a dark green. After the second irrigation I irrigated them every 10 or 15 days.

I cultivated the field once and then ran a hiller through them so that the water would run through them smoothly. I used a small stream of water so as not to let the tops of the rows get wet and dug the crop with a big digger, October 10. Geo. B. Osborn.

Mason, Nevada.

VALUE OF CORN SILAGE.

To the Editor: I would like you to give the value of yellow corn silage per ton as compared with alfalfa hay, at $10.00 per ton, for dairy feed. Also, kindly give the number of tons of silage in the lower twenty feet of silo, which is thirty-six feet tall and fourteen feet wide. The lower twenty feet is very solid from pressure; the top has been fed out. —L. W. L., Turlock.

[Answered by Professor F. W. Woll, University Farm, Davis.]

[Corn silage can have no definite market value, as it must be consumed soon after being taken out of the silo, and is, moreover, too bulky to be hauled away for any distance. It has a similar feeding value as about one-third its weight of hay, however, so that with alfalfa hay worth ten dollars per ton, silage will be worth $3.00 or $3.50 per ton in the silo.

The late Professor F. H. King, to whom we are indebted for what definite knowledge is available regarding moist silage problems, showed that a cubic foot of corn silage will weigh from 20 to 60 pounds, according to the depth of the layer. It would not be much out of the way to assume that the silage in the lower 20 feet of a 36-foot silo would average about 50 pounds per cubic foot, and this would, therefore, contain around 80 to 85 tons of silage.]

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The San Francisco Bulletin says: "'California Garden Flowers' is the best book of its kind ever published. Prof. Wickson's book concerns flower-growing in this particular state, while the great majority of books are general in their scope and the information they contain is of little benefit to local readers. It is a thoroughly practical book for California gardeners, in which every phase of the subject is discussed in detail."

If you are particularly interested in bulb plants, or roses or lawns, soils, fertilizers, or if you have bacterial or insect troubles, "California Garden Flowers" will assist you. The book contains nearly 300 pages of closely printed text, besides numerous illustrations, is handsomely bound in cloth and will be sent postpaid for $1.50 per copy.

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Can Dairying be Made to Pay?

To the Editor: With first class cows selling for $75 a head (average 20 lbs. milk a day), alfalfa hay at $12 per ton, land that will average 15 tons silage corn to the acre and is worth $50 per acre for beans, and milk selling at $1.80 per cwt., will dairying pay? What is the cost per day to feed a cow?—Subscriber, San Luis Obispo.

[Answered by R. L. Adams, University of California, Berkeley.]

[No data is available for this State based upon careful, detailed investigation in the dairy costs, but the following will serve as a fair guide. It is based upon the submitted data, considering three hundred milking days per year.

Where corn—green, fodder or silage—and alfalfa are the available feeds, the cost will be about $3.00 per ton for corn, and in this case, $12.00 per ton for alfalfa, hence the total feed costs will be:

5½ tons of corn at $3.00...$16.50
3¾ tons of hay at $12.00.... 45.00

Total feed $61.50

making the daily feeds cost a little over 17 cents, when the yearly feeds average 30 pounds of corn and 20 pounds of alfalfa daily.

With cows yielding 20 pounds of milk for 300 days, 6,000 pounds of milk will be available annually. The cost of the various items, per cwt. of milk produced, will be:

Feed .....$1.03 per cwt.
Labor (32 per cow annually) ..... .54 "
Use of buildings and corrals ($7.00 per cow annually)..$12.00
Overhead (insurance, taxes, interest, and depreciation on cows at $75.00, use of equipment and incidentals, at $15.00 per cow annually).. .25

Total costs $1.94
Credit calf at $6.00; manure $6.00 (assumed, may have no value) .....$ 20
Cost of 100 pounds of milk ...$1.74

From this it appears that dairying with 20-pound cows, under the conditions given, will result in about an even break. It will reimburse the owner for labor, for the purchase of hay ($12.00 is a high price for dairy hay), use of capital, and wear and tear of stock and equipment. It will not permit a very wide margin of profit, especially if all labor must be hired.]

The Sacramento Hog Sale.

[Written for Pacific Rural Press.]

Sheltered by Agricultural Hall at the State Fair Grounds, from one of the fiercest storms of the winter, a fairly good sized crowd of farmers and breeders were in attendance at the first annual auction sale of the California Swine Breeders' Ass'n. last week.

The extremely cold weather seemed to reflect itself on the enthusiasm of the buyers during the forenoon, when a number of useful animals were knocked off at less than pork prices.

After lunch there was an improvement in this respect, which continued long enough for auctioneer Ben Rhodes to dispose of a goodly number at very satisfactory prices. This did not last, however, and the final hour or so of the sale was a repetition of the forenoon's experience, namely, the sacrificing of many good breeding animals at prices considerably lower than they can be purchased elsewhere in the State.

Altogether there were 102 head sent through the ring, the average price of which was a trifle over $35 a head. Of this number, the Duroc Jerseys made the highest average, 17 head of sows averaging $61 each, 12 boars $32 each, making an average for the breed of $49 on the entire 29 head.

Berkshires came next with 12 boars averaging $27 each, 27 sows averaging $41.50 apiece, making an average for the 39 head of $37.

Five Chester White sows averaged $35.50, the one boar selling for $20, which brought the average of the breed down to $32.90.

With a large offering of Poland China boars the average for this breed was $21.60. The 16 boars averaged $18.75 and the seven sows $28.

While not satisfactory as the above figures show from a financial standpoint, it is nevertheless a fact that much good should result from the sale, inasmuch as it has brought out many points relative to selling of purebred livestock, by the auction method, which only experience could develop.

One of these is the proper time of the year for the holding of such sales. It seems apparent that even in California, winter weather cannot be relied upon and that weather is an influencing factor in days of extensive auto traveling, like the present.

Another point which undoubtedly has a great influence on prices is uniformity in the offering. If there were ever any doubt that auction sale buyers are equally as discriminating, if not more so, than buyers elsewhere, such doubts should be dispelled by last week's experience. It follows selling experience in other lines, that seconds depress the market for tops. Many a good hog sold low last week, largely because a poor one preceded him in the ring, even though the latter one may have sold at, or near, his real worth.

Condition is another influencing factor, and while "working clothes" may be better for utility purposes than "high finish," it seems evident that most auction buyers, like most show ring judges, prefer seeing the fat on the hog rather than in the grain sack. This condition had a material effect on the prices received for the Duroc Jerseys, for be it said to their credit, the Duroc breeders were far-sighted enough to put animals in the ring of uniform good breeding and good finish, and further, they helped the sale of their animals by ring managership, which is supposed to be a business of itself.

It should be borne in mind by prospective hog buyers that the prices at this sale were neither representative of the quality of all the animals sold, or of the prices one must pay for the same class of animals at breeders' farms. The shaving of last week's prices was due more to inexperience in the auction method of selling hogs, than anything else and as such was an unfortunate instance for those consigning.

There were nearly 50 buyers, of which the heaviest purchasers were A. B. Humphreys, W. J. Edinger, Elder Creek Farm, C. A. Christen, G. P. Robinson, E. K. Carnes, Del Dago Farm, L. C. Crellin, Dr. E. J. Weldon, A. M. Bracken, F. Loudreth, H. Marsh, G. R. Shurey, J. L. Dienstag and G. C. Francis.

To Regulate City Milk Distribution.

[Written for Pacific Rural Press.]

With a determination to better their conditions through co-operation, nearly 100 dairymen were present at the meeting of the Bay Counties Dairy Co., held in San Francisco, February 1, at which time the final subscriptions to the $45,000 fund were secured, which will be used in establishing a whole milk distributing plant as outlined in our issue of January 1.

This gives the association control of 18,000 gallons of milk out of a total of 28,000 consumed in San Francisco, the rate of subscriptions being $25 for each 10 gallons of milk sold through the association.

It was brought out at the meeting that since the earthquake in San Francisco, all attempts to secure a fair price for market milk, through co-operation with the milk distributors, have failed, due to the fact that the producer had no organization back of him, strong enough, financially, to demand his rights, but that he was being met on the other hand with a strongly organized distributor, who dictated both the price to the producer and to the consumer.

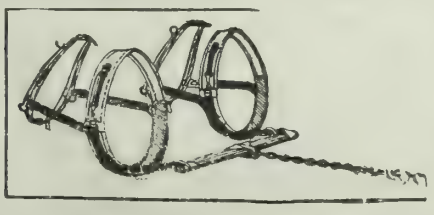
With the above named fund it is intended to erect a distributing plant, where all milk of association members may be shipped, and resold in wholesale quantities, providing such procedure is deemed necessary, in order to get a fair price for the producer.

Col. Weinstock was present at the meeting and spoke of the desire of the State to aid all legitimate co-operative enterprises of producers and summed up the market milk producers problem like this: Producers have no chance to sell right individually, especially when the men they are selling to are well organized, as is the present case with the market milk problem in San Francisco. He believes that the organization plan of the dairymen's association is a good one because each member has money involved which binds them closer together than anything else could.

After listening to several speakers, a recess was declared by the chairman, for the completion of the subscription list, which was still $2500 short of the desired amount. This was secured in a short time and immediate steps will be taken by the directors of the association to work out plans for the handling of next season's milk.

Unusually Considerate. — Miss Milly was rather a talkative young lady. Her bosom friend, having missed her for some time, called to find out the reason. "No, mum, Miss Milly is not in," the maid informed her. "She has gone to the class." "Why, what class?" inquired the caller in surprise. "Well, mum, you know Miss Milly is getting married soon, so she's taking a course of lessons in domestic silence."—Tit-Bits.

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Farm Curing of Meats.

In answer to several queries recently received on ways of curing meats we take the following from Farmers' Bulletin 173 of the U. S. Dept. of Agr. A chapter is also devoted to the home curing of pork in our California Hog Book, full particulars of which can be secured by writing this office.

Corned Beef—The pieces commonly used for corning are the plate, rump, cross ribs, and brisket; or in other words the "cheaper cuts" of meat. The pieces should be cut into convenient pieces, say five or six inches square. It should be the aim to cut them all to about the same thickness, so that they will make an even layer in the barrel. Weigh out the meat, and allow ten pounds of salt to each hundred pounds; sprinkle a layer of salt one-quarter of an inch in depth over the bottom of the barrel; pack in as closely as possible the cuts of meat, making a layer of five or six inches in thickness; then put on a layer of salt, following that with another layer of meat. Repeat until the meat and salt have all been packed in the barrel, care being used to reserve salt enough for a good layer on the top. After the package has stood over night, add, for every 100 pounds of meat, four pounds of sugar, two ounces of baking soda, and four ounces of saltpeter dissolved in a gallon of boiling water. Cool and add three gallons more of water, which should be sufficient to cover this quantity of meat. A loose board cover, weighted down with a heavy stone or piece of iron, should be put on the meat to keep all of it under the brine. In case any should project, mold would soon start and the brine would spoil in a short time. If the meat has been corned during the winter, and is to be kept into the summer season, it would be well to watch the brine closely during the spring, as it is more likely to spoil at that time than at any other season. If the brine appears to be ropy, or does not drip freely from the finger when immersed and lifted, it should be turned off and new brine added, after carefully washing the meat. The sugar in the brine has a tendency to ferment; and, unless the brine is kept in a cool place, there is sometimes trouble from that source. To secure thorough corning, the meat should be kept in the brine twenty to thirty days.

Plain Salt Pork.—Rub each piece of meat with fine common salt and pack closely in a barrel. Let stand over night. The next day weigh out ten pounds of salt and two ounces of saltpeter to each 100 pounds of meat, and dissolve in four gallons of boiling water. Pour this brine, when cold, over the meat; cover, and weight down to keep it under the brine. The pork should be kept in the brine until used.

Sugar-Cured Hams and Bacon.—When the meat is cooled, rub each piece with salt and allow it to drain over night. Then pack it in a barrel with the hams and shoulders in the bottom, using the strips of bacon to fill in between or to put on top. Weigh out, for each 100 pounds of meat, eight pounds of salt, two pounds of brown sugar, and two ounces of saltpeter. Dissolve all in four gallons of boiling water, and after cooling cover the meat with it. Bacon strips should remain in the brine four to six weeks; hams six to eight weeks. This is a standard recipe and has given the best of satisfaction.

Smoking Meats.—The best fuel for smoking meats is maple wood, smothered with sawdust of the same material. Hard wood of any kind is preferable to soft wood. Resinous woods should never be used, as they are likely to impart bad flavors to the product. Corncobs are the best substitute for hard wood, and may be used if desired.

SHEEP FORAGE FOR SELVES.

[Written for Pacific Rural Press.]

What a few sheep will do without trying is shown by T. W. Davies of Imperial county whose flock has been furnishing mutton and beef for the family for 10 years without expense except the foundation. No new blood has been bought since the Navajo foundation ewes were crossed with Cotswold bucks. Ewe and buck lambs have been kept for breeding until recently the last buck was butchered at 14 months and dressed 108 pounds. That better breeding would have produced better results goes without saying; yet the dozen ewes he now has are thrifty and are, in the middle of January, beginning to lamb, but not very satisfactorily, partly because they are too fat. Two of them are 10 years old and with lamb. The Navajo constitution has held up the vigor of the flock.

The sheep have had, only "Imperial Valley shelter"—the open sky—except at lambing time when ordinarily they may rest under a brush roof on fence posts. Two lambs were recently presumably eaten by coyotes, since the ewes were in a pasture with the horses, away from the house.

They have had no feed except what they picked up about the ranch with the cows and horses. They do not get into water or mud very much, yet they are a great help in keeping down the Bermuda grass which has infested ditch banks of the region. Tall grass and weeds grow quickly in the ditches in the hot summer; and almost in proportion to their height, they catch the river sediment which necessitates ditch digging three or four times a year; but which if spread on the land would enrich it. Sheep save the cost of mowing the grass and much of the mud shoveling. Hog-tight wire is needed to confine them.

They have been sheared in spring for their comfort only, since the wool market was absent—sometimes their carcasses were exchanged for beef. There is a wool buyer now in El Centro, so the future shearings will be saved for a little extra money. However, it is a mutton variety that Mr. Davies believes is needed.

S. Young, one of the pioneer grain farmers of Stanislaus county, realizes that the greater part of his land is too valuable for grain and is preparing to enter the dairy and hog game. He is checking and seeding 165 acres of his land for alfalfa this season and is erecting a modern dairy barn. He has a herd of grade Holsteins and is using a purebred bull from the J. Benoit herd of registered Holsteins.

Bassett's Medium Type POLAND CHINAS



Grand Champion Sow.

Won $2145 in cash prizes at
PANAMA-PACIFIC INTERNATIONAL EXPOSITION.
Grand Champion, Senior Champion and Junior Champion Sow.
Reserve Grand Champion and Junior Champion Boar.
First on produce of Dam; First and Second on Get of Sire; First on Aged Boar; First on Young Herd; First on Aged Herd and Young Herd Bred by Exhibitor, Etc., Etc.
The following Boars are in service in my herd:
Hustler 191721. Hustler's Model 238217.
Perfect Hustler 238209. Chief's Victor 238215.
Gold Coin 3rd.

My brood sows are all of my own breeding, and after years of selection, during which steady improvement in quality has been my constant aim, the present breeding herd carries the blood which has been the foundation of this herd of consistent prize-winners. These are the kind of Poland-Chinas that produce pigs that are uniform, that have all the size that is necessary, that mature quickly, and grow into pork at a minimum of feeding expense. Choice breeding animals of both sexes from this prize-winning blood. Price from $30 up.

Correspondence solicited. Visitors cordially welcomed.

M. BASSETT - - Hanford, California

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Thornton S. Gilde, Prop.
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SHORTHORN CATTLE

Shropshire and Merino Sheep

FOR SALE, SINGLE OR CARLOAD LOTS



KING LANCASTER,
Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.
THEY HAVE GRAND CHAMPIONS BEHIND THEM.

CALIFORNIA Hog Book

In commenting upon the California Hog Book, the Colusa Sun says: "It contains 252 pages, 31 illustrations and 22 line drawings. It is an invaluable book to the man who is engaged in or contemplates raising hogs, as it deals with different strains, breeding and other information pertaining to the hog industry."

Price, $2.00 Postpaid.

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Cream Cup Herd Holsteins

Offering some wonderful bargains in young cows and heifers.
LARGE AND TYPEY. ALL REGISTERED. FINE PEDIGREES.
Better call and look them over.

M. HOLDRIDGE, MODESTO, CAL.

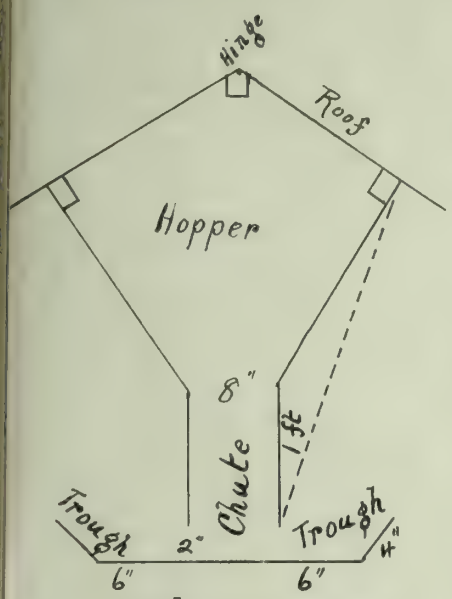
Self Feeder for Hogs.

To the Editor: Will you give me directions for making a self-feeder for feeding tankage, grain, etc., to hogs?—P. B. L., Tulare.

[Answered by Wm. T. Chapple, Fair Oaks Ranch, Willits.]

[We are now using the self-feeder, shown in illustration, and find it very satisfactory. For a Berkshire it is better to have the chute on account of their short nose, but for a long-nosed hog the hopper can slant down to base of chute as indicated by dotted line, which should be about two inches from base of trough, which is six inches wide. In this way the hogs lick the feed out and do not waste any.

These feeders are very simple and can be made any size, according to the number of hogs fed or the quality of the feed. We divide ours into several compartments, by partitions, so that one feeder several feet long can be used for minerals (in separate compartments) also grain. The roof, if used outdoors, would have to be like drawing, otherwise could be flat or not have any. Chute should be from six to eight inches at bottom.



Home-Made Self-Feeder for Hogs.

We are using a feeder like this 36 feet long, running through the center of our feeding room, with concrete feeding floors on each side. In it we feed the grain, tankage, minerals, etc.]

BEET PULP FOR FATTENING HOGS.

To the Editor: Will you tell me if there is any fattening properties in beet pulp when fed to hogs? I mean the wet pulp that one can get at the sugar refineries for 50 cents per ton. Am told it is good for feeding cattle but can not learn from anyone around here what effect it has on hogs.—W. H. R., Patterson.

[Comments by F. J. Greer, Supt. Spreckels Sugar Co., King City.]

[Regarding wet beet pulp for hog feed, will say that we have been feeding beet pulp to hogs for the last two years. Last year as an experiment and this year as a permanent feed both for growing and fattening. At present we are feeding it to a bunch of pure bred Duroc-Jerseys with good success.

While the feeding of wet beet pulp to hogs is practically a new thing in this valley, all those who have tried it have been well pleased with the results. I do not know of a feed that will take the place of beet pulp as a hog feed where feed cost is taken into consideration.]

[If others have had experience with wet pulp for hogs we should be pleased to hear from them.—Eds.]

PULLING WOOL FROM SHEEP PELTS.

To the Editor: Will you kindly publish a recipe for pulling wool from sheep pelts, the same that is used in general by butchers and tanners, also, give instructions of use? We cannot get near the price of wool for sheep pelts.—L. S. S., Henleyville.

[Answered by Prof. R. F. Miller, University Farm, Davis.]

[Regarding the method of pulling wool from sheep pelts in the wool pulleries there are several in use. First, the lime method of painting the flesh side of the pelt soon after it has been removed from the carcass, with a solution of lime, leaving it over night, and the next morning the wool will come off readily. This treatment, however, is rather severe on the wool fiber and makes it tender. The one most extensively used is painting the pelts with a solution of sodium sulphide, leaving them over night and the next day the wool can be pulled off. I question whether it will pay to pull wool off pelts unless it happens to be a very long fiber, because the pelts with the wool removed are hard to sell. The writer has simply clipped long wool off sheep pelts with a pair of shears, and in this way sold the wool and pelt separately.]

ANALYSIS OF CHEAT.

To the Editor: What is the nutritive value of cheat (the seed) for poultry? Also for horses and cows? Please answer the above through the Pacific Rural Press, as there are several in this locality who would like something authentic on the subject. Opinions vary greatly among those I have talked with.—C. R. C., Proberta.

[Answered by Professor F. W. Woll, University Farm, Davis.]

[It is common in this State to call darnel (Lolium temulentum) cheat, while elsewhere this term stands for an annual plant belonging to the genus Bromus, a common weed in grain fields and waste places. Darnel is usually considered good green feed in this State. I am not aware that the seed has ever been analyzed; at least I can find no records of its chemical composition. Owing to the small size of the seed they would not be apt to be of much nutritive value for either poultry or other livestock, as they would pass through the digestive apparatus of the animals practically uninjured. If cheat is grown in Tehama county and the seed fed to farm animals, readers of the Press, and I among them, would be glad to be informed of the fact and of the practical experience obtained in feeding it.]

The meeting of the SonomaNapa Counties Cow Testing Ass'n was held at Napa last week, at which time the tester for the association reported that he had tested 900 cows during the past six months.

REDWOOD TANKS



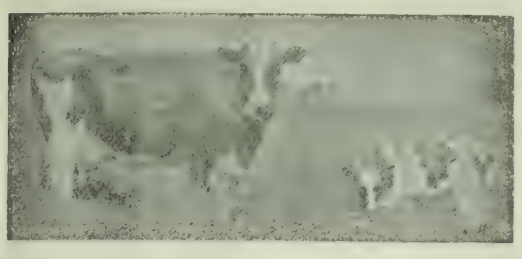
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Also have a few registered **BERKSHIRE GILTS** for sale.

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Feeding This Product Makes the Business Profitable.
At Adds 1¼ POUNDS DAILY to your HOG.
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Write or Phone for Particulars and Sample.
$14.00 PER TON.
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Corner 6th and Crocker Sts., Los Angeles, Cal.

With the Live Stock Men.

DAIRYING.

Dairymen in the vicinity of Gilroy are said to be improving their grade herds by the use of purebred bulls.

A. M. Bibbens of Stanislaus county received a young registered Holstein bull from the O. N. Kellogg herd in New York last week.

A report from Orland states that over $60,000 has been paid out during the past month by one creamery in that town for butter fat received during the past eight months.

Dispatches from New York say that several large shipments of butter have recently left there for Russia. These are said to be the first shipments ever made from America to that country.

We are advised by A. W. Morris of Woodland that he expects Tilly Alcartra to make around 1200 pounds of butter and about 30,000 pounds of milk in her official test this year, which has about 50 days to run.

Mr. C. E. Denman of Petaluma has purchased a 320-acre tract of land in Tulare county which he will turn into a dairy at an early date. He will ship a number of dairy cows from his father's herd at Petaluma, as soon as the ranch is developed.

With the manufacture of nearly one and a half million pounds of butter the Visalia Co-operative Creamery at Visalia broke all previous records during 1915. At a meeting of the directors held recently S. T. Pennebaker was elected president of the company and N. J. Beck was retained as manager.

The average cost of producing butter at the Dairymen's Co-operative Creamery Association's plant at Tulare last year was 1.40 cents per pound and the sales cost 1.16 cents a pound. The manager's report for 1915 showed the total sales of the creamery to have been $623,604.72 for the year. Over two million pounds of butter were made.

The California Central Creameries have bought stock in the Imperial Valley Creamery Co. and are building a new $45,000 creamery at El Centro besides putting a $2,000 addition to the old creamery which will all be used as a casein factory. Equipment in the new creamery, now being made in New York, will cost $45,000 or $50,000 more.

Whole milk instead of cream is desired by the Imperial Valley Creamery, according to its manager J. A. Robinson. This is because dairymen will not take proper care of the cream to enable the creamerymen to make 93 scoring butter. Whatever cream is bought after Feb. 1 will have to be fit to make 93 butter in order to receive the Grade A price. The whole milk project is favored by Imperial county producers.

F. H. Van der Poel of El Centro has a registered Jersey cow, Fern Silver Ray, which made 255 pounds fat on official test, from Sept. 20 to Jan. 1, being kept in an open corral and milked twice daily. She is now being fed 3 or 4 pounds cotton seed per day besides 5 pounds dried beet pulp soaked, 9 pounds rolled barley, and alfalfa hay cut before blossoming. She is 5½ years old, calved Sept. 15, produced 438.7 lbs. milk and 22.417 lbs. fat in Sept. beginning the 20th, 1441.7 lbs. milk and 73.67 lbs. fat in Oct. with a test of 5.11 per cent, 1375.3 lbs. milk and 81.211 lbs. fat in Nov. with a test of 5.905 per cent, and 1291.3 lbs. milk and over 75 lbs. fat in Dec. with an average test of 5.834 per cent. Her best day's milk was 52.2 lbs. The test is being continued for a high yearly record.

SWINE.

Two carloads of hogs were shipped from Salinas last week, one to the San Francisco market and one to Kings City.

E. C. Curtis, Duroc breeder of Napa, reports having recently sold 10 eight-month-old gilts to H. Diveneck of Ukiah, one sow to A. B. Johnson, one sow to G. Winfry and one sow to Dr. Robinson.

A dispatch from Fort Worth, Texas, says: "A contest in the art of calling hogs, it was announced today, will feature the State encampment of agricultural clubs here in March. Boys alone will be eligible.

A purebred Berkshire herd is being founded on the recently acquired Roberts Island ranch belonging to Mrs. John F. Merrill of San Francisco. A large farrowing house has been completed and other buildings are under way which will make the establishment one of the best in the Sacramento valley.

W. T. Sessnon, who was a liberal purchaser of Berkshires at the P. P. I. E. and who has since made goodly purchases of Shorthorn cattle, is making a number of improvements on his ranch near Bradley, Monterey county, and expects to have one of the most up-to-date breeding establishments along the coast.

At a meeting of the Stanislaus County Farm Bureau, held in Modesto last week, it was decided to take immediate steps toward the eradication of hog cholera and other contagious livestock diseases in the county. An effort will be made to have county ordinances passed which will aid in preventing the spread of such diseases.

A. M. Henry of Farmington has two young boars on the way to head his large herd of Poland Chinas. One of these boars was purchased from Peter Mow, of Iowa, and the other comes from the herd of W. Hather, Ord, Nebraska. Mr. Henry is keeping 15 head of brood sows at the present time and states that he is finding difficulty to supply the demand.

A. D. McCarty, owner of the Riverina Farm at Modesto, writes: "Since the Exposition we have sold 7 boars and 31 bred gilts. The following are some of the purchasers: J. Campbell Shorb, Santa Cruz Island Co., Timken Ranch Co., Dr. E. H. Smith, A. L. Tubbs Co., J. G. S. Hubbard & Sons, C. H. Wooley, W. H. Ringen, Chas. H. Tointon. Mr. Shorb got Riverina Ranger 2nd, P. P. I. E. Grand Champion Boar.

There are 2300 head of hogs on the Pacific Land & Cattle Co.'s ranch near Imperial, of which 500 are brood sows from which at least 2400 pigs are expected in the March farrowing, according to T. H. Dills who has charge of them. They have 21 boars, all purebred of five different breeds. Those in which black predominates seem best adapted to this ranch, which raises hogs to be fattened at the local packing house.

HORSES.

A San Francisco buyer has been in Chico the past week, buying horses at prices of $75 to $125. He states that he is in the market for 1,000 head.

A Nevada horse buyer is making a trip through Mendocino county looking for horses. He is said to be in the market for 500 head. It is supposed that he is buying for the Denver market where many of the foreign army buyers are making their headquarters.

SHEEP.

Coyotes are said to be killing eight to ten sheep a night on the Dillon ranch in Browns Valley, Napa county.

A report from Colusa states that Fred Mendonsa lost 300 head of sheep on low land near that place last week.

The unusual wet weather is said to be causing considerable loss of lambs on sheep ranches in the lower part of Monterey county.

About 800 sheep belonging to T. W. Harlan of Willows narrowly missed drowning last week when high water caught them on the Green ranch.

The Nevada State Sheep Commission has subscribed $10,000 to be used in exterminating rabies in that State. The State Cattle Commission donated a like amount and it is probable that the State will add materially to the fund.

Due to the losses by coyotes which have occurred in past years, K. Ford of Mendocino county intends herding his sheep in the future. In the past this has not been considered practicable in that section due to the ruggedness of the country.

Reports from Elko, Nevada, say that winter feeders of sheep south of Eureka are becoming alarmed at the growing scarcity of feed due to the heavy snow which is on the ground and that several large orders for cottonseed meal have been placed in an effort to carry the flocks over till wild feed is again available.

BEEF CATTLE.

Shipments of livestock from Imperial valley are reported to be large at this time. A trainload of 45 cars left the valley as soon as the tracks were repaired after the late heavy rains.

A trainload of Nevada cattle were received at Oakdale last week, consigned to F. R. Gatzman and R. E. McCormick who have a fine range

Classified Advertisements.

MISCELLANEOUS.

SUDAN GRASS SEED for sale by the rower, direct to farmer at a saving of 60 per cent—less than Seed dealer's prices! Choice seeds; none better. Send in your orders now while it lasts. Greatest forage crop known for dry or irrigated land. Better and finer hay than Timothy. **Wm. P. Spalding, R. F. D., No. 1, Box 64, Los Molinos, Cal.** 30c. lb. small lots; 50 lbs. and over at 25c, delivered.

SAVE MONEY ON YOUR PUMPING PLANT—We are reducing our stock of Gas Engines, Oil Engines, Centrifugal Pumps, Friction Clutch Pullers, etc., and can name you very low prices indeed. Write us at once. Commercial Iron Works, 481-497 Fifth St., San Francisco, Cal.

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SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

BARGAINS—One new Deal (John Deere) 4 point, 41-inch tractor plow; 1 2-disc La Crosse orchard plow; 1-12 feet. Rival Disc harrow, 20-inch discs. J. E. Thomas, Gilroy, Cal.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds $3.00 delivered. Order with remittance, WM. J. SCHROTH CO., 112-B Market St., San Francisco.

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GOPHERS AND MOLES KILLED CHEAPLY—Positive results obtained by new secret methods. Full details for 25c stamps. Box 353, Carson City, Nevada.

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BALED WHEAT HAY FOR SALE in carload lots. Write H. E. Van Hensen, Hollister, Cal.

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WALNUT TREES — Late blight-resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California black root, as the California Black root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

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TRIBBLE NURSERIES, ELK GROVE, CAL.—Grafted walnuts and grafted paper-shell pecans. Exclusive propagators of Tribble, Mayette, Kerr Parisienne, Glady and Improved Franquette. 19 other varieties. Fine stock of almonds, prunes, Bartlett pear on resistant roots and other fruit trees and plants. New list ready.

CALIFORNIA GROWN SUDAN GRASS SEED—Absolutely free from Johnson Grass or other Weed seed. Plant all you can of it; for Broody Chicks and laying Hens or stock of any kind you can't beat it. 30 cents per lb. Write for prices on large lots. Lasher's Hatchery, Petaluma, Calif.

CLOVERDALE NURSERY CO., Cloverdale, Cal.—(Resistant Grape Vines exclusively)—Wine and Table grapes of all leading varieties grafted on resistant roots. Rooted resistant stock of all improved varieties for table and field grafting. Also cuttings of resistant stock.

CITRUS TREES—40,000 assorted—20c in tree row; 25c balled; subject to advance. All big, two-year-old stock. Choicest ever produced by anybody, anywhere, at any price. Lem A. Brunson, Santa Fe Springs Nursery. Office, 1120 Haas Building, Los Angeles, Cal.

BURBANK'S Spineless Cactus—Direct from the home of the originator, Santa Rosa, Cal. We are now offering the new improved varieties of forage and fruiting cactus for cattle, hogs and poultry. Write for our pamphlets and price list. J. I. Jewell, Santa Rosa.

1000 SACKS OF AMERICAN WONDER and High Top Burbank, clean seed Potatoes, from fields that produced 388 sacks to the acre, winning third prize in State Contest. Act quick as they will not last long. H. A. Hyde, Watsonville Nurseryman.

ORCHARD TREES, BERRY PLANTS, long on Gooseberries and Currants. To introduce my catalogue, I will send 1 doz. best bush and climbing roses for $1.50; 1 doz. different German Iris, Choice, for 75c. H. A. Hyde, Watsonville Nurseryman.

BUY PURE CALIFORNIA DESERT GROWN SUDAN GRASS SEED (and avoid Southern States Johnson Grass). Send $1.00 for sample 3-lb. package, postpaid; special price on larger quantities. Send for circular. Rich & L. Ranch, Lancaster, Calif.

PEDIGREED BURBANK CACTUS PLANTS—10,000, $300; 1000, $45; 100, $7.50. Cheap Hog, Poultry, Cattle fodder. Neighbors combine in orderug. Instructive literature. El Campo Co., 227 Story Bldg., Los Angeles.

FOR SALE—Manzanillo Olive Trees, budded on Pichooline seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

WALNUT TREES—Eureka and El Monte varieties a specialty; also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

SOUDAN GRASS SEED—Warranted free from Johnson grass and weed seeds. 30c per pound; 10 pounds for $2.75; 100 pounds for $25. I pay postage or freight. John Silbersack, San Martin, Cal.

FRANQUETTE AND MAYETTE grafted on California Black. Sizes 3 to 10 feet. Prices reasonable. Special discount on large orders. Sunset Nursery, 525 W. San Carlos St., San Jose, Cal.

FOR SALE OR EXCHANGE—1500 San Jose Mayette Grafted Walnuts. Six to ten feet. Price low or will exchange on light auto or good heavy team. Chas. Story, Rivera, Cal.

ROYAL AND TILTON APRICOT AND SUGAR PRUNE Trees direct from Grower. Wholesale prices. Write L. Kendall, 151 S. Meredith Ave., Pasadena, Calif.

WALNUT TREES—Grafted and Seedling. Also fine field-grown Ganter and Hannan Avocado trees. Write for prices. Magnolia Nursery, Whittier, Cal.

WAGNER'S CRIMSON GIANT WINTER RHUBARB—Subdivided plants. $15 per 1000; $2 per 100. G. E. Shelford, Healdsburg.

ETTERSBURG STRAWBERRIES—Plants: dozen, 25c; 100, $1.50; 1000, $10. Delivered. E. Welty, Ripon, Cal.

FOR SALE—Spineless Cactus Plants. Prices right. B. C. Engbert, Byron, Cal.

PRUNE TREES—12 cents. Walnuts, 30c. Cash Nurseries, Sebastopol, Cal.

SEED CORN—Select ears or shelled. C. W. Jenkins, Live Oak, Cal.

APPLES, PEACHES—10 cents. Gage Nursery, Corning, Cal.

WANTED.

WANTED—Responsible Representative. 12 tools in 1. Sell to farmers, teamsters, contractors, etc. Lifts 3 tons, hoists, stretches wire, pulls posts. Many other uses. Free sample to active agents. One Agent's profit $45 in one day. Another $1000 in Dec. We start you. Write for Big Color Plate. Secure exclusive sale. HARRAH MFG. CO., Box M, Bloomfield, Ind.

WANTED—About sixty young men and women to enter the WESTERN NORMAL on January 1, 1916, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We save you time and money. For information address, WESTERN NORMAL, J. R. HUMPHRIES, Principal, Stockton, Cal., Box 704.

WANTED—DAIRYMAN AND COWS—I have 100 acres of irrigated land near Marysville in the Sacramento Valley want to arrange on share basis with good dairyman who has some cows. Address "B. A.," Box 755, Sacramento, California.

WANTED—Position as manager of large orchard, vineyard, dairy. Alfalfa and grain farming. By a man with many years of practical California experience. Reference. Room 336 Hotel Alpine, San Francisco.

WANTED PROFESSIONAL BUDDER to bud 10,000 seedling peach trees. Apply H. F. Pixley, Corte Madera, Marin county, Cal.

LAND FOR SALE.

I OWN AND OFFER FOR SALE 475 acres of land situated in Solano Co. between Dixon and Winters. Good house and barns. About 80 acres graded for alfalfa. Good wells and irrigating pump. Adjoins the successful rice fields of this county. Price, $60.00 per acre. $10,500 cash and balance on easy terms. J. H. Petersen, Dixon, Cal.

FOR SALE—Sacramento Valley Dairy and Hog ranch of 60 acres, fully equipped. Close to town and school. 30 acres alfalfa, balance grain. Two sets buildings. Price, $225 per acre. For further information address: Owner, care Pacific Rural Press.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

ORCHARD, ALFALFA, STOCK OR RICE RANCHES for sale or exchange. Alex. T. Gibson, P. O. Box 361, Chico, Cal.

20 ACRES IN ALFALFA adjoining Kirkman Nursery, near State Highway. Fine pumping plant. S. H. Kunkle, owner, Madera, Cal.

WANTED GOOD FARM, or unimproved land from owner. H. L. Downing, 145 Palace Bldg., Minneapolis, Minn.

WANTED TO HEAR FROM OWNER of good farm for sale. Send description and cash price. R. G. List, Minneapolis, Minn.

above Keystone. The cattle were shipped from Winnemucca.

Heavy shipments of both cattle and sheep have been waiting better rail facilities for some time in Nevada. The shipments will be made to Pacific Coast points as soon as weather conditions permit, according to dispatches from Reno.

At the annual meeting of the National Livestock Ass'n held at El Paso last week steps were taken to eliminate market fluctuations and to combat alleged combinations of other interests which tend to keep down the price of cattle. It was brought out at the meeting that sheep men and cattle men are to co-operate in securing some definite form of federal control for the unappropriated, unreserved lands.

The Ormondale Farm, situated near Redwood City, is beginning to stock the farm with the best of Shorthorn beef cattle. This company purchased a bull at the cattle show in Portland in Dec. for $1200, called Golden Goods Jr. Also two prize yearling cows sold at auction from the Gibson Estate Co. They also purchased ten cows and their calves, the choicest in the herd of A. D. Dunn, of Wapato, Wash.

As an evidence of their appreciation of the good results from the Northwest Livestock Show, held annually at Portland, the American Shorthorn Ass'n has appropriated $2500 for premium money at that show next year and the American Hereford Ass'n has made appropriations for the same amount. This is the largest prize fund given to any show by these associations except the International Livestock Show at Chicago.

IS GOAT IN KID?

To the Editor: I have a goat that was supposed to be fresh about two months ago, according to the man I secured her from three months ago. She hasn't come yet though she looks kind of pouched and her bag looks more solid than before. She looks in fine condition. Can you advise me about her? Is there any way that I can find whether she is with young?—O. T., Downey.

[Answered by Prof. E. C. Voorhies, University Farm, Davis.]

It is a very difficult matter to tell whether or not a goat is with kid. If the goat's udder is solid and hard it should be rubbed every other day with lard or vaseline. You will find that this will keep the udder in better condition than if left without anything of the sort. It may be that the man from whom you purchased the goat was mistaken about the breeding. The only thing to do is to keep the udder in good condition and await results, as I do not know of any way in which you can tell whether or not the goat is with kid.

Stringing Us?—Speaking of the eternal fitness of things, possibly it has escaped your notice that Etta Bean lives in Boston.—Columbia State.

LIVESTOCK DIRECTORY.

HORSES AND MULES.

FOR SALE—Large-boned, purebred mammoth Jacks. Best of breeding. Prices and terms reasonable. Satisfaction guaranteed. J. A. Dickinson, Fresno, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

DAIRY CATTLE.

ONE THOROUGHBRED JERSEY BULL—10½ months, out of 500-lb. dam. One sister made last year with second calf over 400 lbs. butter. His mother was eleven months from calving to calving, and during the ten months of milking made a profit of $164.40. C. B. Christiansen, Route 1, Box 124, Dinuba, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H Stenzel, San Lorenzo, Cal

WANTED—About 25 good dairy cows to be paid for in 12 equal monthly installments. Payment secured by mortgage on stock. Party reliable. Box 205, Pacific Rural Press.

VENADERA HERD OF JERSEYS is now offering fine heifer calves from register of merit cows with official yearly records. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

HOLSTEIN BULLS—Purebred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

SUNNYBROOK RANCH, Willits, Cal.—Breeders Registered Holstein stock. Young bulls for sale sired by Ruby Gem Cavary Lad. Prices reasonable.

FRANK MEACHAM, Petaluma, California.—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal—High-class, thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TWO REGISTERED HOLSTEIN BULLS out of A. R. O. dams. Sired by King Mead. Ready for service. J. H. Harlan Co., Woodland, Cal.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

TWO REGISTERED HOLSTEIN BULLS old enough for service. Very light in color. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEIN BULLS — Serviceable age. From finest strains. Panama-Pacific Dairy. Sutter Creek, Cal.

ELEVEN REGISTERED HOLSTEIN COWS—Priced to sell as a bunch at very low figure. K. W. Abbott, Milpitas, Cal.

HOLSTEIN-FREISIAN CATTLE and Berkshire Hogs. H. B. Goecken, Breeder, Goecken Heights, Livermore, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

PALENDALE HERD of Registered Holsteins. Young bulls for sale. J. A. Pelanda, Modesto, Cal.

REGISTERED JERSEY BULLS from register of merit cows. D. F. Conant, R. "B," Modesto.

BREEDERS OF A. R. O. Holstein Friesian cattle exclusively. Dirk Dairy Farm Lemoore.

CREAM CUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls from tested cows for sale.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Son, Chino, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

BREEDER of Registered Holstein Cattle. Ernest Otto McClure, R. 2, Modesto, Cal.

BREEDER OF REGISTERED HOLSTEINS—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams B. F. Anderson, Modesto.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes. McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd. D. & H. Rowles, Modesto.

JERSEY BULL—8 months old. A bargain. O. J. Ames, Oakdale, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

BEEF CATTLE

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco, or H. J. Macomber, Paicines, Cal.

FAIR OAKS RANCH, Willits, Cal.—Registered yearling Shorthorn bulls for sale. Sired by Landseer 379318, grandson of imported Villager 295884.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON-NEWMAN CO., Breeders of registered Herefords. Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

HEREFORD BULLS—H. H. Gable, Diamond G. Ranch, Esparto, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SWINE.

BIG TYPE POLAND CHINAS—One to a carload. Any age, either sex. 600 on hand. They have plenty of size, extra good hams and shoulders, strong arched backs, great length, depth and thickness of body, with good looks as well. Many are sired by IOWA WONDER, a 1000-pounder in show condition. I believe his pigs are the best in California. Visitors say they are the best they have ever seen. He sires the kind that grow faster and larger, have more, better and stronger pigs, and are more practical and profitable—the kind that are highly satisfactory. Extra special prices on account of being overstocked. I have hogs galore. Prices will surprise you. Satisfaction guaranteed. Write Geo. A. Smith, Corcoran, Cal.

YOUNG'S POLAND CHINAS—Large type boar, "I. B. A. Wonder" won first in class and Reserve Champion P. P. I. E. 730 lbs. under two years in breeding condition. Sows bred and sired by "I. B. A. Wonder." Also weanling pigs, either sex. Trios unrelated. None bigger. None better. $15 and up. Will please you or money refunded. W. A. Young, Lodi, Cal.

BILLIKEN HERD of registered O. I. C. Swine. Pigs of both sexes from March, April, May and June farrows. Four sires used: Chief Again, Iowa Boy, Missouri Lad and Woodview Earl. All the dams are the smooth, big type. A few bred sows to offer. Everything is cholera immune. Write for prices and catalogue. C. B. Cunningham, Mills, Sacramento County, Cal.

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REGISTERED DUROC-JERSEYS—Prize-winning stock from Iowa, Nebraska and Wisconsin. 75 head—bred sows and gilts. Also weanlings in groups of from one to five and boar unrelated of Crimson Wonder, Golden Model, Advancer, Golden Hero, Orion, Chief and Colonel blood. Price $10 and up. Haden Smith, Route 1, Box 97A, Woodland, Cal.

RANCHO RUBIUS HERD DUROCS—Won 1st under six months, Junior Champion, Reserve Grand Champion, Champion Sow bred by Exhibitor, 2nd Sow under 2 years, and two other premiums, all on four entries at P. P. I. E. A few service boars and weanling pigs for sale. Elmer Lamb, Ceres, Cal.

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REGISTERED DUROCS—Gilts bred to Crimson Monarch 2nd, prize winner at 'Frisco, son of the world's Grand Champion Crimson Elizabeth. J. M. De Vilbiss, Duroc Farm, Patterson, Cal.

REGISTERED BERKSHIRE WEANLINGS, both sexes, unrelated, $10 each. Also older boars and open gilts, or bred to a fine son of Grand Leader 2nd. J. M. Bomberger, Modesto, Cal.

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REGISTERED DUROCS—Fall farrowing Choice boars and gilts. Crimson Wonder and Model strains. Felton & Hoyt, Hanford, Cal.

POLAND-CHINAS — While the advertisement is short the hogs are long—of the big-boned type. C. A. Cooley, Durham, Cal.

GLENVIEW POLAND-CHINAS—Baby Pigs from best families for sale. From $15 up. Chas. R. Hanna, R. 3, Riverside, Cal.

REGISTERED POLAND CHINAS—The big litter, half-ton kind that have quality. Prize winners. Hale I. Marsh, Modesto.

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BIG TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

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REGISTERED HAMPSHIRES—Winners at P. P. I. E. Stock of all ages. W. T. Gatton, Box 231, Gardena, Cal.

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PURE-BRED BERKSHIRES—Stock of all ages. Brae Bourne Ranch, Route 3, Box 172, Santa Rosa, Cal.

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REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

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REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. T. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale J. H. Benedict, Lemoore, Kings county.

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KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

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REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Lakeport, Cal.

DUROC-JERSEYS—Write or call. R. R. Houston, Byron, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

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FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

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Her Grandsons and other Bulls from good-producing cows for sale.

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BERKSHIRES

Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 180837 and Breed's Model 165859, both winners of blue ribbons at State Fair.

Descriptive catalog upon request.

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REGISTERED BERKSHIRES.

I have a number of extra choice Bred Sows and Gilts, bred to or daughters of the First Prize Aged Boar at the P. P. I. E.

F. W. White, Elk Grove, Cal.

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SCIENTIFIC PRESS **PATENTS** PATENT AGENCY
911 Crocker Bldg., S. F.
Circular containing 100 mechanical movements mailed free.

Veterinary Queries and Replies.

[Answered by Dr. H. B. Wintringham, Petaluma.]

Correspondents desiring a reply by mail should send money order for $1.00. No charge is made when questions are answered through this department.

SOW WON'T BREED.

To the Editor: I have a registered sow that fails to come in heat. Her last litter is nearly a year old. She came in heat twice after pigs were weaned, but at that time I didn't want to breed her. Is there anything that can be done or will I have to kill her?—G. A. W., Shandon.

[Reduce her ration and give her plenty of exercise. Give her two drops Fluid Extract Nux Vomica twice a day.]

UDDER SORE.

To the Editor: Some time ago one of my cows had a milk sore at the front of her udder, which became infested with maggots before I noticed it. I have not been able to heal it up and it now gives off an offensive smell and is about the size of a half dollar. The cow is dry. When she was in milk her udder seemed to hurt her when being stripped. Please advise treatment. H. D. W., Oswald.

[Paint this sore with tincture of iodine three times a day, working it in well, till healed.]

CURE FOR SCOURS DOUBTFUL.

To the Editor: I notice an inquiry from a subscriber, in a recent issue, regarding scours in calves. I find the following receipt a perfect cure in my dairy at Elk Grove: Fill a quart bottle half full of air-slaked lime, then fill the bottle full to top with cold water. Shake well and let stand till water clears. To a quart of warm milk from the cow add one or two tablespoonfuls of the lime water and feed it to the calf at each feed, twice a day, but it is best not to overfeed or starve the calf at first. The calves are kept away from their mothers two or three days (if nursing), depending upon their condition of improvement. If not nursing, continue treatment till well. Calves should be treated as soon as taken sick. Too often they are neglected till inflammation or indigestion are too far along.—Mrs. A. C. Freeman.

[This might work in a few cases of simple diarrhoea but never in diarrhoea caused by microbean infestation.]

SOW'S LEGS BAD.

To the Editor: I have a brood sow that got lame in one of her hind legs, and remained lame for some time, finally getting over it. Then she got lame in a front leg and has been that way for three weeks. Now her leg is badly swollen, also her foot. She refuses to try to walk on it. She weighs about 300 pounds. Kindly advise me of treatment.

[Bandage the swollen parts with Antiphlogistine as per directions in the package. Give five grains Sodium Salicylate and five grains Hexamethlyamine three times a day in water.]

TOO MUCH TURPENTINE.

To the Editor: I saw in the issue of December 11 a prescription for worms, given to a mare nine years old: three ounces of turpentine followed six hours later with a quart of raw oil. I thought my mare was wormy, as she was a great feeder but wouldn't get fat, so gave the remedy prescribed. About 24 hours after her throat began to swell, she refused to eat, was thirsty but could not drink, and had two convulsions. The oil did not physic her till the third day. The fourth day she got so weak she couldn't stand up and seemed to begin to bloat, so I killed her. What was the real trouble, and was it caused by turpentine?—F. J. H., Escalon.

[Your trouble was caused by the turpentine being given without diluting it. Imagine taking a few drops of turpentine yourself, without dilution.]

PIGS DO NOT HAVE PILES.

To the Editor: Have a sow with six pigs about two months old and four of them look just like they had piles, as their rectums protrude an inch or two. What is the trouble and is there a cure? Also have a cow that freshened with her second calf about two months ago, that gives bloody milk out of one quarter. She was affected the same way before I dried her up the last time. She is in good condition and this quarter was never bruised so far as I know. What do you think is the trouble?—J. W. L., Visalia.

[Pigs do not have piles. Give them a good purge with Epsom salts, two ounces to each 100 pound weight. The cow has an infected udder. Give one ounce each, Fluid Extract Phytolacca and Ecohinacea twice a day for one or two weeks.]

MULE HAD FARCY.

To the Editor: I have a mule that seems to have the rheumatism. She has a good appetite and is in good flesh, has a very good glossy coat of hair, lays down quite often at nights, groans a great deal as if in pain and seems to take much effort in getting up, stumbles easily and reels while walking. She had "Farcy" last summer. While she is not a young animal neither is she very old. Can you recommend a cure through your columns?—F. M. L., Orosi.

[If this animal had "Farcy" last summer and the State Veterinarian were to hear of it he would destroy your animal, as "Farcy" is glanders. Give the mule one and one-half pounds Epsom Salts at one dose.]

ABSCESS FORMATION ON UDDER.

To the Editor: I have a cow whose udder is badly swollen between the front teats. When I first noticed it two days ago the surface looked a whitish cooler, but now it has taken on a deep cream color. Another place where the udder joins the leg looks wet all of the time and has a bad odor. Cannot find any spot where the discharge comes from. Milking seems to pain her. Have not been able to relieve her. Will you give me treatment?—J. W. H., Loomis.

[This is abscess formation due to infection. Bathe the bag three times a day with one per cent solution liquor cresolis compositus, well warmed. Give one ounce fluid extract echinacea every three hours together with one dram hexamethylamine.]

OPEN AIR SILO CHUTE.

[Written for Pacific Rural Press.]

A common silo chute is too hot for G. V. Rude and his men in Imperial county. So he has had a galvanized hopper made 3 feet square at the top, tapering to a pipe nearly a foot in diameter and a couple of feet long. Two hooks on the side of the hopper hang over the door sills of the silo. Enough three-foot joints of pipe were made to reach the ground from the top of the silo, tapering each from about 12 inches diameter at the top end to 11 inches at the bottom.

On opposite sides of each joint is a small chain about six inches long with a stiff wire three inches long as a cross bar at the end. Each cross bar passes through a hole near the top of the next lower joint. As the silo is emptied a joint at a time may easily be taken from this chute and the hopper moved down a little.

NOTICE!



Wishing to devote my whole time to other business, I have decided to sell out my

Shire Stallions at Cost

in order to dispose of them quickly. Included are the stallions which have been at the head of my stud for the last two seasons. All are sound and good stock horses.

I can also spare one pair of "in foal" mares and three stallion foals.

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Write or come and see him.
F. H. STENZEL,
San Lorenzo, Calif.

Oak Grove BERKSHIRES

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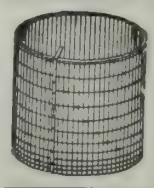
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Unsoundness and Faults in Horses.

[Written by Dr. H. B. Wintringham, Petaluma.]

I do not propose in this short article to cover all the conditions which condemn an animal in the eyes of a veterinarian, but to give the commoner conditions on which a buyer or breeder should condemn an animal. All buyers of animals should require a veterinarian's certificate of soundness before purchasing and be glad to pay his fee for such service. However, this fee can be saved by the buyer's condemnation of an animal for the faults I shall enumerate, and if the animal is free from these it is time enough to consult the veterinarian.

The old saying that a horse is as good as his legs has never been beaten for truth and is a rule for buying and breeding of the first importance.

The first requisite for examining an animal is to stand at a distance and examine him to get a general idea of his conformation. A long-legged horse with lots of daylight under him and whose barrel is narrow and tucked up will in every case be a hard keeper and is usually subject to colics. See that his legs are straight and support the weight evenly. This examination at a distance will often show up deformities which would be overlooked and also give an idea of the symmetry of the animal.

In examining the legs the following defects are fairly easy to note and are bad faults: Uneven growth of the hoofs, rough walls of the hoofs, dropped sole, flat feet, contracted feet, side bone in horses to be used at the trot, ring bone, contracted tendons, splints, spavin, and stringhalt. The gait should be free and elastic with the legs carried well under the body and not spraddling out in every direction. Coarse bones, coarse hocks and curbs are bad faults and should not be overlooked. In other words a horse's legs are what he depends on for his value and usefulness.

To determine the above, it will be necessary for the observer to have some knowledge of the normal appearance of the limbs. Any irregularities should be compared with the opposite limb. This is probably the simplest way to determine defects; compare one leg with the other. As a usual thing, one leg only is affected. Any hard lumps or growths would be brought out by this comparison.

Probably next in importance to his legs an animal's wind should be considered. Here any irregularities are almost certain to be shown up if the animal is given a good stiff drive with a load up hill. This treatment will show up such blemishes and faults as: heaves, broken wind and roaring. It will also test the animal for short windedness. Also whether the horse is a balker or a free puller.

The ability of the animal to digest his food and use it properly is determined by a short coupled body well let down in the flank. Manure passed in long shreads will show that there is something wrong with the mouth and teeth and such a condition will sooner or later set up intestinal trouble.

Compare one eye with the other and try to ascertain whether there is blindness present. Moon blindness is an incurable trouble and any other defect of the eyes should condemn an animal as a very suspicious symptom.

A rough staring coat not only denotes unthriftiness, but is often a symptom of many grave and incurable infectious diseases.

Pus or moisture discharged from any part of the body is serious, particularly in the region of the withers and along the top of the neck where any swelling may denote a fistula or poll evil.

Any of the foregoing should condemn an animal for work; many are amenable to treatment and some are hereditary, but all are serious faults both in the stud and in the harness.

EXPERIENCE WITH SUDAN GRASS.

[Written for Pacific Rural Press.]

With so much interest being taken in Sudan grass the following communication from Geo. E. Johnson of Ripon brings out some information which should be of value. He says: "I planted six pounds of Sudan seed last spring and have fed the grass both green and matured to my horses, cows and sheep and it was relished by them all. The seed makes very good poultry feed.

"I have a cluster from one seed on exhibit at the San Diego Exposition that weighed 5.8 pounds in the green state and was eight feet high. From the six pounds of seed that I planted I harvested seven good loads of hay and then cut most of it only once, because I wanted a large seed crop, otherwise I might have cut it three times at least.

"Sudan grass does well on poor soil, also on dry upland. My seed was planted on very gravelly soil, without water and with only one cultivation.

"In the rush of work this season I ran out of alfalfa for my cow, so cut Sudan grass for about two weeks. I found very little difference in the amount of milk. Then I got some fresh alfalfa in shock and gave her some of that, but fed the young stock Sudan. This wouldn't work though, as old Bossy thought that Sudan tasted better, as it was sweet like sorghum.

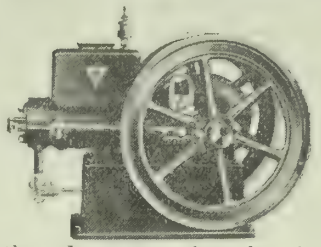
"I think that for a man who has a piece of thin alfalfa, Sudan would be a 'bonanza.' Disked in, in the spring, it can be cut about every 30 days."

BORAGE AND RYE FOR FEEDING.

To the Editor: Can you tell me what borage, a medicinal plant, is good for? Can it be used as green fodder for chickens or other animals? Can rye be used as grain for chickens with Egyptian corn mixed? Is the same mixture good for hogs? —R. K., S. F.

[Borage (Borago officinalis) can surely be used for chicken feeding—also as forage for other animals. It is grown in Europe to boil for "greens" and to make salad of for human consumption. Rye is about as good as wheat for chickens. It is held to be not so good for pigs as corn and barley and should be fed as meal in a wet slop and not dry.—Editor.]

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Poultry Questions Answered.

[By Geo. H. Croley, President Federated Poultry Association of California.]

VALUE OF SKIM MILK.

To the Editor: Please tell me the value of sour skim milk as compared with commercial meat scrap. Can you supply me with a copy of your paper, issue of Aug. 21, 1915? —J. W. F., Petaluma.

[In Oct. 30, 1915, issue we replied to a similar query regarding the comparative feeding value of skim milk and meat scrap, in which we explained how to discover the relative worth of these two articles. With a basis of $3.50 per 100 pounds of beef scrap we demonstrated the value of 100 pounds of skim milk to be 25 cents. It may be well to repeat a statement made at that time, viz.: "Unless it is quite sweet it is well to make skim milk into cottage cheese and dispose of the whey as waste; several who have added the whey to the feed report bad results."

It is impossible to supply a copy of the issue of Aug. 21; in fact the supply of nearly all reserve copies of all dates for the past 18 months is exhausted. This is because of the recent remarkable growth of circulation coupled with the requests by many new subscribers to begin with issues dated prior to the time of subscribing.]

TRAPPING PIGEONS.

To the Editor: I have a surplus of pigeons flying at liberty and want to catch them to cull and sell those not wanted. I have been told to soak wheat in whisky or brandy but fear it might kill them. Please tell me what you think of this plan or advise some other means to trap them.—P. A., Lodi.

[The plan of soaking wheat with liquor is practiced by some but usually the time required to rig up some sort of equipment to use in connection with this plan is more trouble and expense than to entice the birds into a trap. Without certain conveniences our correspondent would probably develop into a circus actor by the time he had finished catching the birds. The liquor does not permanently injure the birds. A large trap is easily and quickly made by any one. Usually a few square feet of wire netting and a few strips of wood are all that is necessary. It may be made in so many ways, shapes and sizes an attempt to describe any particular plan would probably be confusing. Just arrange it so the pigeons can go into it through an opening, we will say, about a foot square. If made so that the pigeons, when once inside, cannot easily escape through it all the better, but some means of closing it readily must be provided to insure keeping them in when it is time to catch them. In this enclosure put a pan or shallow box in which place a thin layer of a mixture of cumin seed, aniseed and coriander seed. Bruise the seed to create the strong aromatic odor which is so extraordinarily enticing to pigeons. They are simply crazy for it.]

POULTRY INSECT POWDER.

To the Editor: Please send formula for good insect powder to kill chicken lice.—F. E. W., Byron.

[One of the best combinations for a poultry lice powder is as follows: 70 per cent finely powdered tobacco, 10 per cent flowers of sulphur, 10 per cent powdered napthalene, and 10 per cent powdered lime.

The following is a formula that appears in "California Poultry Practice": 4½ pounds plaster of paris, 1 quart gasoline, ½ pint commercial cresol, and ½ pound flaxseed meal.

Mix gasoline and cresol together, then mix in all the plaster of Paris the liquid will absorb. Spread on boards or sheets of paper to dry; when dry mix in the flaxseed meal and store away in cans.]

HARDY TURKEYS WANTED.

To the Editor: We are raising the Bronze Turkeys here and our loss is enormous every season. Would the Narragansett or some other breed be better?—T. T. Yerrington, Nev.

[The Bronze variety of turkeys seems to thrive particularly well in Nevada when correctly bred and given reasonable care. There may be peculiar local conditions in this correspondent's neighborhood that are unfavorable for turkey raising, but it is more likely the trouble is due to inbreeding. It is absolutely necessary frequently to add new, vigorous blood to any flock of turkeys. The Narragansetts or some other variety might be better adapted to this inquirer's location, but we doubt if they would be better than the Bronze, particularly if they are turned out to forage, because it is considered the best variety of all for a large range.]

A POULTRY BOOK FOR SCHOOLS.

We have received from the publishers a copy of Twenty Lessons on Poultry, which is the title given by the American Poultry Association to the "poultry primer" that is intended for use as a text book in the seventh and eighth grades of schools and in boys and girls' clubs.

Some months ago, when we learned that this elementary treatise on poultry culture was to be compiled by C. T. Patterson, we anticipated that this would be an interesting as well as a thoroughly practical educational book, and we have not been disappointed. Because of the simple and direct—and we might say homely—methods adopted by Prof. Patterson in all of his teachings, we consider him the most practical educator in poultry culture in America. This applies to both utility and standard breeding for the reason that he advocates the breeding of utility fowls along standard lines and condemns the breeding of standard fowls for fancy points only.

This book is cloth bound, containing 92 pages, size 5x7 inches, illustrated with 55 engravings. There is an interesting appendix in which are suggestions for the organization and work of boys and girls' poultry clubs, contests, and fairs. Publishers, J. B. Lippincott Co., Philadelphia. Price 50 cents net.

The Hayward Poultry Producers' Ass'n have purchased the lot adjoining their new warehouse on B St. and have moved onto it the better part of their old warehouse to be used as an egg receiving depot. This Association is also amending its present by-laws to more fully meet present conditions.

Screw down the grease cups and refill them at least twice a day when using tractor.

POULTRY NEWS NOTES.

Meat in some form must be fed to laying hens if they are to do their best as producers of eggs for market purposes; an exclusively vegetarian diet greatly reduces the production of eggs, so says Prof. E. J. Dougherty of the University of California.

The Pasadena poultry show offered five $50 silver cups, three of which were won by J. D. Klepper as follows: first, for best bird in the show; second, for best bird in the American class; and fourth, for best cockerel in Plymouth Rock class.

A recent examination of over 100 gizzards from fowls supposed to have died from cholera contained no grit of any sort. In each case diarrhoea existed several days before death. The examination proved conclusively that indigestion alone was responsible for the trouble.

The Glendale Poultry show, held Dec. 9-11, was judged by nine judges who placed the awards, among the 500 fowls in the show room, between 10 a. m. and 1 p. m. of the first day. No admission fee was charged.

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Baby Chicks, Jan. and Feb. delivery ..... 12.00 " 100
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In the Utility Class at the P. P. I. E. Poultry Show our Leghorns received 4 awards, and on Eggs 1st and 2nd.
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Farm Poultry for Profit.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

HOW TO RAISE DUCKS.

Duck eggs will hatch in an incubator, under a hen, under turkeys or under ducks themselves with almost universal success if the moisture question is looked after.

But this question is the rock on which so many people stumble that it cannot be looked on as of no consequence. In the first place a person must try to use some reason, not take it for granted that because duck eggs need moisture they should be hatched in a river. A man wrote me last summer that he hatched his ducks out in 24 days. Well, the reason was plain enough, but he could not see it until I told him, "too much moisture and too much heat."

The extremes had developed the embryo until it matured beyond the bounds of the shell and they hatched, but gave up the ghost immediately. Now, when a wild duck sets she makes her nest on the ground, among tall grass or weeds, in fact as secluded a place as she can find, so that when she is off the nest the eggs are concealed from birds of prey; and in doing this she accomplishes two other things: the eggs are on the moist earth and in the dark as near as she can get them, but, mind you, although her nest is near water it is not in it. The first few days she stays close and does not go swimming; she keeps her eggs warm, still and dark. Here is our first clue towards successful duck hatching. After the first few days she takes a short feeding time and a dip, shakes the water from her feathers and goes back to the nest. Now as the embryo grows in size she leaves the nest longer each day, giving the eggs plenty of time to cool off. This is the secret in hatching livable ducks, not too much heat, proper moisture and plenty of time to air.

Moisture by Weeks.—The first week give no moisture at all, the second week sprinkle lightly three times, third week sprinkle a little heavier four times and the fourth week sprinkle every day just lightly before you put them back into the incubator. Run the heat from 102 the first week gradually up to 103 as the time goes on and at hatching time they will stand at 104. You may have to help some of the ducklings out of the shell, give air while they are hatching, if they appear to suffer, but keep the heat up.

Now after hatching duck eggs in an incubator it must be thoroughly sprayed and deodorized before putting hen eggs in it and the door left open several days to air.

After Hatching.—When the hatch is off, keep them 24 hours without food or water, then feed lightly of rolled oats and bread crumbs soaked in milk. Serve a dish of water with a deep saucer, but not in anything they can get into with their feet, and be careful the chill is taken from the water.

After three days it will be all right to serve a mash composed of two parts corn meal, one part wheat bran, one part shorts and one part rolled oats during the first two weeks. After this time the oats can be omitted and bran added. Always serve coarse sand or very fine ground shell in the mash, which must be moistened but not wet. If the ducks are for market feed as high as 20 per cent beef scrap in the mash and increase the corn meal. Towards the end of the tenth week they should be ready, or nearly so, for market. That is the time to sell; never carry them beyond eleven weeks if they are intended for market because after that time they will molt their first fea hers and lose flesh. Pekin ducks or Mallard are the most profitable of all for this coast, if a market duck is wanted. The Indian Runner is a good laying duck, but is a little small for market ducks, though of course plenty of them are sold and I do not know of any objections to them as a table duck, other than the size.

RAISING HEAVY BREED CHICKS.

We are now coming to the large breeds of chicks, and while properly speaking, all chicks may be treated alike in regard to comfort, cleanliness and other generalities, there must be a difference in feed if we expect to get the best results.

In raising birds for size the first thing is to make the bone, as that is the foundation. A chicken with small bone and light frame cannot stand to put on much flesh. Their legs get weak and wobbly and they get over fat so that they lay very few eggs. This is true of all the large breeds.

Best Feeds.—So the first thing to remember is the bone structure and the very best feeds I know of for this are oats, wheat bran and cracked wheat. I feed rolled or steel cut oats from the start every two hours. Then I feed sprouted oats several times a day as the chicks grow older and in the dry mash I use plenty of fine, ground bone, steel cut oats, wheat bran, ground barley and when chicks are two months old replace the steel cut oats with oats ground with the hulls on. I don't use corn of any kind, and if milk can be had very little beef scrap; but if no milk can be had, give from five to ten per cent meat meal or beef scrap in dry mash.

Of course if the cockerels were intended for broilers I would add corn meal to the mash, but not for breeding stock. If these rules are adhered to, you will have big, fine frames, good strong legs and plenty of room for a good supply of meat.

Other green feed besides the sprouted oats may be given, as all grasses are good and the mineral from them is a bone builder. Too much stress cannot be made of the value of skim milk in the raising of strong, sturdy chicks. It pays to buy it if you can get it, in preference to beef scrap.

As a result of the increasing demand brought to California breeders of purebred poultry through the publicity gained by them at the Panama-Pacific Poultry Show, quite a number have sold every surplus bird and have booked egg orders up to the limit of production. In a letter just received, one of the exhibitors writes in substance: "My present Standard stock is entirely sold and we cannot supply the demand for utility birds, while egg orders exceed the supply. When conditions permit, I intend to place an advertisement in the Pacific Rural Press."

At the Indiana Experiment Station a test of several pens gave the following average production of eggs per hen: Those supplied skim milk, 135 plus eggs; those fed meat scrap, 135 eggs; and the pens receiving no meat or milk produced only 32½ eggs.

Poultry Breeders Directory

GET YOUR DAY-OLD CHIX FROM ACTUAL PRODUCERS, who know what they have and who can stand back of their chicks. We are utility poultry raisers and our White Leghorn chicks this year are from pen of 635 that averaged 171.2 eggs each last year. Our Rhode Island Reds are also heavy winter producers. Owing to superior transportation facilities in Sacramento, quick delivery is assured. White Leghorn chicks, $12.50 per 100; Rhode Island Reds, $15 per 100. Book at once. Brooke Farm, 807 J St., Sacramento.

RHODE ISLAND RED ANNOUNCEMENT.—Remember that February chicks are what you want for early high-priced broilers, and R. I. Reds are what we recommend for February. The pullets make fine winter layers. We will have lots of them, but order early, as the demand for our sturdy little youngsters is heavy. We are booking orders now for delivery any time to suit you. Write now, the earlier the better. Free circular. Campbell Poultry Ranch, Campbell, Calif.

WE OFFER 10,000 R. I. RED CHICKS during Feb'y at $12.50 per 100. Lots of 1000 or more at $12. Also 4500 Barred Rock chicks at same price. 8000 White Leghorn chicks at $10 per 100, or $90 per 1000. All of these are pure-bred high-class stock. These prices are special to secure early orders. Write us your wants today. Free 65-page catalog. Pioneer Hatchery Co., 620 S. Spring St., Los Angeles, Cal.

BABY CHICKS—All sturdy youngsters from good stock and hatched right. Rhode Island Reds. Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

WELL HATCHED AND STRONG day-old chicks from healthy vigorous breeders. White and Brown Leghorns per 100 February, $11, March $10, April $9. Reduction in quantities. Let us send you our announcement. San Jose Hatchery, 373 Meridian Road, San Jose, Cal. **Chicks well hatched are half-raised.**

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired **Heavy Winter Layers.** W. C. Smith, Prop., Corning, Cal.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. Lay most when prices highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for heavy laying. Eggs, chicks, stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

WHITE PLUMAGE POULTRY FARM and Hatchery. Sells day-old chicks from healthy, vigorous breeders. White Leghorns at $10 per 100, $90 per 1000. Barred Rocks and Rhode Island Reds at $15 per 100. We sell the Victor Incubator and Brooder. Circulars free. H. A. Schlotthauer, Exeter, Cal.

ALL KINDS OF BREEDING and laying hens, roosters and pullets. Petaluma incubators, new annd used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minorcas, Buff, White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards. 2550 San Pablo Ave., Oakland, Cal. **Closed Sundays.**

THE SANTA CLARA VALLEY HATCHERY can supply you with many different varieties of chicks. We stand by the chick and the chick speaks for us. Have four second-hand Jubilee Incubators for sale, 500 egg capacity. 500 growing White Leghorn chicks for sale now. Jos. A. Bihn, San Jose, Cal., Route 6.

540 EGG "PIONEER INCUBATOR"—$45 freight prepaid, or $46 on terms of $15 down, and balance in three payments of 30, 60 and 90 days. We ship for your approval before you pay a cent. Free, 32-page catalog. Write today. Pioneer Hatchery, 620 S. Spring, Los Angeles, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396, Los Gatos, Cal.

WHITE PLYMOUTH ROCKS—If you are interested in high class stock, and want to buy as good as there are anywhere, write Mahajo Farm, P. O. Box 597, Sacramento, Cal., for catalogue Chicks. Eggs or Breeding Stock. Awarded all first prizes at California State Show, 1916.

BUFF ORPINGTONS, BUFF LEGHORNS, BOURBON RED TURKEYS, BUFF DUCKS—Winners at Riverside, Pasadena, Los Angeles and San Francisco. Breeding stock. Hatching eggs. Baby stock. Free illustrated booklet. The Ferris Ranch, R. 2, 144D, Pomona, Cal

WHITE AND BROWN LEGHORNS—If you want the best and are really interested in the highest class of stock write Mahajo Farm, P. O. Box 597, Sacramento, Cal., for catalogue. Chicks, Eggs, Breeding Stock. Awarded all first prizes at California State Show, 1916.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon geting same from your dealer. Manufactured by GEO. H. CROLEY CO., INC., Poultry Supplies, San Francisco.

WHITE LEGHORNS—RHODE ISLAND REDS—Trapnested and Hoganized. Breeding from not less than 200 egg birds. Booking orders now. Hatching Jan. 25th-June. Monta Vista Poultry Farm, Z. W. Wright & Son, Ontario, Cal.

BABY CHICKS — White Leghorns, Black Minorcas. We guarantee safe arrival and full count. Strong, vigorous chicks 1916 catalogue contains instructions on care of baby chicks. Free. Lasher's Hatchery, Petaluma, Cal.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

TRAPNESTED S. C. RHODE ISLAND REDS—Blue ribbon winners. Breeding stock. Eggs. Baby Chicks. New sanitary yards. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

FOR SALE—Barred Rock eggs from fine large prize strain. Extra fine layers. $1.50 per 15; $7.50 per 100. Miss F. W. Buckley, R. F. D., Box 71, West Berkeley.

BARRED ROCK COCKERELS—$2.50 each. Am booking orders for Rhode Island Red and Barred Rock chicks for February, 15c each. G. L. Hawley, Madera, Cal.

WHITE LEGHORNS—Hoganized. Bred to lay. Booking orders now for hatching eggs. $6 per 100, $50 per 1000. No chix. R. H. Dickinson, Los Gatos, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorca, White Leghorn stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

SILVER SPANGLED HAMBURG—White and Silver-Laced Wyandotte cockerels and eggs; Silver-laced Wyandotte hens. Tribble Nurseries, Elk Grove, Cal.

S. C. W. LEGHORN EGGS for hatching from selected, strong and vigorous hens. All 200 egg type. 15, $1.50; 100, $6. Jay Maxwell, Madera, Cal.

WHITE ORPINGTONS AND BUTTERCUPS—Hoganized and Tested—220 egg strain breeders. Chicks and eggs for sale. M. S. Woodhams, San Mateo, Cal.

BABY CHICKS from Hoganized Single-Comb White Leghorns, 4th and 5th awards at P. P. I. E. for 280 egg type. Tupman Poultry Farm, Ceres.

BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trap-nested stock. Fairmead Poultry Farm, Fairmead, Cal.

HERE IT IS—White Rock baby chicks, $15 per 100. Hatching eggs, $1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ceres, Cal.

ORPINGTONS: BUFF AND WHITE—Black Minorcas and Carneaux pigeons. Cockerels ready for service. Susan Swaysgood R. 2, Pomona, Cal.

WHITE WYANDOTTES—Blue ribbon winners. Cockerels, Pens, Eggs. Runner Ducks, $1 each. R. W. Stawetski, Route 2, San Jose, Cal.

WHITE LEGHORN BABY CHICKS that are hatched right, from good stock. Order now for spring delivery. Mrs. G. Logan. Morgan Hill. Cal.

EAST SACRAMENTO HATCHERY—Capacity 16,000. Special low price for large lots of chicks. Box 1205, M St. Road, Sacramento, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and cockerels. B. C. Quessenberry, R. 4, Lodi, Cal

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

TRAPNESTED LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

5-A EQUIPPED CHICKEN RANCH—Any amount water, one-half mile from Livermore. Less than $3000. E. P., care Rural Press.

BLACK MINORCA, R. I. Red, Buff Orpington Cockerels. Eggs for hatching Mrs. R. A. Holdridge, P. O. Box 282, Dixon, Cal.

RHODE ISLAND RED BABY CHICKS and Eggs. Heavy laying strain. Send for circular. Rosedale Ranch, R. 1, Hayward, Cal.

TRAPNESTED LEGHORNS—White and Buff Stock. Eggs, chickens. Arthur R. Schroeder, Box 179R, Mountain View, Cal.

BUFF ORPINGTONS—Utility winners Exposition. Runner Ducks, Eggs, Stock. Glendale, Fleming Ave., San Jose, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

S. C. RHODE ISLAND REDS—Hatching eggs, Baby chicks and cockerels. Mrs V. P. Hewitt, Dixon, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

HARES AND RABBITS.

LEADING RABBITRY IN AMERICA—Flemish Giants and New Zealands. Cut your living expenses. Catalogue free. Empire Rabbitry, Empire, Cal.

BELGIAN HARES—Young stock for sale. Hurd Bros. St. Helena, Cal.

TURKEYS, DUCKS AND GEESE.

BOURBON RED TURKEYS and eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914. Just as fine this year A. E. Balmer, Alhambra Valley, Martinez, Cal.

WHITE PEKIN DUCKS—Heavy layers, heavy table-fowls, rapid growers. Eggs, $1.00 per dozen; $5.00 per hundred. Baby ducks, $18.00 per hundred. **PEKIN DUCK FARM, Santa Cruz, Cal**

MAMMOTH BRONZE TURKEYS—THE BEST IN THE WEST—Extra special prices. Further information cheerfully given. Write now to secure best birds. Geo. A. Smith, Corcoran, Cal.

WANTED FOR COMMERCIAL HATCHERY—Bronze Turkey eggs, Pekin duck eggs and goose eggs. No fancy prices. Address Stag's Leap Ranch, Yountville, Cal.

HART'S BRONZE TURKEYS—Vigorous young stock. Eggs by the setting or incubator lots. Circulars free. Albert M. Hart, Clements, Cal.

FOR SALE—One pen of China Pheasants, one male and five females. L. R. McCoy, R. I, Box 205 Stockton, Cal.

PHEASANTS—Golden and Ringneck. Eggs from April on. T. D. Morris, Agua Caliente, Cal.

The Home Circle Page of the Pacific Rural Press

MRS. BEST'S BULLETIN.

My dear Friends: This is always the time of year when any woman wishes she were, if just for a day, a dress model or mannikin, so that she could try on all of the lovely novelties of the modiste's art for the season of spring, and see herself in them. Anyone having this entertaining experience with the present year's styles will certainly remember herself as a kaleidoscope.

This is also the time of year, I ought to add,

When poets from a theme sublime
Turn, and start to do
The annual crime of comic rhyme
Anent the "peek-a-boo"!

And there will be plenty of peek-a-boo materials in blouses and neck fixings.

By the way, rather transparent blouses of crepe de chine in solid tints are on display. And very refined and dignified I call them too, for all their rainbow hues. The front is generally pleated, making a soft yet shapely effect. In some I saw three buttons on the shoulders epaulette fashion, a most fetching decorative use of buttons. The crtical mind soon gets used to them, from seeing buttons nowadays in use so much where they aren't of any.

There's a perfectly daring employment of wide white borders on some sport skirts of the more pronounced types. To the practical this seems to be putting white where it is most easily soiled, but the idea is none the less picturesque.

In hats, the wing effects and stick-ups are put forward quite confidently. Some of the hats are very simple and elegant, and others are very elegant, not at all simple, but decorated with a mass of flowers or fruits.

Those corduroy negligees, rose colored or pink, that put a dash of the exotic into a boudoir, are now around $5, $10, $15—according to the grade.

Among the new things is jet jewelry, mostly in necklaces. Saw one necklace of jet and amber beads alternating, that looked good to me. Some of the designs have very large beads indeed—an inch in diameter. What struck me as most elegant was a one-piece plain jet bracelet in what I would describe as a Tiffany pattern. If jet is to be a vogue, there is no cause for alarm, since it is not dear—being, very roughly speaking, priced somewhere around $6 a pound. Or at least, so it seems to me.

Hist! here's an advance tip on something that is on the way for the athletic sister. 'Tis a new tennis blouse of white linen with little knickers to it for wearing under the skirt so that the blouse can't pull out of the waistband when the arm swings the swatting racquet.

Ah well, it seems that the sex secretly isn't resigned to being athletic until the blouse behaves. By the same token a man wouldn't feel at home on a baseball nine except in a stiff-bosom shirt.

Am I right? Devotedly,

ROSABELLA BEST.

(Note—Readers wishing information from Mrs Best, care of the Rural Press, will receive a reply if they enclose a stamped addressed envelope.)

MELT-IN-YOUR-MOUTH MARSHMALLOW PUDDING.

(This Week's Preferred Recipe.)

1 tablsp. gelatine soaked in ½ cup cold water for 10 minutes; then fill cup with boiling water.

3 whites of eggs, 1 cup sugar (scant) 1 teasp. vanilla.

Beat egg whites, then fold in the sugar, then geat in the gelatine and vannilla. Coloring matter may now be added to suit. The beating may take 20 nimutes.

This puding may be elaborated by putting chopped nut meats into it.

RECUPERATION.

This is a warning in behalf of warm homes. (Not warm bedrooms, unless they are used as sitting rooms—which they ought not to be.)

Warmth in the home is neglected too much on this coast in chilly evenings or in wet weather. It is particularly unhealthy to SIT in a cold, damp room full of dead, still air.

It is all right to have the house unwarmed while everybody in it is up and about and working. But every evening for a few hours before bedtime, when everyone relaxes, the sitting room ought to be perfectly comfortable. During this time the body will either recuperate from the day's battle with cold or it will lose more of its vitality. Let it recuperate.

This advice is particularly important as regards persons of the household who are away during the day at more or less inactive asks in schools, shops or offices, that are below par in comfort, which is too often the case. Natural resistance to these unfavorable conditions is gradually broken down if there is not a period of comfort for a few hours, and colds will result. People who are at outdoor, active tasks during the day are—strange as it may seem—better able to survive discomfort after and during working hours than those who are engaged in the so-called "sheltered" vocations. One is not sheltered by a roof over one's head if one feels chilled and miserable.

EXPERIENCE EXCHANGE.

A good tomato soup is sent in by A. M., Riverside: Pour can of tomatoes into saucepan, and a cup of oatmeal, small onion, a few pieces of celery and 3 pints water. This should boil slowly for two hours. Then strain and add a pinch of baking soda and a lump of butter, a teasp. sugar, and boil slowly twenty minutes longer.

This does not come under the head of experience, but since a reader asks, we leave it to the others to answer. The question is: Why is it that an undressed boy is a boy with his clothes off, while an undressed turkey is a turkey with its clothes on?

MILLINERY MODES.

Large black satin sailor shapes have facing of flesh colored satin; aigrettes are favored as mounts.

Glace effects are being shown even in the straws.

Flowers, foliage, ribbon and fruits have highly polished surfaces.

A NEW RICE DAINTY.

There was a Japanese at the San Francisco Exposition with something new in rice cookery.

The raw product consisted of chips of dried rice paste, hard and brittle. These he cooked, while you waited, by dropping them in boiling oil. As you watched, the flakes puffed up—became light and porous. They became crisp cakes, to be eaten while hot, and they were slightly sweetened and flavored with oil of lemon. Altogether they were delicious. They could also be cooked by placing in a bake oven, where they rose into the same light cakes.

The Japanese, who could speak excellent English, said the flakes were made of a special kind of rice unusually rich in gluten. It was ground, mixed with water and the dough, after drying in the air, was then sliced into thin flakes. These flakes were then desiccated on pans over a slow charcoal fire until perfectly dry, when they were ready for storage or export.

For cooking them in oil he used either cocoanut oil or olive oil. For these cakes a little of the oil would go a far way because the cakes do not absorb any of the oil and are just browned by it. But the oil must be very hot, and to be very hot a large quantity must be heated at a time, as only a large quantity of it will properly hold the heat without smoking and waste. The flakes cooked in oil generally lose all of the lemon flavor, because the flavor is so volatile. In the baked flakes, however, the flavor was well retained.

In the opinion of the writer, who tried them cooked both ways, they are preferable without the lemon flavor.

The Japanese said the puffed effect upon the rice paste was similar to that produced in popping corn.

The time will probably come when this form of rice food will be better known in this country, because it seems meritorious.

THIS WEEK'S BEST HOUSEHOLD HELP.

To keep the tots neat and clean at least cost, time and trouble—get them the blue jeans overalls or coveralls; these can be ready-made or homemade. It is as cheap to buy them as make them, and the time is saved as well. Once tried, a garment like this will be discarded with reluctance both by the mother and the wearer.

Cheese is extremely more digestible cooked than uncooked.

BANISH THE GLOOMS.

By Sunbonnet Sue.

Why do I smile when others look glum? Why do I beam through the day?

My thoughts are of things that are wholesome; my mind is not sick with ill-nature.

As is my mind so is my countenance; it reflects like a mirror my inward mood.

I am but human. I am ambushed by glooms, and the doldrums beset me. But I do not rise up to welcome them. I shun them.

For such is my argument, the way of my reasoning: If I can direct my footsteps to take me whither I list, I do not have to follow them in paths I abhor.

Then of my thoughts shall I also be master; and they shall turn to the light and the sunshine and not to the shadow and gloom.

In this way I shall have content in my heart, even though age be upon me.

I turn the course of my mind from the paths full of pain till I tread the aisle of good humor.

And this is my secret of bliss.

Berkeley, Cal.

WHY CHILDREN LIE.

In an interesting address recently, Mrs. John Woods Beckman discussed, before the Child Welfare Study Club of Berkeley, the subject of falsehoods among young children, answering the question, "Does a child of two or three years old tell lies?" Her belief is that youngsters of that age do not deliberately tell untruths; it is more likely that their imaginations are running riot.

A point Mrs. Beckman emphasized is that it is dangerous to mold the plastic natures of young children by fibbing to them ourselves. Untruths, however immaterial, told before children who do not understand the emergencies of polite usage, may start them on a career of fibbing that can not easily be checked. But the most enlightening of her suggestions was that an unnatural strain is put upon the character of the very young if we demand direct answers concerning some fault or mischief, constituting a kind of parental "third degree." Here the tendency of the child, through fear, not depravity, is to evade a confession and invent a false answer. Until the child is farther advanced in years and training, indirect, tactful questioning to learn the desired facts is advocated. And correction when needed should be in the form of proper reasoning to make a repetition of the offense seem undesirable.

THE EMBROIDERY MANIA.

From napkins the embroidery fad has passed on to the lunch cloths. Bright colors of course are the thing, something to match the set of napkins you have just finished.

The borders of the lunch cloths receive this embroidery treatment, the centers being left blank. Sometimes lace insertion of Russian or Italian thread is used to bar off the border from the center, while the edges of the cloth are hemstitched.

NEVER SATISFIED.

"I want to be a chrysalis,"
The caterpillar cried;
But when a chrysalis he was,
For something else he sighed.

"I want to be a butterfly,"
He dreamily lamented:
But when he got his wings and flew,
He still was discontented.

For when a shower came on he sobbed
In unprotected grief,
I want to be a grub again,
Beneath a cabbage leaf!"

—Cincinnati Enquirer.

WHERE STANLEY FOUND LIVINGSTONE.

To many of little more than middle age it seems only a few years ago that Henry M. Stanley came out of the African wilderness with the message that thrilled the world: "I have found Livingstone."

For years David Livingstone, the missionary-explorer, had been lost in the heart of the dark continent. Then two newspapers sent Stanley to find him, and for months he, too, was lost, and the whole world waited. And the news came at last that Stanley had found Livingstone living with his negro converts at Ujiji, on the banks of that mysterious Lake Tanganyika. You remember the picture of the two men meeting there in the wilderness. Stanley, the young American newspaper correspondent, stalwart, upstanding, springy of step—Livingstone aged, broken, a faded old army cap in his trembling hand as the two advanced to meet each other.

How far away that seemed then. How oddly sounded the new names of places, unheard of before, which Stanley brought with him out of that mysterious, unknown land.

And yet it was only forty-five years ago that Stanley found Livingstone. Only four years previous Livingstone discovered Lake Tanganyiki. Only forty-nine years have elapsed since the first white man gazed upon that vast sheet of water. And here, in the news dispatches since New Year's, was an account of a naval encounter upon Lake Tanganyika between British and German forces. Germany and Britain have colonies that border the lake and they are disputing there upon that lake and around its shores. Fifty years ago it was unknown to the civilized world.

Another news item recently told that a daughter of David Livingstone had just returned from a visit to the spot in Africa where Livingstone's heart was buried. He died among the negroes of the interior of Africa in 1873 and two of his negro converts to Christianity buried his heart beneath a tree on the bank of Lake Bangweolo and carried his body to the coast from whence it was conveyed to England and buried in Westminster Abbey. But the heart remained in the wilderness, and twenty-five years passed before a white man found the spot where it lay beneath a great mpundu tree.

The spot is marked by a concrete monument with a bronze inscription, and a cottage stands near, in which was a book which the account says "contained the names of a large number of travelers and adventurers from all corners of the earth." The daughter of the great explorer found that the monument had been disfigured by relic hunters, and the bronze slab carried off by a savage chief, and the book of signatures had been stolen. She made an appeal to the press of England for money to replace the monument and inscription and try to recover the book of signatures.

The amazing thing is that this spot, which twenty-five years ago was in the heart of Darkest Africa, is now on a well beaten path of civilization. How fast the prophecies are coming true:

"For the earth shall be full of the knowledge of the Lord, as the waters cover the sea," and "The wilderness and the solitary places shall be glad for them; and the desert shall rejoice; and blossom as the rose."—Kansas City Star.

THE HUMAN HEART'S JOB.

Dr. J. Strickland Goodall illustrates the enormous power of the human heart in a striking way:

Take a 2-pound weight in the palm of the hand, resting the elbow upon a table, and raise and lower it from the level of the elbow to the shoulder. This is exactly the work done by the heart at each beat. Do this seventy or eighty times a minute and see how long you can keep it up. At each contraction the heart does enough work to lift a 2-pound weight one foot. The heart of a young and hearthy person is almost immune to weariness or strain. But if its muscles be weakened by the accumulation of body poisons or by anemia, it is very easily strained. The heart has been known to break from the strain of sudden emotion. Anger will increase the work of the heart from 152 to 224 foot-pounds a minute. Therefore, "Keep your temper" is good physiological advice.

Running to catch a train, running upstairs, or any sudden and unusual exertion puts a great strain upon the heart. The healthy heart of youth is equal to such strains; not so the heart that has been weakened by dissipation or old age. Doctor Goodall tested the heart of a healthy man before he ran to catch a train; it was beating seventy-six to the minute and doing 152 foot-pounds of work a minute. He tested it immediately after the run; it was beating 180 to the minute and doing 360 foot-pounds of work a minute.

SCARLET FEVER.

Scarlet fever is one of the most dangerous diseases. It is communicated by personal contact, by infected articles such as clothing, rags, hair, paper, or discharges from an affected person.

The discharges from the skin, throat, nose and mouth are extremely dangerous, and those from the eyes, ears, kidneys and bowels are also dangerous.

During the scaling of the skin period, which sometimes lasts for 70 or 80 days, the disease is believed to be most communicable.

Scarlet fever is fatal mostly to children under 10 years of age. Since mild forms of the disease in adults may and frequently do communicate fatal forms of the disease to children, the isolation of those even mildly sick with, and convalescent from, scarlet fever is important.

Another important thing to remember is not to let a dog, cat or any other animal that has been in contact with a case of scarlet fever go near a child. No cat or dog should even be permitted to enter the sick room.

BUSY NON-PARTICIPANT.

In every age there comes to view
The man who speaks in lofty tone,
And tells the others what to do,
But finds no task to make his own.

—Farming Business.

Demonstrated. — "Mother," called Johnnie, "these trousers that you made me are too tight." "Oh, no, they're not, Johnny," answered his mother. "They are so, Mother. They're tighter than my own skin." "Now, Johnny, you know better than that." "It is so, Mother. I can sit down in my skin and I can't sit down in these trousers."

One Instalment.—"Is this piano yours?" "Oh, about an octave of it."—Boston Transcript.

A Wonderful Opportunity Awaits Every Home Furnisher in the Southwest

BARKER BROS. GREAT 36th Annual Clearance Sale

Important notice to those who live away from Los Angeles

—So many and so varied are the economies offered during this great sale, that you can well afford to come to Los Angeles specially to take advantage.

—The savings on furniture will average fully 15 to 25 per cent. from our regular low prices—on some articles a little less—on others even more. It is quickly apparent, therefore, that the savings on a purchase of any reasonable amount will easily cover the cost of coming to Los Angeles.

—For instance, in a general way, a purchase of $20 will save you enough to pay for a round trip of 50 miles—a purchase of $50 will save you enough to pay for a round trip of 150 miles; and these are minimum savings—on many articles the savings will be two or three times as much—and in some instances even more.

—In addition to the furniture offerings, the savings on many articles in our other home furnishing lines are also an important factor. This is an opportunity not likely to be duplicated. Take advantage of it.

Barker Bros
ESTABLISHED-1880

ONE OF THE LARGEST COMPLETE HOME FURNISHING HOUSES IN THE WORLD.

—If unable to visit Los Angeles, write us and let our Mail Order Dept. supply your wants from the special values in this sale.

724-738 South Broadway, Los Angeles

WE PAY THE FREIGHT WITHIN 100 MILES.

You won't mind a hard day's work if you can look forward to a restful sleep on a

Leggett Spring

The Leggett Spring is comfortable and sanitary to the highest degree. Is absolutely guaranteed not to break or sag. **Will last a lifetime.** At least a third of your lifetime is spent in bed.

House cleaning time is approaching. Better discard your old uncomfortable spring and put in a Leggett. If you will write us we will gladly tell you all about it.

Pacific Spring Bed Co., Berkeley, Calif.

We Have Plenty of Money to Loan

on good-producing farms.
Quick action where the security is ample.

BERKELEY BOND AND MORTGAGE COMPANY
FIRST NATIONAL BANK BLDG., BERKELEY, CAL.



There is no politics in the Farm Journal, but we hate whiskey like we hate all other poisons.

In any fight where one side is for decency and morality, you will find the Farm Journal squarely for that side. It is against whiskey and war and get-rich-quick schemes, and letting Mother split the kindlings. It costs $1 for 5 years. Or send today for free sample of Farm Journal and free copy of Poor Richard Almanac for 1916.

The Farm Journal

143 Washington Square, Philadelphia

The Markets.

Unless otherwise noted, prices quoted are f. o. b. San Francisco.

San Francisco, Feb. 2, 1916.

WHEAT.

According to reports from the north, there is still a heavy stock of wheat on hand, owing to lack of ships. Sales have been rather heavy of late, however, and with increasing demands in the local market for both milling and lower grades the market is firm, with a further advance in some lines.

Cal. Club, ctl.	$1.80 @1.85
Northern Bluestem.	1.97½ @2.02½
Northern Club	1.85 @1.87½
Northern Red	1.85 @2.05

BARLEY.

The recent Eastern movement, together with a much more active local demand for feed, have brought about another slight advance, and the demand continues strong.

Shipping, ctl.	$1.40 @1.45
Choice Feed, ctl.	1.37½ @1.40

OATS.

All feed grades are quoted higher, partly in sympathy with barley, and partly owing to a larger demand, both locally and for shipment, export business being reported heavy in the East.

Red Feed	$1.35 @1.37½
Red Seed	1.45 @1.65
White	1.50 @1.55

CORN

Eastern yellow is strong, but no higher, the only change being a slight advance on Egyptian, which has been moving off well.

Eastern yellow, ctl.	$1.80 @1.85
Milo Maize	1.40 @1.45
Kaffir	1.65 @1.70
Egyptian	1.50 @1.55

BEANS.

The market still presents no feature of much interest, as the shipping demand continues very quiet for all varieties. Nearly everything is steadily held, and in some lines, with short supplies, values still tend upward; but in a number of lines there is a little easiness. Bayos this week are quoted slightly lower. Tepary beans are quoted, though sales in this market have been too small to establish very definite values, and only good stock would bring the price quoted.

(On wharf, San Francisco.)

Bayos, per ctl.	$4.90 @5.00
Blackeyes	3.60 @3.70
Cranberry Beans	4.75 @4.85
Horse Beans	3.25 @3.50
Small Whites (south)	5.80 @5.90
Large Whites	5.75 @5.90
Pinks	4.30 @4.40
Limas (south)	4.50 @4.60
Red Kidney	6.50 @6.75
Mexican Reds	4.50 @4.65
Tepary Beans	4.00

RICE.

The Pacific Rice Growers' Association reports the market still quiet, with offers for finished rice below the views of sellers, though it is believed that a firm attitude on the part of growers will result in more satisfactory conditions. Mills are said to be working for lower prices on the rough grain, but it is very doubtful if a decline would stimulate the demand of any extent, and an exhibition of weakness might do more harm than good.

SEEDS.

There is considerable inquiry for alfalfa at present, and good clean stock is quoted at a slight advance, though inferior seed may be had somewhat cheaper.

Alfalfa, per lb.	19 @20 c
Melilous Alba	30 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	4¼ @ 4½c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Sudan Grass	40 c

HAY.

Arrivals have been light for the last week, and the market has also been strengthened by a very heavy demand on this market from outside points, causing large withdrawals from local warehouses. An enormous quantity of hay is being fed all over the state, owing to storms and short grass, and the result is a very firm market for the cheaper grades, wild oats and stock hay and alfalfa all being quotably higher. The outlook is for a very strong market until the new crop appears.

No. 1 Wheat	$12.00 @15.00
No. 2	10.00 @11.50
Tame Oats	10.00 @16.50
Wild Oats	10.00 @12.50
Alfalfa	12.00 @15.00
Stock Hay	7.00 @11.00
Straw, per bale	.25 @ .40

FEEDSTUFFS.

Owing to the absence of green feed, and the export demand for grain, all lines are quite firm and move well. Bran, middlings and rolled barley are all higher in sympathy with grain, and best pulp has also advanced.

(Wholesale prices per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$22.50 @23.00
Alfalfa Meal, per ton.	20.00 @21.00
Alfalfa Molasses Meal per ton	21.00 @22.00
Bran, per ton	26.00 @27.00
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00 @25.00
Cracked Corn	39.50 @40.50
Middlings	33.00 @34.00
Rolled Barley	29.00 @30.00
Tankage	45.00
Rolled Oats	29.50 @31.00

VEGETABLES.

The heavy storms and cold weather have done enormous damage to vegetable crops nearly everywhere, and prices generally are higher, with very light supplies coming in, even poor stuff being rather firm. Even local vegetables are coming in slowly, and Southern goods are scarce and poor. Cabbage, cauliflower and sprouts are all advanced sharply, and peas and beans were out of the market for several days. Peppers and eggplant are very scarce, and southern tomatoes are higher. Fancy celery is held at extreme prices, and lettuce is very firm, though better arrivals from Sacramento have relieved the shortage, preparations are under way for the asparagus season.

Cabbage, ctl.	40 @50 c
Cauliflower, doz.	.50 @1.00
Sprouts, lb.	4 @5 c
Rhubarb, box	1.25 @1.50
Srawberry Rhubarb	1.75 @2.00
Peas, southern, lb.	10 @12 c
String Beans	8 @10 c
Peppers, bell, lb.	15 @25 c
Tomatoes, L. A., crate	1.75 @2.50
Eggplant, lb.	8 @10 c
Celery, crate	3.00 @4.50
Artichokes, doz.	.50 @1.00
Lettuce, small, crate	1.00 @1.50

POTATOES AND ONIONS.

River potatoes are hardly as high as last week, but offerings are light and closely held. Oregon and other fancy offerings are very firm, and values are well maintained on onions from all sources, as the available supply is very light.

(On Wharf.)

Oregon Burbanks	$1.60 @1.85
Salinas Burbanks	2.00 @2.10
Delta Burbanks	$1.10 @1.65
Sweet Potatoes, ctl.	1.35 @1.90
Onions, Delta, ctl.	1.85 @2.25
Oregon	2.00 @2.50
Garlic, per lb.	10 @12½c

POULTRY.

Turkeys are getting scarce, and live birds are quoted higher. Old hens are now coming in quite freely, and with limited demand prices are inclined to easiness. Young chickens, however, still clean up readily, and young broilers and roosters are a little higher.

Turkeys, dressed	24 @30c
Live Turkeys, lb.	22 @23c
Broilers, 15 lbs. to doz. and less, lb.	32 @35c
do, over 15 lbs. to doz.	23 @25c
Fryers	22 @24c
Hens, extra, per lb.	17 @19c
Small	17 @18c
Smooth Young Roosters, per lb.	19 @20c
Squabs, per doz.	2.00 @4.00
Geese, per pair	2.25 @3.00
Ducks, young, lb.	18 @19c
Old	14 @15c
Belgian Hares	9 @11c

McFarland, Cal., Jan. 28, 1916.

Pacific Rural Press:

The ad. I had you put in your paper in December has brought me more orders than I can fill, so kindly discontinue it for the present and send bill. I assure you that any time I have anything to advertise, your paper will be the medium I will use.—T. M.Calvert.

BUTTER.

The storms in the south and cold and wet in the north have tended to curtail supplies, and the Los Angeles market advanced sharply. This naturally stiffened the local values, and the increased demand has enabled storage operators to move a good deal of stock.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	28½	29	30	30½	30	30
Prime Firsts	27½	28	29½	29½	29½	29½
Firsts	26	26½	27	27	27	27

EGGS.

Bad weather at the end of last week caused the upward movement, with very light arrivals; but the high level of the previous week was not reached, and now the market is dropping again, though much higher than last year. Quite a bit of Eastern storage stock has come in lately.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	33½	35½	37	36	33½	33½
Sel. Pullets	31	33	36	35½	32½	32½

CHEESE.

There is very little demand at the moment, though with light offerings prices are well maintained. Larger supplies of Monterey cheese are expected shortly.

Y. A.'s, fancy	17½c
Fancy Calif. flats, per lb.	17 c
Monterey Cheese	17 @18c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	29	32	34	32	32	32
Eggs	35	35	40	44	44	35

DECIDUOUS FRUITS.

Local apple prices show no quotable change, but the local movement has been better for the past week than for some time previous, and stocks here are not unwieldy. Nothing else in this line is offered.

Apples, Cal. Newtown	$ .75 @1.25
Pearmain	.65 @1.00
Greening	.65 @1.00
Baldwin	.75 @1.25
Oregon Spitzenbergs	1.50 @2.50
Jonathan	1.25 @1.75

DRIED FRUITS.

The dried fruit market continues in the old rut, with little change in prices, no very urgent demand from any quarter in most lines, and hardly enough fruit offered in the country to establish a market, according to local packers. Peaches are the only article to show any weakness, and they are in much better shape than a few months ago, as there is no great amount left in the state. There is scarcely any demand from the East, however, and packers regard purchases at present as a favor to the seller more than anything else. Accordingly nothing much can be expected in the way of prices, and 5c. would be about the top figure for the best offerings if urged for sale now, while any ordinary lots would have to go much cheaper. In view of the shortage in other lines, this fruit should pick up later on, but the packers are making no predictions. Apples are steady, with very little business, but no pressure to sell; apricots and figs are all cleaned up, and prunes are closely held, with a fair and growing demand. The New York Journal of Commerce says:

"Prunes for future shipment are irregular. Some of the smaller packers show a tendency to cut prices a trifle below the quotations that were being named by the more prominent operators.

In spite of the tendency, the larger packers who are said to be in control of by far the larger share of stocks are holding a very strong tendency and making no effort to meet the low level.

Coast Apricots and Peaches continue firm with only light buying in progress for future shipment. Prices show no quotable change and stocks are said to be gradually cleaning up. Spot conditions are quiet, with moderate sized quantities in evidence and a light demand. Prices are generally held firm in all quarters."

Apples	6½ @7½c
Apricots, per lb.	9 @12 c
Figs, white	5 @6 c
Black	3½c
Calimyrna	8 @10 c
Prunes, 4-size basis	5 @5½c
Peaches	3½ @5 c
Pears	4 @7 c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6¾c
London Layers, 3-crown, 20-lb. box	1.25
Imperial Clusters, 6-crown, 20-lb. box	2.50
Bulk, layers, 50-lb. box	2.75

CITRUS FRUITS.

Oranges and grapefruit have been moving much better in the San Francisco market since the weather cleared a little, and values are well maintained, but without any further advance. There is some talk, however, of still higher prices at shipping points.

Oranges are being held firmly, the prices in southern part of the State having been advanced slightly during the past week, the price now being $2.75 f. o. b.

At New York on Monday, Jan. 31st, navels averaged on auction from $2.60 to $3.60 per box; lemons averaged from $3.65 to $4.20. At Chicago the same day oranges averaged from $2.50 to $3.75; and lemons $3.50 to $4.10 per box.

Shipments of oranges from southern California for the season up to Jan. 29th, were 3057 cars, as against 3706 cars to same date last year, and of lemons 1267 cars as against 794 cars last year.

(Wholesale prices, San Francisco.)

Oranges, Navels	$1.50 @2.75
Tangerines	1.50 @2.00
Grapefruit	1.75 @2.25
Lemons, box	1.50 @3.00

Special Live Stock Market Report.

The first receipts of livestock since the last blockade of the railroads arrived the early part of this week. It is probable that on this account receipts will be heavy for some time.

The dressed meat market shows a good deal of strength on cattle, particularly on light stuff. Heavy ones are not so much in demand and are not moving so freely. Dressed mutton is in strong demand and continues to be scarce, practically all of the supplies at this time coming from the Nevada, Utah and Idaho feed lots. The storm last week worked havoc with winter lambing in low sections, although the extent of this condition is not definitely known.

Hogs are again marked up this week, the dressed market being some stronger in sympathy with the packing demand. Shipments have been delayed on account of the storm some, but there is a general feeling of strength, both by packers and country holders. One buyer states that a lot of farmers are holding for eight cents.

WOOL.

There is considerable activity in wool of all kinds locally and prices are marked up as a result. Country holdings are pretty well cleaned up and those who still have wool on their hands have not got choice goods. Dealers are making quite heavy shipments east, presumably to be prepared to handle the spring clip which will begin arriving in a month or six weeks. The Boston market is holding firm, but the feeling is slightly easier in foreign markets, the belief being that the top has been reached.

Lemonettes, box ..... 1.25@1.75

HONEY.

There has been a little export movement in the last few weeks, and with local jobbers also out for supplies for the spring trade, the market is pretty well cleaned up and prices show a firm tendency.

Water White, comb	13@15 c
Amber	8@12 c
Water White, extracted ..	7@ 8 c
Light Amber	3@ 4 c
Dark	2@ 2½c

NUTS.

The Almond Exchange has withdrawn prices on 1915 nuts, and values are nominal, as there is nothing of any consequence left in the country. While there seems to be no urgent demand locally any good stock still available should be worth about the Exchange price here. The last crop is estimated at 3800 tons, of which 75 per cent was controlled by the Exchange, the crop being considered the largest in the history of the state. Many contracts subject to approval of prices for 1916 almonds are now coming to the Exchange from the interior of the country, notwithstanding the offer of certain packers to sell below the lowest price named by the Exchange, regardless of what it might be. In fact, it is believed that such tactics will ultimately tend to strengthen the growers' organization.

(Prices f. o. b. San Francisco.)

Almonds (1915)	Nominal
Walnuts (1915):	
Budded, per lb.	17½c
No. 1	14 c
No. 2	11 c
Jumbo	17 c

LIVE STOCK.

Hog prices again show several changes, prices being higher on all weights, with smaller arrivals, while the range is hardly so great between different weights. Sheep and lambs also are quite a bit higher, shipments to this market having been light, with prospects that they will not increase greatly for some time.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, S. F.)

Steers, No. 1	6¾ @7 c
No. 2	6¼ @6½c
Cows and Heifers, No. 1.	5¾ @6 c
No. 2	5¼ @5½c
Bulls and stags	4 @5½c
Calves, light	8½ @9 c
Medium	7½ @8 c
Heavy	6½ @7½c
Hogs, grain-fed:	
100 to 150 lbs.	6¾c
150 to 175 lbs.	7 c
175 to 250 lbs.	7½c
250 to 327 lbs.	7 c
Prime Wethers	7¼ @7½c
Full Wool Lambs	8½ @9 c

DRESSED MEATS.

Seers	10¼ @10½c
Veals, large	12½ @13 c
Small	13 @14 c
Prime Wethers	7¼ @7½c
Lambs	14½c
Hogs	10 @10½c

WOOL.

While the spring clip will not start for some time yet, buyers have been showing a little more interest in old clips, in response to a stronger market in the East, and prices for several grades are up a little.

(Prices paid in the country.)

Sacramento Valley, lb.	17 @18 c
Southern, year's staple	14 @15 c
Six months	12 @13 c
San Joaquin (defective)	10 @11 c
Northern, free	12 @15 c
S'thern Mountain, free	12 @13 c
Tehama Co., free	13 @14 c

HORSES.

Offerings of horses in the local market in the last few weeks have been the largest in some time, and included some very fair assortments of desirable heavy stock. All the sales have been pretty well attended, and there has been some spirited bidding for the more desirable drafters, which always find a ready market. Prices for the heaviest horses are higher. Dealers say there is no demand here for horses under 1,000 pounds, and inferior animals, of which a good many have been sold by firms putting in motor vehicles, go for poor prices.

(Approximate values at San Francisco, based on auction sales.)

Drafters, 1700 lbs. and up	$250@300
Drafters, 1550 to 1650 ..	150@225
Chunks, 1350 to 1500 lbs.	150@175
Wagon horses, 1050 to 1350 lbs.	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@ 75
Farm Workers	50@100

GROCERIES.

Flour has taken another jump, the top price now being the extreme figure of $7 per barrel, and is strong at the advance, in sympathy with wheat. Local refinery prices for sugar have also been advanced.

GROCERIES.

(Wholesale prices, San Francisco.)

Flour, Family Extras, per bbl.	$6.60@7.00
Sugar, granulated, 100-lb. bags:	
Cane	$6.20
Beet	6.00

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	28.60	28.00		28.80
" 9	25.33	26.66	26.00	28.16
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	26.66	30.66	28.00	36.66
Feb. 6	26.68		26.80	
" 13	26.74		27.00	
" 20	29.00		27.16	
" 27	29.10		27.00	
March 6	27.00		25.25	
" 13	24.66		24.00	
" 20	23.00		22.50	
" 27	22.91		23.00	
April 3	23.00		22.23	
" 10	23.08		22.00	
" 17	23.00		22.00	
" 24	23.00		22.00	
May 1	23.08		22.00	
" 8	23.00		23.08	
" 15	23.58		23.00	
" 22	23.58		23.00	
" 29	23.50		23.00	
June 5	23.90		23.00	
" 12	24.08		23.83	
" 19	25.16		26.00	
" 26	25.50		26.16	
July 3	25.83		26.16	
" 10	26.21		26.00	
" 17	26.58		26.00	
" 24	25.41		25.50	
" 31	27.00		26.00	
August 7	27.00		26.00	
" 14	27.00		26.00	
" 21	27.50		26.00	
" 28	28.00		26.00	
Sept. 4	28.00		26.00	
" 11	28.00		26.00	
" 18	27.00		26.00	
" 25	26.50		26.00	
Oct. 2	25.91		26.00	
" 9	26.91		26.00	
" 16	27.00		26.00	
" 23	27.00		26.00	
" 30	27.00		26.00	
Nov. 6	26.55		26.00	
" 13	28.11		26.33	
" 20	29.59		28.66	
" 27	28.90		28.80	
Dec. 4	27.41		26.50	
" 11	27.33		23.83	
" 18	43.08		36.00	
" 26	26.40		28.00	

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 30	28.16	28.83	26.66	36.66
Feb. 6	23.33		23.75	
" 13	23.00		25.10	
" 20	23.60		23.58	
" 27	21.40		20.80	
March 6	20.50		19.00	
" 13	20.66		19.00	
" 20	21.00		19.66	
" 27	20.83		18.50	
April 17	22.00		23.08	
" 24	21.80		22.25	
May 1	26.16		22.00	
" 8	23.33		22.00	
" 15	23.16		22.00	
" 22	23.75		21.91	
" 29	23.08		21.83	
June 5	22.50		20.70	
" 12	22.00		21.00	
" 19	22.00		20.00	
" 26	23.33		23.83	
July 3	23.83		22.50	
" 10	25.50		25.00	
" 17	24.83		24.66	
" 24	25.41		25.50	
" 31	25.80		25.80	
August 7	30.50		28.00	
" 14	31.16		28.66	
" 21	31.25		30.16	
" 28	30.58		29.16	
Sept. 4	30.08		30.16	
" 11	34.33		31.66	
" 18	37.08		33.37	
" 25	38.66		34.66	
Oct. 2	40.08		37.33	
" 9	40.08		38.00	
" 16	45.50		40.00	
" 23	48.08		42.00	
" 30	48.58		42.83	
Nov. 6	51.08		43.00	
" 13	54.25		45.33	
" 20	53.83		45.00	
" 27	52.90		43.40	
Dec. 4	43.91		40.16	
" 11	41.16		37.33	
" 18	27.83		28.00	
" 25	40.80		36.60	

Be sure to use the dust trap all the time. Drain the radiator and motor every night during cold weather.

Almond Growers

Again, the "cut any Association price" speculators are at work offering to cut the California Almond Growers' Exchange's lowest price on 1916 almonds.

In so doing these parties admit their inabiltity to sell to as good advantage as the Exchange.

California Almond Growers' Exchange

SAN FRANCISCO, CAL.

Publisher's Department

G. W. Harney of Marysville says that the two books by Prof. Wickson known as 1000 and 2d thousand Questions in California Agriculture Answered are as valuable as the Encyclopedia of Horticulture. Every farmer should have these books.

LETTER OF APPRECIATION.

Here is a letter in which the writer expresses his admiration for the Pacific Rural Press:

"Herewith my renewal to the Press. I would regret very much to be without it. I consider a five-year file of the Press of as great a value to a California fruit rancher as a course in an agriculture school; perhaps more so, for aside from agricultural topics, we get the benefits of discussion on other economics. Suggestions from your subscribers are of great value, also articles by your field men, of practice and results.

"I would rather pay five dollars a year for a paper whose columns are open to all and whose editor does not toady to the advertisers, than 50 cents for one whose editor wants to create all impressions to his point of view, and incidentally to his own advantage. Every page of every issue of the Press is of vital interest to the farmer. It is hard indeed to pick out any one feature that is of greater benefit than another, but Mr. B. Anderson's experience with thrips, as told in the January 15 issue, and other articles of kindred nature, are perhaps of the greatest immediate benefit. Your own work too, my dear editor, is of great value. You promote optimism; you urge us on; you even sometimes goad us on. You promote in us a tendency to try to read between the lines; yes and even read where there are no lines. Especially do you interest me when on some of those bright crisp mornings you get a strangle hold on your pencil, and proceed to speak right out in meeting. I like to read and hear plain talk, coming straight from the shoulder of an honest conviction; it seems to engender more confidence; it seems to infuse a resolution to greater endeavor. And now, my dear sir, I hope you will stand square and firm on all issues affecting agriculture in California, give not an inch; compromise with none; but hammer, hammer, hammer.

"Laurel. D. A. La Porte."

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SAN FRANCISCO FEBRUARY 12, 1916. LOS ANGELES

Cows for Settlers on Subdivision Tracts.

[Written for Pacific Rural Press by T. H. Means, San Francisco.]

We have heard much of rural credits in the last few months. The cause of much of this talk has been the fact that in the west a great many farmers have recently taken up land and have not succeeded in making a living on it. This is true, not only on Government Reclamation Projects where the initial cost of the land is nothing, and where the cost of the irrigation system is returnable to the government on very easy terms, but is equally true in California where settlers on subdivided trdcts find themselves unable to make a living and pay for the land, too.

A few years ago a small irrigation project was built in the central valley of California and the land under it divided into small tracts for sale. The owners of the project realized that in order to sell this land and get their money out of it it would be necessary for the farmers to make money. The land was well adapted to alfalfa, and it was thought best to encourage the growth of this crop because it is quick maturing, and in order that the farmers might have a constant market for their hay the company decided to encourage the dairy business. An offer was made in which the land company agreed to finance farmers in the purchase of dairy cattle. The company offered to furnish the farmer all of the cows he could feed without cash payment. It was the theory of the owners of the project that if a man experienced in the dairy business had sufficient capital to make a small initial payment upon the land and to put in a crop of alfalfa, it would be good business on their part to advance him sufficient capital to buy dairy cows to consume the alfalfa and to take pay for the cows out of butterfat sales. If necessary, payments on the land would be deferred.

During 18 months about 1200 cows were purchased and distributed among the farmers. The company started the work by buying cows and selling them at cost prices in small numbers. This arrangement proved unsatisfactory, and after that the company bought no cows direct, but allowed the farmer to select his cows, and make his own bargain—the company simply furnished him the money necessary. The cows were furnished in any quantity desired up to the amount of feed possessed by the farmer—from 1 to 50 were supplied to different men. In accepting the cows the farmer agreed to pay one-half of the cream check towards the cost of the cows, with interest at 8 per cent on unpaid amount. In a few cases a definite sum, such as $3.00 per cow per month, was paid.

The land company attempted to secure co-operation from the local banks, and have them make loans to the farmers for the purpose of buying cows. The local banks, not being familiar with this kind of business, shied. In fact, they thought it very poor business for a bank to engage in. They found all sorts of practical difficulties, and very much doubted the security they would have owing to our poorly constructed laws. So the arrangement was finally made in which the farmer signed a contract to purchase the cows from the Land Company and gave a note for the cost price. The land company indorsed the note and deposited it in the bank for collection. The creamery receiving the farmer's cream deposited his check each month in the bank; one-half of the amount was credited to the farmer and one-half to the note. A little over two years was required to pay for the cows on the average.

This arrangement accomplished three things: First—it assisted the land company in securing a good class of settlers—dairymen.

(Continued on page 205.)

THE LAW DOES NOT FAVOR BANK LOANS.

The present banking laws of California do not encourage the loaning of money by banks or loan companies to farmers for the purpose of buying livestock because a chattel mortgage is only binding so long as the livestock is on the farmers' premises and is not binding if moved. Some banks have overcome this kink in the law by first buying the stock in their own name and then reselling to the farmer, taking a mortgage on the stock for the amount owing. This process makes it possible for the banker to loan money and at the same time secure his loan with the cattle, no matter where they may be found. The State does not, however, look friendly upon this practice, on the ground that the banker becomes a livestock dealer rather than a banker in such instances and has no right to assume such risk.

The interesting article herewith by Mr. T. H. Means shows one way that the banker can loan money for the purchase of livestock and still comply with the law.—Editors.



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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, San Francisco, for the week ending at 5 p. m., February 8, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	2.23	27.76	26.73	60	44
Red Bluff	.46	17.17	14.97	56	40
Sacramento	.70	15.47	11.70	60	38
San Francisco	1.99	23.94	13.65	62	44
San Jose	1.12	14.43	9.76	66	34
Fresno	.71	8.94	5.61	66	38
Independence	0	9.24	5.49	42	—
San Luis Obispo	1.04	23.18	11.78	72	42
Los Angeles	.08	17.25	8.99	66	44
San Diego	0	10.89	5.83	62	44

THE WEEK

We are beginning to suspect that the movie-millionaires have been lying-in with the weather prophets to produce the particularly uncharacteristic winter we have been having this year. We have been selling climate to these film-producers until we have taken to quarreling among ourselves as to what part of the State can produce the ultimate percentage of winter sunshine, good for photography. We have even produced evidence that some spots around the bay of San Francisco really have more sunshine than Los Angeles! The result is that we have so filled the State with movie-queens and bold highwaymen, so dotted our landscape with ruined pasteboard castles, and so threaded our hill-top ridges with bogus Arabs and real camels, that if General Fremont should return he surely would be surprised at our rapid advance in world-conquest. All of this is not bad, in a way, but one result has been the production of so many million miles of sunshine films that there is danger of burning the eyes out of the world. The film-merchants therefore find that they must run off a few million miles of film this winter with lower light-tones, and they need also a lot of water-soaked heroes and flood-swept castles to give their merchandise proper scope and variety, and to add to their repertoire some humid scenes and actions. They have found it impossible to realistically produce the loading and floating of Noah's ark with burning sunshine on an arid landscape—and a few other baffling desirabilities like that have convinced them that, with all the properties on hand, the actors ready and the temperature right for winter-photography, it is up to them to get the water—and this they have done abundantly; yea, even copiously. And now we shall have California chicken coops floating down the floods of the Yangtsekiang just as we caught sight of California adobe ruins as we followed the triumphant procession which Ahasuerus arranged for Modecai. Thus, whether the world sees it wet or dry, it will see California just the same, owing to the necessities of the movie-millionaires and the pliability of the weather-prophets. And the rest of us have to be content, for all things on the earth, even though they be good things in their ways, must have an end.

Mastery of Waters.

But, seriously, it is an interesting fact that a national movement for control and prevention of floods, which is now making great headway, is a product of the arid region, for it found its initiative in the far-from-arid brain of Senator Newlands of Nevada, who is at least the godfather also of the national irrigation law. It seems a paradox that a part of the country which has the least water should teach water-handling to parts which have most water—but it really is not more startling than some other things which the active, clear-eyed West has taught the complacent and somewhat weary East. The progress of this instruction in the case of water-handling is, however, interesting. In Congress the other day the leaders of both great political parties spoke vigorously in favor of the same legislative measure—which seems to mean that neither party can afford to be left out of it. The measure was the appointment of a new standing committeee to handle legislation relating to flood control: "Its sole purpose being to investigate the greatest economic problem of the next generation and to expedite the work of Congress in its solution." The new committee is to make a painstaking scientific investigation of the whole subject of flood control, vitalizing a movement that has been agitated in Congress for several years for co-ordination of forces that have had to do with internal waterways, floods and kindred subjects. While the action of the House does not provide directly for any such comprehensive scheme as that of Senator Newlands—to create a waterways commission and a board of river regulation to promote commerce by development and improvement of waterways—it is thought to foreshadow a general reorganization of the present system of river regulation and improvement. And so it may come to pass that the arid region may teach the humid what to do with water—in getting it away from, as well as toward, the land.

In this connection it is interesting to read the declaration that "when the engineers have used up all the available money for the uncorking of the Sacramento river next December or thereabouts, the channel of the river will be so widened and straightened and its capacity so increased, that the State capital need have no fear of any inundation."

And when the rivers are fixed to discharge flood waters, or perhaps before, the security of life and property beneath stored or reservoired water should be provided for. Reports are that the dam which gave way in San Diego county was either not a good structure or had been neglected. Certainly all large structures holding water should be under State control and inspection, and all individuals, corporations and municipalities should be forced to make such structures secure. This is a form of paternalism which no one should oppose.

Another Liquid Movement.

But while there can be no difference of opinion that both water and whiskey should be under effective control, there is another substance which should be flowing and free, and that is money. We have left water and whiskey too free and have reservoired money too tightly, and have been trying to live with a delivery system which has been full of rusted plugs and padlocked faucets. But, thanks to the agitation of this subject far and wide throughout the country during the last few years, these obstructions are being knocked somewhat free, and money is becoming more liquid, as its service to mankind requires it to be. We are not sermonizing on this subject now, as is our wont; we are simply blasting a hole in this column for a very significant fact, to wit: the Federal Reserve Board in Washington has approved a reduction from 6 to 5½ per cent for the San Francisco Federal Reserve Bank on rediscounts of paper of more than ninety days' maturity. And this fact is explained by James K. Lynch, of the reserve bank of this district, in this way: "This is an indication of abundant money in that it was found that the banks were not rediscounting this class of collateral, which is confined to agricultural paper, at the 6 per cent rate. So we thought it would be well to try a 5½ per cent rate. There is no change in the rates for other classes of commercial paper. Under the present money conditions there is very little rediscounting being done by the San Francisco bank."

Now this is very good, so far as it goes, for it shows a tendency of money to become liquid—to flow to the need for money. But of course the movement is slow, like molasses in February. Why not warm it up, Mr. Lynch? Why not apply for permission to chuck it out at 4½ per cent as was done in the Southern States a few months ago?

Forgotten Money.

And speaking about the availability of money as essential to human activity and industry, is it not interesting also that people can successfully forget money; either willfully or otherwise, who can tell? Who knows, for instance, whether William Anderson, who, twenty years ago lived in Alleghany, Sierra county, is intentionally forgetting that he put $12,525.52 into a San Francisco bank more than twenty years ago? If William does not wake up very quickly, the State will get his money, for the State Superintendent of Banks reports a total amount of $119,293.93—made up of 5355 deposits in National and State banks in California which have not been touched for twenty years or more. The law says all money in such condition shall be turned over to the State, and William Anderson stands in to lose more than anyone else in that way, for his roll holds the record for dimensions of forgetfulness. Will not some reader remind William to call around and get his money?

Lost Money.

But there is another indication of immobile money in San Francisco, and it strikes us as very sad. It appears that the January imports at this port reached a valuation of over thirteen million dollars, which is about fifty per cent greater than ever before in a single month, and of this amount about five and a half millions were the value of Australian wool passing through to the manufacturers on the Atlantic seaboard. There were about twenty million pounds of this wool—nearly twenty cents

a pound, a little more than our own best valley wools are worth at this date. The sadness of it is that California could have produced this wool without taking land away from anything else, and probably would have done it if the politicians had not taken the duty off wool. And there is another sadness about it which ought to appeal to the same politicians; as this Australian wool pays no duty it contributes nothing to the preparedness which the same politicians are now exalting. As the Bible says: "It is a just recompense of reward."

Inspection and Geographical Quarantine.

We are having to listen to a good deal of growling these days from people who find themselves unable to buy plants and trees in places where they wish to buy them, because of local county and district quarantine regulations, which are apparently based, not upon the occurrence of pests on the trees and plants under consideration, but upon alleged existence of such things within certain geographical areas. There is very grave doubt of the correctness and reasonableness of such restrictions upon trade, when applied to insects and diseases which are readily detected by expert examination. In other words, geographical quarantine is directly at enmity with expert inspection in all things which can be detected by careful examination. There may be certain obscure diseases which do not disclose their presence to qualified examiners, and against such, probably, geographical quarantine is the only safeguard, but for things which can be seen geographical quarantine is irrational; and to maintain expert inspectors is irrational also. Because, if we are to trust to inspection we need no geographical quarantine between different parts of the State, except against the invisible—though, of course, an import quarantine may be very desirable, as the work of Craw, Ehrhorn and Maskew has clearly shown. Besides, the better the import quarantine against what is obscure or impracticable of detection, the less reasonable within-State quarantines become. Looking at it the other way round, if quarantines are rational, then we need a lot of policemen on county or district lines to stop all movement of fruits and plants, and we do not need inspectors, who are paid for their ability to tell whether stuff is clean or unclean. County horticultural officers may be pardoned for reducing their responsibility for detection by multiplying local quarantines and condemnation of environments of the stuff they are supposed to pronounce clean or unclean, but it is a question whether this cannot be pushed beyond reason and to the great inconvenience and loss both by planters and propagators. There really seems some danger of our great horticultural State, which should stand as a unit in our own eyes and the eyes of the world, becoming subdivided into a lot of warring horticultural principalities with its own petty princes and their courts—which we count against the interests of the State. This is one of the things which should come under consideration by the committee called for by the Visalia convention for the purpose of reviewing and revising the horticultural laws of the State. It should be settled soon which are the correct points of view to be held in State horticultural work, and this matter of local quarantine policies is one of the things to be carefully looked into.

Work for Those Who Want It.

It is interesting to note that a State employment office was opened in this city, at 933 Mission street, on February 1. This is the beginning of work under an appropriation of $50,000 by the last Legislature to enable the State Labor Commissioner, John P. McLaughlin, to furnish a clearing-house for labor and employment in general throughout the State. The office of the Labor Commissioner plans to circularize the State with 10,000 letters, soliciting co-operation and support in the movement. As the law provides for the establishment of similar employment registries in Sacramento, Oakland and Los Angeles, the effort seems planned chiefly for city unemployed, though the commissioner plans to collect opportunities in all the tributary country of these towns. It is, therefore, a beginning which may teach some useful things. If it succeeds it should be extended to all the populous counties and such clearing-houses established at the county seats thereof. It gives all honestly disposed toward self-support a chance to declare their intentions; and county constables could expedite the approach of all wanderers toward such meccas of their desires. This would segregate all such from the professional hoboes who lead them to riot and disorder, and the latter could be more surely distinguished and provided for. It looks like a very reasonable arrangement both for labor and those who desire its services, and all should advance the provision to a fair trial of efficiency.

Queries and Replies.

Querists must give name and address.

Brown Rot on Apricots.

To the Editor: What can be done for large decayed spots or places on apricots?—A. W. S., Los Gatos.

You probably refer to brown rot. Clean off while pruning all dried fruits which may be holding over on the twigs. Spray with strong Bordeaux before growth starts and with weak Bordeaux soon after the growth has started.

Corn Smut.

To the Editor: How can we prevent smut in corn? Is it the weather condition that causes it? Three years ago there was smut and it seems to be getting worse each year. Last year we dipped the seed corn in formalin, but it seemed to do no good. How can we prevent it, as we are getting hungry for roasting ears?—M. T. K., Redding.

There is no demonstrated specific for corn smut. Its occurrence may be influenced by summer moisture, but even that is not demonstrated. The smut spores live over on the old stalks and stubble and treatment of the seed is not effective. Preventives consist in gathering and burning all refuse from the previous crop, or else rotate your crops and put the corn on ground not recently used for it.

White Ants on Fruit Trees.

To the Editor: What shall I do with white ants? They have eaten off the bark of several young prune trees that I planted out.—G. C., San Martin.

When they are eating off the bark, as you describe, and can be seen at it, they can be easily killed by spraying with kerosene emulsion or tobacco extract, probably. But white ants usually work out of sight, mining out galleries upward from the point of entrance. They are therefore hard to locate. When the entrance place is found, however, they can be killed all through their galleries by thoroughly wetting soft rag or cotton batting with carbon bisulphide and holding it, or tying it, over the entrance so that the vapor penetrates the burrows.

Walnut Blight or Sunburn.

To the Editor: I have four English walnut trees about ten years old. Last year one tree blighted; this year they all blighted. The nuts turned black on one side and the kernel was shriveled. Can you tell me what to do for them?—O. A. N., Porterville.

Without specimens taken while growing we cannot be sure whether this was blight or sunburn. Blight usually occurs as a spot at the blossom end of the nut and on the sides. Sometimes these spots become confluent so as to cover parts or all of the nut, but injury characteristically on one side may be sunburn. If the trouble is blight there is reason to think that a thorough spraying with Bordeaux or lime-sulphur before growth starts may prevent a good part of it.

Alfalfa in Young Orchard.

To the Editor: I want your advice on sowing alfalfa in a young orchard. Some people tell me it is all right; some say it is not. Could I sow a strip leaving room to cultivate the trees and not hinder the growth of the trees? The soil is deep silt and very rich. I need the alfalfa to feed my cows so I can have an income until my orchard comes into bearing.—Subscriber, Los Molinos.

On such soil, if you have water for the alfalfa and can irrigate so as not to water-log the trees, it is all right. If you expect to divide the rainfall between the alfalfa and the trees, the alfalfa will get most of it and dwarf the trees. There are cases in which the natural soil moisture will carry both trees and alfalfa, but usually it is not so. If you wish to try it, sow the middles, keeping the trees in an 8-ft. strip, four feet each side of the row and keep this deeply worked and thoroughly—not less than five inches of well pulverized soil all summer. Keep it up as long as you get thrifty growth of trees. Failing that, plow under the alfalfa as soon as you see the trees are not going the right way.

Right of Way for a Ditch.

To the Editor: Will a neighbor taking water through my land to irrigate his place establish a right-of-way in 5 years if I don't charge him anything? If so, how can I without charging him, keep him from getting a right of way? The ditch is to be plowed in after irrigating, each time.—S. J. M., Campbell.

We have not much more respect for a newspaper-lawyer than we have for a sea-lawyer. The way to get law is to patronize a practitioner whose business it is to get at all the facts before giving advice. However, we give this as our solemn judgment in the matter. In order to be safe you should secure from your neighbor a writing to show that he understands that his use of the ditch is by your permission and that he does not use the right of way as adverse to your ownership thereof. Or you can give and record a lease for such use of the land for a definite time for a valuable consideration, say one cent, and, if you feel that you have been unneighborly, you can give him back the cent afterward. This may not be absolutely necessary, but it might make your heirs a lot of trouble to prove the use permissive unless there is writing to show it.

Mistakes in Training Apple Trees.

[Written for Pacific Rural Press.]

"What is the first mistake a newcomer makes with apples?" we asked F. W. Duncombe of Beaumont, who has handled several of the orchards of that district, and was recommended as one who knows the game.

"Pruning," was the reply.

This was certainly the most evident fault of the orchards we had seen, for a cleaner, more vigorous and healthy lot of young orchards could scarce be desired. The stand is generally almost perfect, and the trees uniform. But perhaps a majority of trees were full of main limbs which are already crowding each other at seven years and less of age.

"There ought to be only three main limbs, started as far apart on the trunk as possible, and well balanced around the trunk. They ought to be joined to the head by a union in which the visible line of connecting growth is short, not reaching over half-way around the junction. A union where a long straight line of connection is visible nearly to the bottom of the branch, is very likely to split off when loaded or tested by wind." Such a limb is usually set more nearly horizontal at the union.

"A pruner must be imaginative, looking ahead to see the tree as it will be ten years from now. The limbs will be growing all that time, and the pruning should and can be done so no cut of new wood need be over three-fourths of an inch in diameter.

"The first four winters of an apple tree I would cut back the new growth to make a stockier frame and induce vigorous woodgrowth.

"At a year old, I leave three new limbs 14 or 15 inches long, instead of nine inches, as I used to. This is because I want the head low down, but the new growth of the second year should be high enough to avoid injury by the whiffletrees.

"At the second winter pruning, leave two properly balanced limbs, about nine inches long, on each of the first three, and at the third pruning, leave about two on each of these. At the fourth pruning, fill in any holes and perhaps double the number of branches again.

"Individual trees will require variations from this ideal, to suit the tree and variety.

"After four years old, there is no need to prune for increased size. Turn the tree's energies into bearing instead of wood growth. Do not prune in winter except to cut out dead wood and interfering branches, and to thin out where brush is too thick.

"Top back the new growth (not heavily) all summer, preferably in August. The stoppage of sap flow will force side buds to become fruit buds and spurs. I have seen apples here on last year's growth. When enough spurs have been started by a few years' summer pruning, leave the trees alone except to thin them out and keep them open to the sun for vigorous fruiting and high coloring inside the tree.

"In cutting back in summer, I prefer to leave a branch or a promising bud just below the cut.

"These methods are for commercial plantings. For home trees, younger bearing might be desirable and fruit buds would be left wherever found. On Winesap and Delicious, these are mostly in the body anyway, but in Rome Beauty, for instance, many of them are on the tips and would have to be left for earlier fruiting."

Avocado and Mango in California.

Editor Pacific Rural Press, Dear Sir: Consider the avocado (you do, under date December 15) how it grows. Even Solomon in all his glory had no eating superior to it. However, this refers to the fruit in its native haunts and not the representative found in our markets. Even as found, it is eaten avidly by those who know it and occupies a prominent place at dinners of mark. It is, nevertheless, a mal-conditioned affair for the reason that, in order to reach our markets unspoiled, it must be picked before it is fully ripe and, unfortunately, it will not properly ripen after being picked. It merely softens without acquiring quality. This is likely to impose a limit to its profitable culture in California. It is at its best when fully ripened on the tree and, unfortunately, has almost no keeping quality, beginning to spoil by black rot in the pulp very soon after being picked. But for this it would be plentiful and cheap in our markets at present.

Throughout tropical America it is grown in great quantity, and in the city markets is stacked up in great heaps that can be had at almost any price. I have bought it at two for a cent, retail, and for fifty cents (Spanish-American silver) one would need a bull cart to carry away what could be bought. Literally. When a vessel has been in port for a week and the mess supplied with vegetables by a bumboat woman, she may, as a parting gift of small value, present a bushel or more of prime avocados. I have seen it done.

If it is ever to become a fruit produced extensively in California it will be necessary to Burbank keeping qualities into it or produce a fruit that will properly ripen after being picked. Even when that is done it is difficult to see how any extensive market can be developed. It is not a fruit to be eaten offhand, but is a salad fruit only and one which soon palls. It is for occasional eating only, and as such can only have a limited use. Without doubt those who first bring the trees to bearing will obtain ample reward, but it seems well to beware a very extensive planting. Where it can be raised, every one should have at least one tree for home use, thereby being able to get it in prime condition.

The Mango.—While looking about for new fruits that may come into extensive use, what is the matter with the mango? Many persons do not like it at first trial, but once the taste is acquired one rarely tires of it, and it should become as universally eaten as the orange. The small, large-pitted ones sometimes seen in our markets give no idea as to what a mango really can become.

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The finest fruit in the world grow at Cavite, the naval station across the bay from Manila, P. I., luscious fruit six inches or more in length with a thin, flat pit, it is a fit fruit for the gods. I once heard a Tagalo say that it was good enough for a friar to eat. Of course this is a highly developed variety and probably could not be introduced directly into California, unless possibly into the Imperial valley, but if care enough and time enough were taken no doubt Cavite quality could be bred into a hardier variety. Perhaps it would be necessary to first produce the hardy type, then take it to the Philippines for crossing and finally return the results. Possibly pollen from the Cavite type could be kept alive at low temperature and brought here for the crossing. It would be a long process and one for a young man to attack, but extremely interesting and worth the effort if successful, because of all the tropical fruits proposed for California growing I think it would eventually fill the largest place. **W. Stuart Smith.**

Lemon Cove, Cal., Jan. 15.

Apricots Due to Irrigation.

[Written for Pacific Rural Press.]

Apricot orchards may be seen on a trip in almost any section of Imperial county, but close inspection of all but a few of the best reveals slight new growth on trees six or eight years old, and fruit buds scarce or weazened as if dried out. The fact is that they do not develop well with the methods used by a large majority of the growers; and hence the comment on all sides, that apricots do not pay.

Among those who get regular crops, and strong new growth is H. S. Reed on the Edgewild Ranch near El Centro.

Deep roots established while the trees are young, plus continued adequate irrigation, make the difference. Imperial Valley soil was dried out perhaps for ages before man's occupation. Most farmers apply two or three acre-inches per irrigation and think they have soaked the ground deep. That water goes scarcely below the plowed ground and the roots can go no further than the water. Trees that have been pulled out, show root growth about a foot deep, spread abroad in all directions. Very little fertilizer is ever used, and the fruit buds starve for plant food, while the roots suffer from the heat and periodical drying of the surface soil.

Deep Root System.—Mr. Reed got a deep root system. He studied the problem before planting the 4,000 trees seven years ago. He ran a Killefer subsoiler nearly two feet deep down the prospective rows and every year for three years the subsoiler opened the deep dirt between the trees for moisture.

He flooded the ground, and when the water had sunk away, he reflooded it. A post-hole digger used to see how deep the water went, failed to bring up dry soil. Then the trees were planted, and perhaps water was used to settle the dirt about the roots. Then they were "starved for water, forcing their roots to go down after deep moisture put there by winter flooding. Now, though he plows as deep as two horses can pull a 14-inch plow, he says," I have never seen a root turned up.

"Irrigation here is the whole thing; cultivation is merely secondary," says he, "and the fact that his trouble is to thin the fruit will perhaps surprise other apricot growers." We must thin the fruit as much as possible at pruning time to save expensive hand thinning.

His system of irrigation now is similar to that of E. H. Erickson, of Brawley, who is elsewhere in the valley quoted as a successful apricot grower. They fill the checks a foot deep or only slightly less, in December, and when that has settled away, they give it as much again. Always a disking or harrowing follows each irrigation as soon as possible.

"If I were on "hard" land instead of having loose soakable soil," says Mr. Reed, "I would plow before flooding. My soft soil takes water all right, so I will wait."

As soon as the pruning is done, the orchard receives another flooding; then it is plowed to open the top soil to spring warmth.

When the fruit pits begin to harden, an irrigation is given in furrows to keep water away from the tree trunks, and to supply the extra moisture needed at the period of fruit formation.

The subsoiled moisture must then supply the trees till the fruit is off, when they get another thorough watering to help develop the characteristic strong fruit buds of this ranch. This is repeated every six weeks till Nov. 1, when the sap drops back for the winter. Thus the deep root system is made and sustained in fertile soil, by adequate irrigation. This means more water here than in a country which has moisture deep down and is helped by winter rains, of which there are practically none in Imperial Valley.

Fred Arth of San Bernardina county has 270 Valencia trees which last year yielded 2192 boxes that sold early in the season for $2500. The same trees produced 1800 boxes the year before.

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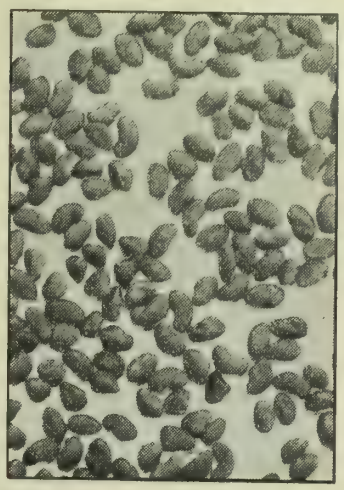
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Hints on Purpose of Pruning.

[By Tom Henry, Horticultural Inspector, Paso Robles.]

Pruning, the one of the important practices towards successful fruit growing, cannot of itself produce strong trees, loaded with good fruit, without the other important orchard practices, such as spraying, tillage and maintenance of soil fertility. No matter how skillfully we prune, unless we maintain the proper soil conditions we cannot expect to secure satisfactory results.

Probably there is no other operation in the production of fruit, concerning which there are such wide differences of opinion as prevail with regard to pruning trees.

In the pruning of trees there are some sound, practical and scientific reason for different things, and unless one knows why he is pruning and what he expects to gain thereby, he is not likely to do it very intelligently.

Difference in opinon as to the time of pruning also prevails in all sections, each one having reasons for their particular idea as to when to prune. Nevertheless with all this wide variance in ideas there are a number of principles one must follow to be successful in the work. These principles may be summarized as follows:

1. To modify the vigor of the tree.
2. To keep the tree shapely and within the bounds.
3. To make the tree more stocky.
4. To reduce the struggle for existence in the tree top.
5. To open the tree to the sunshine.
6. To remove dead or interfering branches.
7. To aid in stimulating the development of fruit buds.
8. To thin the fruit.
9. To make thorough spraying possible.
10. To facilitate the harvesting of the fruit.

The pruning which a tree receives during the first two or three years after it is planted has much to do with its future. Mistakes at this time are practically irreparable; on the other hand, if the tree has been properly pruned the first few years, subsequent errors in the pruning, if they occur, will admit of correction without permanent harm to the tree.

Nearly all authorities on pruning believe each kind of fruit has its particular way to be pruned and each variety of that kind also has its particular way to be pruned. Still there are three great fundamental underlying principles connected with the pruning of young trees. You might say there are three lessons, and if these are mastered the problem of pruning young trees becomes rather simple; but unless they are mastered it is difficult to develop strong and well-balanced trees.

The first lesson is the choosing and spacing of the scaffold branches.

Three, or four branches properly spaced around the young tree and having them as far apart as they can be conveniently spaced will produce a strong and well-formed tree.

The second lesson is to learn to keep the main branches or sections of the tree properly dominant—that is if one branch tends to grow at the expense of the rest of the tree, the weaker branches gradually become side branches. If proper pruning is done this can be obviated. The average pruner does one of two things. He may be one of those that cuts the tree level across the top. This will never build a strong, well-balanced tree, because in doing this you pay no attention to the relation of one branch to another. Another group of pruners are apt to cut the weakest wood the most and the strongest wood the least. He goes on the principle that heavy pruning causes greater growth. This is true on a tree as a whole, but has little to do with the relation of one branch on a tree to another. If you have a strong branch in close proximity to a weak branch, the best way to strengthen the weak branch is by cutting back the strong one. The development of the weak branch will be in proportion to its leaf and branch area. If there is a large amount there will be a heavy demand on the sap and the branch will develop. The heading back then, should be done not so much from the point of view of the tree as a whole but from the point of view of the relation of the branches to each other.

The third lesson is how to avoid the sharp angled, equally balanced crotches. This is done by following the usual principle of allowing two branches of this season's growth to remain to one branch of last season's growth, but not having these two come from the end of the branch. They should be spaced as far apart as possible and in pruning these you must cut one harder than the other, thus one will become a leader and the other a side branch. A tree thus pruned will have its strain distributed in such a way as to reduce the breakage to a minimum.

All branches that cross or interfere should be removed. The habit of removing water sprouts is rapidly changing to one of heading them back to two or three inches in the early summer then keeping the new growth cut back so that at the end of the season the water sprouts will be about six inches in length. The possibilities are that this water sprout will produce fruit spurs low down on a tree whose main branches are bare of fruit spurs.

Trees should be pruned with the habits of the tree always in mind. A wide spreading tree should be pruned to an inside bud, and an upright growing tree should be cut to an outside bud.

At least two-thirds of the past season's growth should be removed.

Almond planting at Elsinore is on the increase, the nuts being sent to the Banning warehouse.

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"Green Spot" Not "Brown Spot."

[Written for the Pacific Rural Press by Prof. H. S. Fawcett.]

I wish to call your attention to a statement in your paper of January 8d, under the heading "Orange Brown Spot." The discovery that I made was not in regard to the brown spot, but was in regard to the green spot, which is an entirely different trouble, and the cause was not the application of citric acid from orange peelings, but oil squeezed from peelings. I really doubt whether there is any citric acid in the peeling itself. The correct statement in regard to the discovery regarding the green spot, is given below from page 192 of Bulletin 262. In the same Bulletin, on page 191, I have a discussion of brown spot, which shows that this article mis-states the fact. I would be pleased if you would correct this statement, and perhaps give a definite statement in regard to the discovery of the lemon oil causing the green spot.

We give the references to the two spots as follows:

Brown Spot.—A spot disease occurring principally on Navel orange fruits in California is known by this name. The spots vary in size from a mere point to one-fourth inch in diameter; they are dark brown and sunken, begin to develop five to ten days after the fruit is picked, and are usually not visible on the tree. J. E. Coit attributes the spotting to the premature death of certain cells near to the surface of the rind due to oxidizing enzymes. The primary cause or agent that brings about this result is as yet unknown.

Green Spot.—A marking of the surface of lemons known as "green spot" is troublesome during some years in California. It is not known to occur in Florida or Cuba. It usually occurs in the fall and winter on the fruit that has come in green or light green from the orchard. The spots remain green in color after the remainder of the surface of the rind turns yellow in curing. In the spots the oil cells stand out prominently, the surface between them having been slightly depressed. It has been found recently that one of the causes for these spots is the effect of lemon oil liberated from some of the cells of the rind in picking and handling. J. D. Culbertson, of the Limoneira Company, first showed by experiments on sound lemons that the oil pressed out of the rind of one fruit had a remarkable effect on the rind of another fruit uninjured. The writer caused the development of the typical "green spot" in moist jars, by pressing out on the uninjured surfaces of green fruits small quantities of lemon oil. The spots were also produced by a pressure of the skin just sufficient to liberate the oil. Fruits not so treated kept under similar conditions developed no green spots. The depression of the surface of the rind between the oil cells took place in a few hours, but the typical green spot was only evident in four to six weeks, after the remainder of the rind had turned yellow.

WHAT ABOUT STANDARD

To the Editor: I intend to set out a young orchard, mostly in prunes, this winter. I would like to know about the Standard prune. There are a number of orchardists in this vicinity who set out a number of trees the last two seasons and some of them say now that they are sorry they did as they dry away more than other prunes. As it is a new prune among people here would like your advice.—J. A., Morgan Hill.

[Answered by F. C. Willson, Sunnyvale.]

[I have had no personal experience in growing the Standard prune. I have seen it grown on young grafts and, making allowance for the fact that they would not probably be as sweet as grown on mature trees I would hesitate to plant it myself for a drying prune. At the same time I would give no advice to others, as I am not well enough acquainted with the variety. In judging of the value of fruits for special purposes, the product should be taken from fairly mature trees under normal conditions. On the other hand we expect with "French Prunes" a lighter shrinkage on young orchards than on old. Have heard same complaint your subscriber makes from same district.]

RESEEDING ALFALFA.

To the Editor: I want to try and thicken some of my alfalfa. Which is the best, to go over with a spring tooth harrow first, and then sow the seed and go over the ground again, or sow the seed and then put all the work on after the seed is sown?—Subscriber, Merced County.

[It is better to do the work before sowing and then cover very lightly—a brush drag being largely used to cover.—Editors.]

Estimates from Florida are to the effect that 50 to 55 per cent of the orange crop of that State has been shipped.



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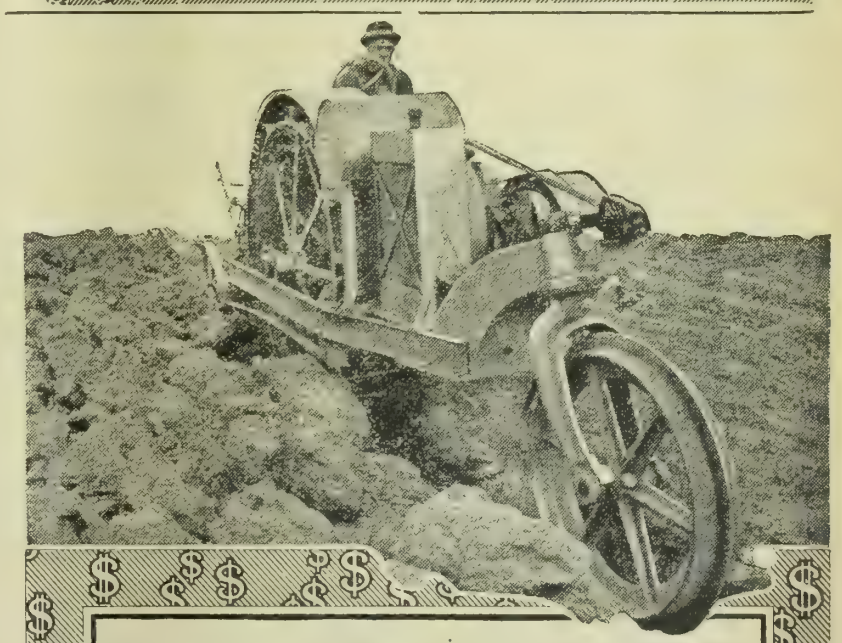
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THE BULL WITH THE PULL

What is This Vine Disease?

To the Editor: I desire to call your attention to this clipping from the Fresno Republican:

"Experiments are now being conducted by the vineyardists of the foothill district of Tulare county which give promise of relief from the devastating black rot. Emil Gundelfinger says that the promised remedy is one of the most simple yet tried out, and is the result of investigation by Japanese experts who came here last summer to investigate the horticultural industry of California. It consists merely in making use of the Bordeaux spray just before the vines begin to bloom, and then if the disease remains apparent, a second spray is made just after the grapes begin to set. This has proved highly successful in the Clovis district, where with the heavier soil the black rot had gained a strong foothold.

"Mr. Gundelfinger declared that this treatment was in use last season by Japanese growers near Clovis, and one Japanese grower there whose twenty acres the year before last produced five tons of raisins, last year, entirely as the result of the spraying, had a production of twenty-five tons. This was in the Garfield district."

Last spring the unopened blossom buds on my Thompson seedless vines blackened and dropped off. I supposed it to be mildew, and treated with sulphur. Was it grapevine mildew? The trouble yielded to the treatment only partially. I am unfamiliar with the disease described in the clipping. Could it have been what affected my vines, and should I this year follow the treatment outlined, or will sulphur applied earlier do the work? **Chas. E. Dailey.**

Reedley.

[Comments by Prof. F. T. Bioletti.]

Complying with your request that I comment upon the letter of Mr. Dailey, submitting a clipping regarding the supposed remedy for black rot, I would say:

The black rot of the grape is a fungus disease which does serious damage in the southern states, but it does not occur in California. What is meant by the black rot described in the clipipng I am not sure, but it is probably either the black knot, which forms lumps on the stem and sometimes on the branches of the vine, or the black fungus which often attacks close bunches of ripe grapes in the warmer parts of the grape-growing region.

The remedy proposed, namely spraying twice with Bordeaux mixture first just before the vines are in bloom, and second just after the grapes have begun to set would not, I think, control either of these diseases. Spraying of this kind and of many others has been tried for the black knot, but completely without effect. It is just possible that it might do some good for the black fungus which attacks the ripe grapes if the Bordeaux mixture was sprayed at the right time. I doubt if it would do any good, however, unless the application was made when the grapes were at least nearly full grown and in that case it would injure the appearance of the grapes, besides contaminating them with copper sulphate.

The trouble Mr. Dailey describes on his Thompson Seedless is probably neither of the diseases I have mentioned, nor do I think it is mildew, although the latter is possible. If it is something else, of course, it is possible that Bordeaux may be helpful, but this is merely guess work until we know exactly what the trouble is.

INSPECT TREES BEFORE PLANTING.

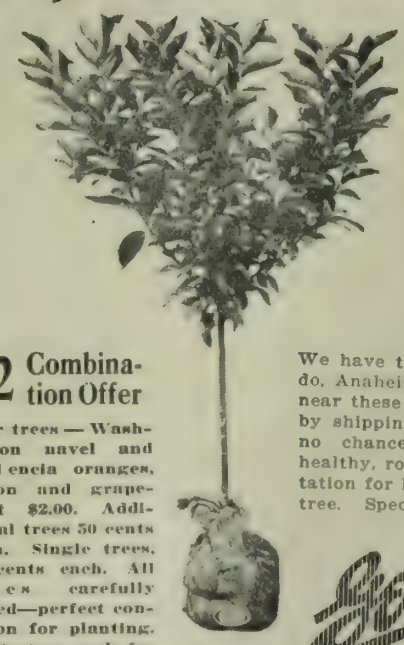
[Written for Pacific Rural Press.]

Crown gall is the cause of death to many old trees throughout the State and it is probably no worse at Banning than elsewhere. But J. G. Replier's observation of his own and other old orchards where the galls sometimes even protude from the ground, led him to be particularly careful not to plant crown galled trees in the 20-acre orchard set out five or six years ago.

Every tree was closely inspected before planting, and instructions were to throw out everything with a suspicion of crown gall. Whether infected trees were overlooked or whether the old vineyard in which most of them were set was already harboring the germs, inspection of the trees a year ago showed galls on 10 per cent of them. These were chiseled off to healthy surface and painted with Bordeaux paste.

D. B. Holmes has bought the old date palms of the Heber garden at about $8 each, according to W. L. Paul of Coachella, and has contracted for their removal to Indio.

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LATE PRUNING ALL RIGHT.

It is all right to prune deciduous fruit trees until March or even April, according to W. W. Anderson, who has a large gang of men making a business of pruning through the winter months. For several years he pruned two neighboring orchards of apricots and peaches mixed, both under similar soil and other conditions, such as cultivation, irrigation, etc. One was pruned first thing in the fall, while the other was usually left until the last in the spring. The apricots were sometimes as big as his little finger when the trees were pruned—once he finished April 13.

No difference was observable between the two orchards, either in yield or wood growth, according to Mr. Anderson. Late pruned trees would exude a little gum, which protected the cuts but did not waste materially. Ordinarily, however, peach orchards are pruned last in spring, if convenient.

This is different from grape-pruning, where the sap channels are large, and late pruning causes excessive "bleeding." This sets the growth back and makes them leaf out later, which is desirable in frosty locations.

SHIELD-BUDDING THE WALNUT.

To the Editor: After many years of trying, we have now succeeded in budding the walnut. I am sending you a "June budded" walnut tree, something, I believe, never shown before. The seed (northern California black), was planted in March, 1915, tree budded in June, and dug in December. This may not be necessary, but it does away with previous theories. We are budding commercially on 1-year seedlings, with a 98 per cent stand for the season of 1915. **Leonard Coates.**

Morganhill.

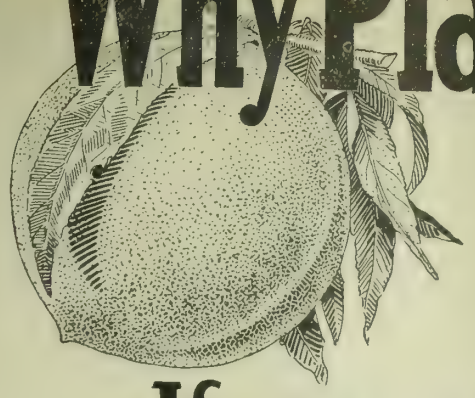
[This is very interesting. Apparently a bud with a very long, narrow shield (perhaps two inches long by half an inch wide) was placed under the bark of a seedling, about five-eighths inch diameter, and tied with cord in the usual way. It made a good tight growth to the stock and sent up a very vigorous shoot, about a quarter of an inch thick and seven inches long. We have sent the tree to the University Farm for planting out. This item of Mr. Coates' experience may prompt other readers to tell us what they have done with common shield-budding the walnut. —Editor.]

TREATING VINE STAKES.

To the Editor: I am going to use some grape stakes for young Thompson seedless vines, and because coast redwood stakes sell so high I have bought mountain cedar from the King's river forest. What is the best method of treating these stakes to keep them from decay in the ground. —C. F. W., Sanger.

[We cannot surely prescribe for this cedar, but some kinds of soft wood are made to last much longer by soaking in bluestone solution. Take vats or barrels or other deep receptacles and partly fill with bluestone solution at the rate of ten pounds of bluestone to 25 gallons of water. Peel and point the stakes and stand them upright as they grew in the bluestone water. The bluestone water is more readily taken up if the wood is green from recent cutting.—Ed.]

Why Plant Peaches?



The tendency of those engaged in peach culture is to discontinue further planting—but why? It is an old and well-established rule that just at the time when others hesitate about planting certain varieties of trees, the man with proper foresight realizes that it is the psychological time to embark in the business.

Remember, when you plant an orchard, you are not doing it for one year but for over a period of 20 years, and because prices happen to be low one season is no indication that they will continue so.

The peach business offers good profits to those who go at it right and stick to it.

If you are going to plant peaches by all means PLANT

ROEDING'S

There are many reasons why you should plant Roeding's peach trees—and there are also many reasons why you should consult with us freely before making up your order for the varieties you expect to plant. We have made an exhaustive study of the peach situation and our years of experience will be worth something to you. Write us.

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which are being enthusiastically received by the canners. The fruit is of splendid size, ripening between the **TUSCAN** and **ORANGE CLING** and in the order indicated. You will find a complete description in our catalogue. Our stock of these new varieties is limited—so get your order in now.

Elberta, Foster, Lovell, Muir, Salway are the standard varieties for shipping and drying.

We call particular attention to the new varieties ripening in May, such as **Connets, Southern Early, Greensboro, Mayflower, Oklahoma Beauty and Oklahoma Queen.** They reach the market when other fruits are scarce and they always command the highest price. Plant them for profit.

Calimyrna FIGS

The name **"CALIMYRNA"** is so closely associated with our president and manager—Geo. C. Roeding—that there is no reason to particularize on it, except to call the attention of our friends and customers to its great merits.

The demand for **CALIMYRNA** dried figs has shown a wonderful growth, and still the industry is in its infancy. We thought we had enough trees to take care of all orders, but it begins to look as though our supply will not last through the season.

We can supply you also with **WHITE ADRIATIC** and other leading varieties. We are absolute fig headquarters and it will pay you to write us.

Walnuts And Pecans



—are big money makers.

FRANQUETTE (Vrooman's strain) stands far in the lead among grafted walnuts—and, of course, the grafted varieties are the only sort to plant. Other grafted varieties that are now much in favor are the **EUREKA, PLACENTIA PERFECTION, NEFF'S PROLIFIC, MAYETTE and CUT-LEAVED.** We have a fine stock for you to order from.

The paper shell **PECAN** has a great future in California—nuts selling readily at 50c a pound. We have been growing and successfully fruiting pecans for a number of years, and will gladly give you more information.

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BOX 18——————FRESNO——————CALIF.

Home-Grown Seeds Usually the Best.

To the Editor: Is there any benefit derived from changing seed barley or wheat seed raised on some other farm, that is, assuming the quality of each is the same? I seem to remember that there is no material difference.—Reader, Maxwell.

[Answered by Prof. J. W. Gilmore, University of California, Berkeley.]

[There is quite a widespread belief that it is necessary to import seeds of various crops from localities having different climatic and soil conditions. The basis for this belief is the fact that seeds of most crops have a tendency to deteriorate when no attention is given to their proper selection or to maintaining their qualities. The deterioration is also sometimes due to untimely or improper culture methods.

A considerable number of experiments, as well as a wide experience, fully demonstrate that when seeds of our various farm, flower, and vegetable crops are properly produced and carefully selected, the seeds grown at home will serve local conditions best.

It sometimes happens that such crops as oats and potatoes when properly grown in northern climates, will outyield poor seed grown in southern climates. When you consider the fact that our cultivated field, flower, and vegetable crops are very much affected by climatic and soil conditions and culture methods, it is evident that when these crops are carefully produced and seeds selected, they became adapted to the conditions of their local environment and consequently are likely to be more productive than similar seeds grown under other climatic, soil, and culture conditions.

One has only to recall what would be the effect in a very short time of leaving a superior strain of poultry or any other selected breed of animals to shift for themselves. The strain would not remain superior very long. The substance of the matter is, therefore, that the home grown seeds of our crops when properly grown and carefully selected, are best for local planting.]

ALKALI PEACH AND HARDY ORANGE.

Though we believe in growing California peaches on good, sweet soil and California oranges in the most suitable temperatures for the very best varieties, it may interest some reader to hear that a three-year expedition in China has just been concluded by Frank N. Meyer, plant explorer of the Department of Agriculture. Meyer went through Central China 1500 miles on foot to the borders of Thibet, touching some regions never before visited by a white man.

Meyer discovered a wild peach, resistant to alkali, cold and drought, the root system of which offers great possibilities as a grafting stock.

Discovery of the wild peach is regarded as indicating that the peach may have been a native of China, rather than Persia, and the presence of native and hardy oranges and other citrus fruits gave added evidence that China was the home of the orange.

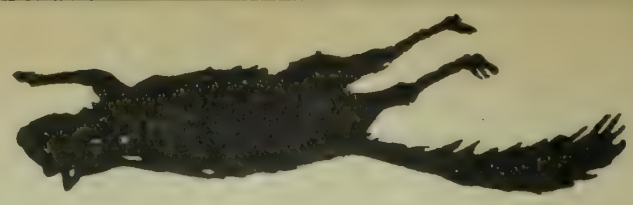
Mr. Meyer believes that his most important discovery probably was the jujube tree, which bears a heavy crop of brownish fruit, delicious when fresh and forming when dried a confection similar to the Persian date. Officials believe it offers a new industry to California and the Southwest. [And it may be added that this fruit has been in California for the last forty years, and is now grown to the extent found profitable—which is not great.—Ed.]

TREATING SEED POTATOES.

To the Editor: I would like to know the strength to have corrosive sublimate for treating seed potatoes and length of time to keep them in solution.—O. J. R., Modesto.

[Dissolve one ounce in eight gallons of water and soak the potatoes in this solution for one and one half hours before cutting.]

Sonoma county hop growers are considering the reduction of the hop acreage 10 per cent next year in order to sustain prices. It is reported that Sacramento valley growers are agitating a 25 per cent reduction.



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—on Trifoliata. This variety bears fruit when quite young and the fruit has more juice, is thinner skinned and finer grained than when grown on sour or sweet roots. Very hardy. Bears early. Can also supply on sweet or sour roots. Ask for quotations.

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Our trees are propagated from cuttings from record bearing trees that have been tested for years in our orchards. They are straight, thrifty and well branched so that when cut back for planting they will throw a well-balanced head, producing fine shapely trees. Our Olives are grown in soil producing good, large, thrifty roots.

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LARGE RETURNS FROM ASPARAGUS.

[Written for Pacific Rural Press.]

The 100-cow dairy on the A. J. McPherrin ranch in Imperial county was not exactly established for the 45-acre asparagus bed lying across the drive from the corrals, but it saves hauling manure from towns roundabout. Geo. V. Rude, the manager, says fertilization is the most important feature of asparagus culture, and his faith has been shown by the application of 4,500 tons in the past five years or 20 tons per acre per year. The asparagus has responded by yielding about 200 24-pound crates per acre per season, which usually pays about $17,000 for the whole piece after freight and commissions are paid.

Earliest in America.—The price of $2 to $20 per crate is due to earliness. They begin cutting and packing asparagus for shipment to Chicago Feb. 5 to 10, expressing the first few crates, then combining with neighbors to ship carloads. April 25 closes the season on account of the Illinois asparagus taking the market because of its proximity. Cutting could continue considerably longer if there were a cannery to take the "grass"; but Mr. Rude says it is just as well not to cut too long. The roots pay too well to hazard exhaustion by later picking. They were planted ten years ago on level sandy, soft soil, as one-year plants from seed of the Early French Purple Argentilus sown on the place.

There is no sign of old age yet, and they are expected to continue producing indefinitely. This is because the greater part of the year is devoted to storing reserve food for the quick growth of the spring crop.

The season's work really commences when the brushy growth is mowed and burned in the fall. The manure is then broadcasted and double-disked in, running the disk crosswise of the rows. Though each season's new roots are above the rest, the top ones are still six inches under the surface. The rows are eight feet apart being on broad curved ridges with narrow irrigation furrows between.

The first irrigation comes between Jan. 10 and 25. Water is not allowed to stand on the field but is drained from the lower end onto the alfalfa which feeds the cows. It carries considerable fertility to the alfalfa. During picking, alternate rows are irrigated so the pickers can go dry shod. Two weeks later, the other rows are watered, and so on fortnightly. A cultivation follows each irrigation, and water is applied all through the summer, weeds being kept down.

The shoots are cut daily, deep under ground, as soon as they appear. For this a tool is used, being described as a tube some 15 inches long with a handle on one end, a jog bent into it, the lower end opened and flattened out so that the cutting edge is sharp and broad and forked.

The shoots are packed on the ranch, being laid in forms which hold two pounds, compressed and tied together, cut off 8½ inches long, packed a dozen per crate with a little space above for the tips to grow in, en route.

There is no disease or asparagus rust yet, and there is enough salt in the soil so no more need be applied.

IRRIGATING YOUNG ALFALFA.

[Written for Pacific Rural Press.]

Furrow irrigation of young alfalfa in Coachella valley saves water, avoids the baking of land which would follow flooding, and gets a better stand by keeping the ground soft for plants to push through.

An onion "marker" is used to make the "furrows." It is made of blocks of wood nailed twelve inches apart on the underside of a plank. It is run over the alfalfa directly after sowing, and water is run through the trenches thus made, to moisten the flat ridges without wetting them enough to bake. When the alfalfa has stooled out so the ground is well shaded, it is flooded as customary elsewhere. By that time too, the furrows are fairly well filled up.

INCUBATING DATES.

[Written for Pacific Rural Press.]

"Incubating" dates sounds funny, but that is a practice for which regular date incubators are used.

In few places of California or Arizona is the season long and hot enough to ripen dates fully on the trees. Anyway in outdoor weather they would not always ripen and color with the uniformity desirable for fancy dates. So, instead of leaving them on the trees two weeks longer, they are often picked and spread out in the warm chamber 48 hours more or less until they have become of the proper color and texture.





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MADE especially for use in the West. Work successfully in every soil where a disc plow should be used.

Plow anywhere from five to twelve inches deep.

One-man outfits—controlled by man on the tractor. Work with any standard tractor.

Can be used either for field or orchard work simply by changing the land axle.

All levers down close to plow when at work—plow can be operated close to trees and under limbs without injuring them.

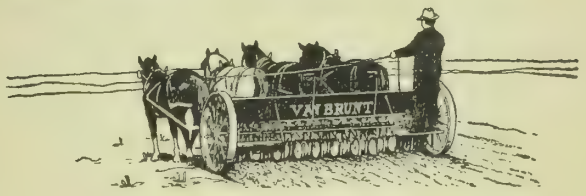
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Can be reduced to four discs by taking off one intermediate section and telescoping connecting rods.

Write for free booklets describing the John Deere Tractor Disc Plow No. 10 for field work and No. 11 for orchard and vineyard.



Van Brunt Drills
With Adjustable Gate Force Feed

THEY plant any small seed, alfalfa to bearded oats, peas or beans. Quantity per acre easily regulated merely by shifting feed gauge levers.

All the ground planted without wasting seed. The Van Brunt adjustable gate force feed and special agitator in the hopper compel seed to leave hopper in even, continuous streams.

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Practical—work with any standard tractor. One-man outfits—controlled by man on the tractor.

No levers—one reason why these plows work so successfully. Plows leveled and depth regulated by screw device. Can be run close to trees and vines without injuring branches.

High and Level Lift—Pull the rope and all bottoms raise high and level. Another pull lets them down.

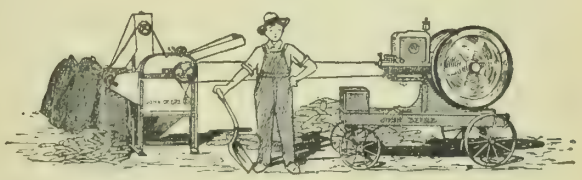
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Extra wide and semi-floating front truck.

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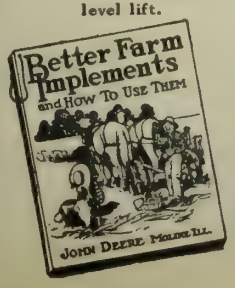
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Reflections on Spoon-Fed Farming.

To the Editor: Evidently the Press wants the farmer to say yes or no as to wanting rural credits, marketing commissions, etc. During the recent campaign I heard of but one farmer opposing these propositions, and since he owns some 7,000 acres of good land it is evident these things are not necessary to him.

But let me take a shot at Col. Irish in his aeroplane and see if we cannot confuse his scouting cruise to locate our munitions plant. Col. Irish deplores spoon feeding—with David Lubin's spoon—but urges that we use the Reserve bank law spoon, for if the bank must discount long time farm mortgages at 4 per cent, that, in California at least, is not giving our farm securities equal cognizance with securities of other businesses, but would be giving farm mortgages from one to two per cent advantage, also the advantage of long term discounts—spoon feeding some. Which side of the fence will the gentleman land on? It is evident that he sees that the farmer needs cheaper money; he merely suggests a different method of securing it. This is an old politician's scheme: seeing he must either support or oppose a new measure he offers instead, another new measure, hoping that in the confusion of new measures, the proponents will scatter their votes while the opponents without effort easily defeat each one and all of them. Mr. Politician can then claim to not be a reactionary, since he supported one of these favorable measures. If Col. Irish really believes that the farmer needs helping, let him put his shoulder to the wheel of that cart which he sees has the most support. Standing alone beside his own cart and shouting Yo-heave-oh! does not help us a bit.

Again, the argument concerning a state commission to take "charge" of a great merchant's business is intended to deceive the unwary. There is no such commission authorized to do marketing for any particular person, but the law does give us an opportunity to do our marketing through a reliable, responsible medium, instead of our having to depend upon the too often unreliable and irresponsible private concerns; and since the consumer pays the cost of organization—and likewise shares in the benefits of organization—why not pay that expense through taxes to the State as against paying it to a voluntary organization by reason of a higher charge the voluntary organization would need to make? If it is true that the more government does for a people the less they will do for themselves then pity the small producer as an organizer, for having to date done nothing, in the future he is condemned to do minus nothing.

Oh, well! as to these chemically pure reformers—that implies in chemistry that they have come through a retort—let the Colonel pray that it be the retort courteous. And as for the "common garden variety" of politicians, I suspect many of them were raised from those "spoon fed" seeds, and down on the lower side of the instructions for planting is this legend: "Please report the results you obtain to this department." We have been reporting for years now that the results were mighty poor, but still a "paternal" government forces the seed upon us.

The quickest way to spoil a man's initiative is to prevent him making more than a living for just a few years. I know. **E. W. Doane.**

Merced.

Potato Contest Teaches Lessons.

[Written by W. V. Shear, Sec'y West Coast Potato Ass'n.]

In the spring of 1915 the West Coast Potato Association offered prizes for the first, second, and third best acres of potatoes to be grown in California during 1915.

The highest yield was 447 sacks (100 lbs. each) of marketable potatoes. The second highest was 404 sacks of marketable potatoes, and the third highest was 354 sacks. The first and second prize acres were grown in the Sierras and the third acre in the Watsonville district. These potatoes were all of very high quality.

Why is the record for growing large crops of potatoes going from the delta to other sections of the state? A brief outline of the methods adopted for securing these high yields may be of value. These yields were obtained in widely separated sections of the state and therefore represent the possibility of this industry in many localities, although the average yield of potatoes in California is estimated at about 70 sacks per acre.

The writer had the pleasure of co-operating with the prize-acre growers, and is therefore familiar with the methods adopted to secure these high yields, the highest of which comes very near, if indeed it does not exceed, the largest yield before obtained in the United States. Attention is called only to the most prominent features and methods adopted to secure these yields.

All of these growers used the best seed stock to be obtained, at an average cost of three cents per pound. They used from twelve to eighteen sacks of seed potatoes to the acre. The highest yield was obtained by using the largest amount of seed.

All of the seed was soaked before planting to kill fungous diseases which might be lurking on the outside of the potatoes.

All the growers used a large quantity of stable manure and plowed the ground very deeply twice before planting, and the largest yields were obtained by those who used in addition to the manure a large quantity of commercial fertilizer.

They all used plenty of water to grow the crop and gave their fields good drainage.

The cost of growing these prize acres was large, but they were all grown at a profit of at least fifty per cent.

Inasmuch as the majority of the potato growers lost money on their crop the past year, and inasmuch as most of these growers tried to save money by adopting cheap methods to cut down the cost of production, the above outline of methods which produce results may be of some

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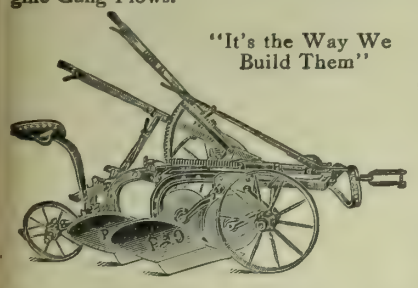
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The P. & O. Nos. 3, 4 and 5 Wheeled Walking Plows are especially adapted to use in the West and Northwest. Some of the features common to these splendid plows are: Nearly all steel construction; improved hitch shifting device; conveniently located levers for depth and leveling; wide hitch adjustment; third plow attachment for three furrow; rear wheel attachment with seat, or seat attachment only.

Nos. 3 and 5 have patented adjustable beam braces permitting the use of either of two sizes of bottoms on the same plow. Nos. 3 and 4 have the wheels located to permit easy turning at ends of the field. These plows make good on hillside or level, and the No. 5, owing to its peculiar wheel arrangement, will stick on any hill that it is possible to plow.

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P&O Light Draft Plows Are Backed By An Unqualified Guarantee



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One squirrel or gopher can do more damage for his size than anything on four legs. But Kilmol gets 'em every time—no uncertainty—a *sure* way at last.

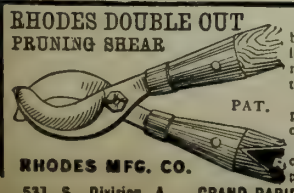
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Cuts from both sides of limb and does not bruise the bark. We pay Express charges on all orders. Write for circular and prices.

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531 S. Division A. GRAND RAPIDS, MICH.

value. Is it not good business practice to spend enough money to produce a good crop and make a profit on the investment, rather than use cheap methods and lose money?

W. V. Shear, Sec'y West Coast Potato Association.

SULPHURIC ACID FOR ALKALI.

To the Editor: How much sulphuric acid per acre or per 100 square feet and how should same be applied?—Subscriber, Berenda.

[Methods and formulas have not yet been worked out. We advise waiting for them, for sulphuric acid is pesky dangerous to handle—besides it is now scarce and high priced because of the war.—Eds.]

SAYLOR'S REPORTS ON SUGAR BEETS.

To the Editor: Where can I get Mr. Saylor's reports on sugar beet growing in the United States?—L. S., San Francisco.

[There are several reports by Mr. Saylor, one for each year. They can be had from the Bureau of Plant Industry, U. S. Dept. of Agr., Washington, D. C.—Editors.]

STATE MARKETING AND RURAL CREDITS ENDORSED.

As an indication of what the farmers themselves are thinking of the proposed Rural Credits and State Marketing Plans, we quote from a letter received from E. E. Greenough of Merced. He says: "Mr. Weinstock is surely on the right track, both in rural credits and in the marketing of farm products. If there is anything the California farmers, especially the ones of small diversified farms, need it is cheaper money and a market where they can realize all there is in what they produce. A knowledge of what the market demanded would be a great help in growing the right produce."

PRISONERS ON STATE HIGHWAYS.

Upward of 1000 convicts will be building State highways next spring, according to the plans of Warden James A. Johnston and the State Highway Commissioners. The convict road building system has proved a success in Mendocino county, the warden says. Another party of forty prisoners will be sent to the Mendocino county camps, giving each camp about eighty men. Other camps will be established until approximately 800 men are at work. Two hundred others will be sent out from Folsom into the nearby mountain counties.

FORESTRY HANDBOOKS.

The California State Board of Forestry has just issued two very useful technical bulletins by H. E. McKenzie entitled "A Mill-Scale Study of Western Yellow Pine" and "A Discussion of Log Rules." They are intended for forestry and lumbering experts and can doubtless be secured by such through application to G. M. Homan's, State Forester, Sacramento.

Italian cypress lousy with red spiders or brown mites, found by J. G. Repplier of Banning, prove their need of thorough spraying or destruction to prevent migration of the insects to nearby orchards.

GRAND PRIZE
POTATOES



Result of "Gold Bear Fertilizer" on Potatoes.

790 bushels to the acre grown on

BOA VISTA RANCH

Placerville, El Dorado Co., Cal. (The largest crop on record in the United States.)

The Pacific Rural Press says:

"It is asserted that the average yield for the State is less than 100 sacks per acre. On one large planting last season it was 32 sacks of 100 pounds each."

GRAND PRIZE.

The highest award by the International Jury of Awards at the P. P. I. E. was given the potatoes from Boa Vista Ranch for the best commercial exhibit.

STATE PRIZE.

In the contest for yield, held under the auspices of the State Horticultural Commission, this acre of potatoes was given the highest prize. Mr. W. V. Shear of the U. S Dept. of Agriculture acted as judge.

Gold Bear

fertilizer is always a prize winner.

Mr. E. H. Phreaner, of Boa Vista ranch, says: "Any one of ten acres would have won the prize. The average of 35 acres was 350 sacks, or 35,000 pounds. The potatoes are better type and will give a higher market grade than those receiving less fertilizer."

'By the use of 'Gold Bear' fertilizer the cost per bushel has been reduced, the production tremendously increased, and the quality improved."

Mr. E. H. Phreaner, Boa Vista Ranch, Placerville, California, will be glad to give information in regard to the use of fertilizer for the potato crop.

"Gold Bear" fertilizer paid him and it will pay you. You will draw a prize for a bigger crop, a better type, and a higher market grade.

Mr. Phreaner writes us: "The potato crop is turning out even better than we had expected. The quality is especially fine, enabling us to obtain an average price of two cents a pound for the whole crop."

For the "Gold Bear" Fertilizer book, write to—

WESTERN MEAT COMPANY
SAN FRANCISCO.



General Agricultural Review.

CITRUS AND SEMI-TROPICAL.

J. S. Jackson has purchased 130 acres of land near Strathmore, Tulare county, which he will plant to navel and Valencia oranges this spring.

Orange packing in the Ojai valley of Ventura county was started last week. The crop there this year is said to be of exceptionally fine quality and good prices are expected.

The Redlands Fruit Ass'n. has a new, up-to-date washer for oranges this year. Only dirty oranges were washed at first, but they came out so much brighter than the best from the trees that all are now washed.

Shipments of oranges bid fair to be the heaviest of the season from the Riverside district this week as the railroads are again able to operate. The total shipments from that section up to February 1 were 500 cars.

Railroads, express companies, hotels and merchants in all parts of the United States are being asked to co-operate with California orange growers in an effort to have oranges on every table, March 18, which has been set as Orange Day.

After three years of mulching basins around orange trees, D. C. Lefferts of Redlands is an enthusiastic advocate of the system. Crops have been increased while cultivation has decreased and he uses only about one-third of the water.

The Crown Jewel Co. is a recently formed association of 34 orange growers who have put up a $15,000 packing house near Redlands, since organization last October and are shipping through the Cal. Fruit Growers' Exchange.

The University Experiment Station at Meloland plans to set dates among their recently frosted citrus trees, hoping that the protection from sun in summer will improve the quality of the citrus fruit, and in winter will prevent frost damage.

One hundred and thirty orange seedling trees, 30 to 40 years old, belonging to M. C. Mascart of Redlands, produced 2,734 boxes of fruit, 82 per cent of which graded fancy and which netted him $2,018 a year. He has picked as many as 37 boxes from one tree.

Mr. R. C. Merryman of Exeter has just returned from Washington, D. C., where he was in conference with officials of the U. S. Department of Agriculture in regard to the 8 to 1 test for oranges. He states that the department is now disposed to do what they can to maintain the standard in question.

In his monthly report for January, C. W. Beers, horticultural commissioner of Santa Barabara, states that the cold spell has not damaged the citrus crop there so far as his office has been advised. The trees are well loaded with bloom, while a splendid setting of fruits promise a crop of ordinary tonage. At this time of the year the lemon grower needs to give special attention to conditions that favor the development of fungus rots about the growing fruits. In very many sections a systematic spraying of the ground under and about the bearing trees is resorted to, with marked financial returns for the expense. It will pay growers to give attention to this aspect of the industry.

OLIVES AND NUTS.

Parties on the Murdock ranch near Orland are planting 70,000 olive cuttings of the Mission and Manzanillo varieties.

Statistics compiled by Chief Deputy Horticultural Commissioner George P. Weldon, give the total bearing olive acreage as 15,642 and the non-bearing acreage as 11,574.

In order to secure larger olives every other tree in a small Mission orchard on the Craig ranch, near Fair Oaks, is being rooted up. The trees were originally 20 feet apart.

A report from Porterville states that there will be 600 acres of olives and 40 acres of almonds planted in the Poplar district this year. Irrigation pipe is now being installed for irrigating the orchards.

It is estimated that 15,000 cases of olives will be packed at the Tulare cannery. Supplies of olives are being secured from Lindsay, the fancy fruit being packed in glass for Chicago buyers. The California Growers' Ass'n will market the pack.

A company of men, mostly from railroad circles, plan on sub-dividing 5,000 acres of land in the Perris valley, of Riverside county. Included in their plan is the planting of a large acreage of olives which will be taken care of by the company till maturity.

GRAPES AND VINES.

As an indication of the feeling in Yuba and Sutter counties about the continuation of the Associated Raisin company, the grape growers there have signed up 5,000 acres with the association during the past few weeks and more meetings will be held before April.

Joseph Di Giorgio, new president of the Earl Fruit company, believes grape growers should plant more

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Highest award at P. P. I. E.

Highest price paid in San Francisco, Los Angeles and New York for our nuts.

WHY?

Because we **specialize** in walnuts and have spent years in improvement. When you get trees from us, you get the best that can be grown. The **cost** of trees is only a drop in the bucket in the cost of bringing a grove to bearing, but the **quality** of the tree is all important.

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You want a sprayer that is reliable—first, last, and all the time — a sprayer that will start up without trouble when you're ready to begin work and that will keep a-going until you're done. A sprayer like this can't be built in a day. There are 30 years of experience back of the Bean line—30 years of steady improvement, constant betterment, continual development. Today there are

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This is the Bean Little Giant for spraying and whitewashing. Most powerful barrel pump on the market. Large air chamber and no stuffing box. Porcelain-lined Cylinders and Threadless Ball Valves.

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which ends relief valve troubles. Holds the pressure at exactly the desired gauge. Absolutely sure, safe, dependable. When nozzles are shut off the engine works practically free, simply pumping the liquid back into the tank. This means less fuel, less wear and tear on engine and pump.

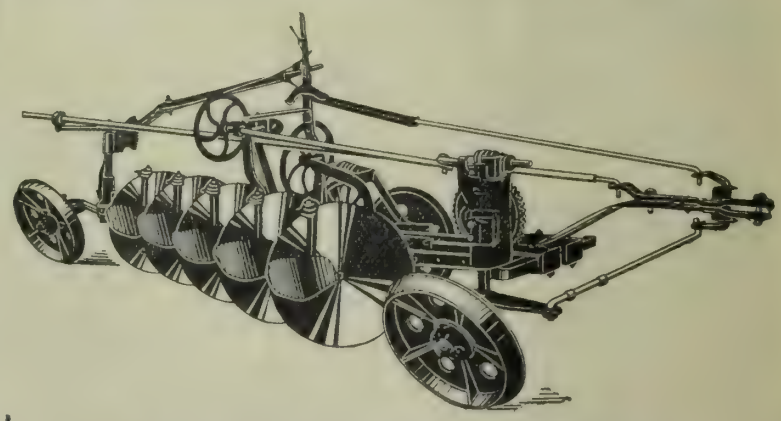
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Power Sprayers....Hand Pumps...

Bean Spray Pump Co.
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SAN JOSE, CALIF.



Knapp Engine Disc Plow

With this plow you can work within one foot of the trees in throwing the soil from the trees. Built very low, so that no part can come in contact with the limbs of the trees. Will penetrate hard soil and will not jump or swing around. Will turn under and completely cover up any cover crop or foul growth NO MATTER HOW HIGH OR HOW THICK.

WILL NOT CLOG UP IN PLOWING BURR CLOVER OR VETCH, as it has a wide clearance.

NO LEVERS to come in contact with limbs, as the land and furrow wheels are provided with worm-gear lifts, which does away with the levers and makes the plow easy to raise or lower.

TURNS EITHER TO RIGHT OR LEFT, and is steered by the engine as well as by hand.

The seat is in the center of the plow to keep the driver away from the trees, and all operating rods are within easy reach from the seat.

MADE IN ALL SIZES to suit every size and make of tractor.

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French Prune on Myrobolan, Royal and Blenheim Apricots on Myrobolan. Plum, Cherry and Apples in variety.

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20 Good Farmers
who have the "Pep," are tired of working for others, and wish to acquire land of their own. Land is in Tulare County, between Pixley and Spa, mostly graded and checked, and has been in Rice last year, producing from 30 to 40 sacks per acre. Also good for grain, fruits or alfalfa. Electric pumping plants, reservoirs, ditches and buildings. For rent on shares, or sale on crop basis, on long time and easy terms.
Address: R. C. Fairall, Pixley, Cal., or R. Schiffmann, owner, Chamber of Commerce Building, Pasadena, Cal.

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HYDRATED LIME.

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Write for prices, stating quantity and variety wanted.
W. A. T. STRATTON,
Petaluma, Calif.

Tokay, Malaga and Emperor grapes as we practically have a monopoly on these grapes and if properly graded and advertised these crops should prove very profitable to the State.

Business men as well as growers and officers of the Associated Raisin company are making a strenuous campaign in all parts of the San Joaquin valley for additional acreage of raisin grapes, as it is the belief of everybody that unless the association is supported, raisin prices will revert back to the low standards which prevailed before the organization of the raisin company was perfected.

DECIDUOUS FRUITS.

Fifty acres of the old Spangler ranch near Yuba City is being planted to pear trees by Mrs. Hale, the present owner.

A report from Lompoc states that from the number of buds on the cherry trees there it is evident that there will be a large crop of that fruit in the section this year.

Word has been received from Visalia that the peach growers of that place have decided to join the California Peach Ass'n, thus insuring the association unanimous support in the San Joaquin valley.

A report from Orange county states that a cannery is to be established at Buena Park in the old creamery building at that place. All kinds of vegetables and fruit will be handled and it is the intention to have the plant in operation this year.

The Beaumont orchard district is mostly planted to red apples, but recent plantings and prospective plantings for this spring are mostly cherries. Lamberts, Tartarians and Bings are being preferred. About 2,000 acres of fruit are to be planted.

Steps toward completing the organization of the California Growers' Ass'n were taken at a meeting of that association held at Tulare last week. If the present plans of the association succeed it is expected that it will become the largest marketing association in the State.

Reports from various peach growing sections of the State indicate that packers are endeavoring to make it hard for the newly formed California Peach Growers' association. A dispatch from Fresno says that one buyer has been offering five cents; but that the farmers are taking none of his bait, which is good news. Growers in other sections should take the same stand.

In an address to Sonoma county apple growers last week, President Jerome of the Watsonville Apple Distributors stated that apples sold by that organization last year which were packed under the State standard brought 10 cents a box premium. This State standard may only be used when the pack is put up in what is known as the Oregon box.

Twelve per cent of the prune acreage of Napa county was signed up for the Prune and Apricot Growers' Information Bureau, at a meeting held in Napa last week and members were appointed to canvass the prune growing sections for additional acreage. The organization of the Napa county branch will be perfected at a meeting to be held February 12.

Delicious apple trees 5 years old bear as much as 200 pounds in the Beaumont district according to Sec'y R. N. McCahan of the Beaumont Fruit Growers' Ass'n. He fears Rome Beauty will be too mealy at Beaumont, though it makes the fanciest kind of fruit in the Oak Glen district which runs up to 5,000 feet elevation, 1500 feet higher than Beaumont orchards.

County Horticultural Commissioner C. W. Beers of Santa Barbara county says in his monthly report for January that numerous shipments of fruit trees are being received in every section of the county and that growers have learned the advantage of having enough of one variety to make uniform boxes of peaches, apricots, etc. This means a possibility of entering the market with the highest grades of fruit.

The use of high-grade materials and skilled workmanship always adds to the production cost. But this added cost is a saving. Farmers understand this, and the most careful buyers use Yuba Tractors because they know that on every job on the farm, in every season of the year, the Yuba can be depended upon to perform its work efficiently and economically. The initial cost is more than justified by the absence of delays and breakdowns.

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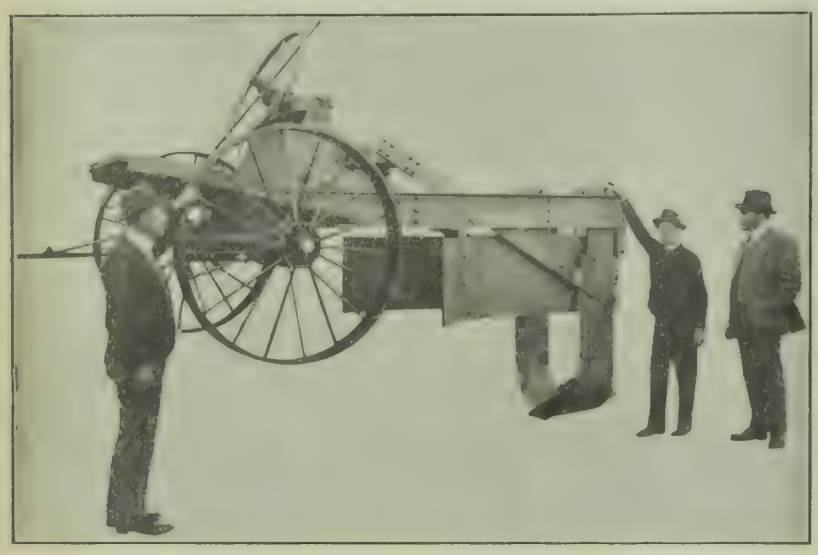
We have spent our entire life growing citrus trees. You cannot buy better citrus trees than we offer you. All trees from stock of 1 and 2 year buds, selected with greatest care, and taken from our own grove. Our nursery is located in a clean district—our trees absolutely free from insect pests, 5-8 and up, guaranteed TRUE-TO-NAME. You cannot beat our prices for quality stock.

POLLARD & MARTIN.

Mechanical Power on the Farm.

THE KILLEFER VINE PULLER.

The above picture shows the latest machine invented to pull grape vine stumps of which we gave description in our issue of Jan. 29th. Length of machine over all 15 ft., height 7 to 10 ft; eye beams 12" frames, two flat beams placed together for strength. At the rear will be seen the U-shaped standard with cutting edge that goes under vine stump and both sides. Attached to this standard are two "kickers" that lift vine from ground automatically. The machine weighs 7,000 lbs., and is the largest single implement ever built by the Killefer Mfg. Co. of Los Angeles. The strength of construction was passed upon by a technical engineer, and it the Vina ranch. The remarkable thing about its construction was that the machine went into the field and did the work, without readjustment, that it was designed to do. Mr. Stimmel has added a new machine to California's agriculture.



New Implement for Vine Pulling.

is built strong enough to stand the pull of two 75 h. p. tractors hitched tandem; however, one 75 h. p. tractor pulls it when at work. A Holt Caterpillar tractor was especially designed to pull this machine, having two guide wheels and its bottom covered with steel armor to keep out brush and stumps. This machine and two men will take out four times as many vines per day as will one tractor and twelve men. W. G. Stimmel designed the machine and it was built according to his specifications by the Killefer Company, to remove the vines from the large vineyard of

WHAT SIZE ELECTRIC MOTOR.

To the Editor: Will you tell me how big an electric motor I need to properly handle a one-inch centrifugal pump working against a 50 foot head, that is drawing water 20 feet out of the well, and putting it up in a tank 30 feet high?—W. J. A., Riverdale.

[Answered by Prof. J. B. Davidson, University Farm, Davis.]

[The normal discharge from a one-inch centrifugal pump is given by one manufacturer as 30 gallons per minute. The amount of piping is not given so it is impossible to estimate the friction head in the pipe, but if this is estimated to be 10 feet, the total head will then be 60 feet.

The theoretical horse power required to lift 30 gallons per minute against the total head of 60 feet is .52 h.p. It is customary with small pumps of this kind to increase the theoretical power by four; thus, 2 h.p. approximately will be required.]

ELECTRIC WALNUT HOUSE.

[Written for Pacific Rural Press.]

Electricity is the motive power and chemical agent in one of the best equipped walnut packing houses in the West, located at Goleta, Santa Barbara county. It includes graders, bleachers, crackers, packers, and everything needed to put the nuts into first-class shape, for sale by the Calif. Walnut Growers' Ass'n.

Alternating current is received from the "high" line to run a 20 kilowatt motor-generator. This generates a direct current of 140 ampers at 110 volts pressure. The direct current passes through a big "battery" submerged in an 8% salt solution. The salt is mixed with water in a large tank, 200 pounds at a time, and the brine run through the smaller tank in which the batteries are located. Electric action in the batteries liberates the chloride of the salt, which then passes with the water into the walnut bleaching tank.

The bleaching tank is 20x3½ feet and 2 feet deep. Across it at regular intervals are six cylindrical "tumblers" with long spike teeth. These tumblers, run by the 5 h. p. motor,

"Land Clearing"



Send for this free book on land clearing. It tells how to get your stumps out cheaply and quickly—without teams, digging, or blasting—with the



HAND POWER
K Stump Puller

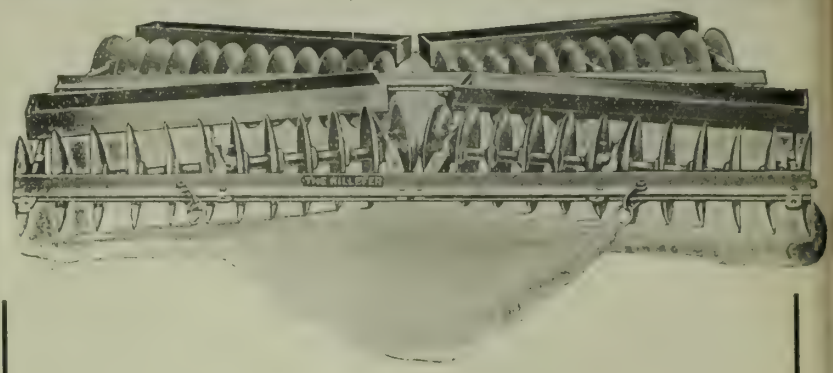
With its 264 to 1 leverage one man can pull any stump that can be pulled by any horse power machine. Owners report pulling from 50 to 100 stumps per day. Made of Krupp steel—weighs only 171 lbs.

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Our Engine Discs are built in sizes from eight to twenty feet in width. The Discs are made extra heavy for this class of work, and are stronger than anything obtainable on the market. The arbor bolts are large and all castings are made heavier in proportion to stand the extreme strain required of the Tractor Tools. The Discs are equipped with weight boxes to give the necessary weight to insure the proper penetration on different characters of soil. The pitch of the Disc is controlled by connecting arms bolted solidly in place, but which can be changed to any pitch desired within a radius of fifteen degrees.

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Our New 1915 Type Pump



Best Model for Low Lift Pumping

Size	1 in.	1¼ in.	1½ in.	2 in.	F. O. B. Cars
Price	$16.00	$20.00	$25.00	$30.00	Oakland

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Complete Pumping Plants of Any Size or Type Furnished and Installed.

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Pumping Machinery of All Kinds and for All Purposes.
Mining, Milling, Concentrating and Rock Crushing Machinery.
Ice Refrigerating Machinery, Cold Storage, Rooms and Counters.
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Pipe	Belting	Pulleys	Shafting	Boilers
Casing	Leather	Wood	Hangers	Steam
Valves	Rubber	Steel	Collars	Engines
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Woodin & Little
PUMP HOUSE

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SAN FRANCISCO, CAL.

Send for Special Catalogue Mailed Free.

which also runs the grader, turn constantly, all in the same direction. Nuts from the incoming wagons are dumped into one end of the bleacher, the tumblers forcing them under the solution and at the same time toward the other end of the tank where they are taken out by an endless chain conveyor two minutes after they entered the solution.

The conveyor takes them high up into the rolling cylindrical grader, which is perforated with holes to separate the Jumbos, No. 1's and No. 2's.

From the grader, the nuts are carried by belts run by another 5 h. p. motor into large "drier" bins with slatted bottoms sloping toward the center a few feet above the floor. The slatted bottoms permit drying of the nuts in about four hours. A blower was installed to hasten drying, but has been disconnected.

The drier discharges onto sloping aprons where girls are stationed to pick out all that are bad, shell spotted, or cracked, putting the cracked ones into separate sacks. The good nuts are conveyed to a packing hopper.

The cracking machine is run by a 2 h. p. motor. Nuts for this purpose are not bleached, but dumped into a hopper, whence a conveyor carries them high into a grader for three sizes. Each size is cracked by itself, being dropped from the grader into hoppers which feed the nuts regularly into the proper crackers. These are each composed of two carborundum disks, one flatwise above the other at the proper distance for the sized nuts. They whirl swiftly in opposite directions and crack practically all the nuts with minimum breakage of meats.

The cracked nuts are run through a fanning mill whence the meats and shells drop onto sorting tables. Girls here get 4 cents per pound for picking out the meats into No. 1's (light halves), No 2's (light pieces) and No. 3's (ambers). The meats are packed into paper-lined boxes holding 23 pounds of halves and a little more of pieces.

The outfit employs at times 70 girls on the grader and cracker. There were 46 girls and five men packing cartons of whole nuts, at once, about 10 carloads of these having been packed in 1915.

About 900 tons were handled last season, in spite of the worst visitation of blight ever experienced. Many of these were packed in bags holding 100 pounds net. Some, packed in 4-pound bags, looked too rough to take well with the trade. The first-class nuts are put up under the Diamond brand; the spotted, but not greatly inferior ones, under the Ruby brand.

PUMPS ARTESIAN WELLS.

[Written for Pacific Rural Press.]

Artesian water seems to be plentiful eastward and south from Coachella, but so many wells are being put in that some people fear a shortage from the shallower strata and are putting wells down to the 1400-foot level. C. F. Steinhardt is one of these. His well cost $2200, but it flows 56 to 60 inches. There are good water strata at 10 to 18 feet, at 100 to 180 feet, at 1000 to 1100 feet and at 1400 feet, according to A. A. Allen. He has a 550-foot artesian well which used to flow about 35 miners' inches, but has decreased so that he will install a 5 h. p. motor and No. 3 centrifugal pump, though it still flows all summer. This will enable him to irrigate the 20 above his well from from it instead of from his neighbor's well, which is already equipped with pumps to be used in hot weather.

Electricity costs only 2 cents per kilowatt hour, making cheap, convenient light in the home, and costing him only about eight cents per hour for the motor and pump.

It is also convenient for those who cannot stand the expense of an artesian well, since the 100-foot stratum is good reliable pump water.

Keep the dust cloth on the dust trap clean.

Keep your fan belt tight.

Where Good Tillage Pays Work close with the California Orchard Plow

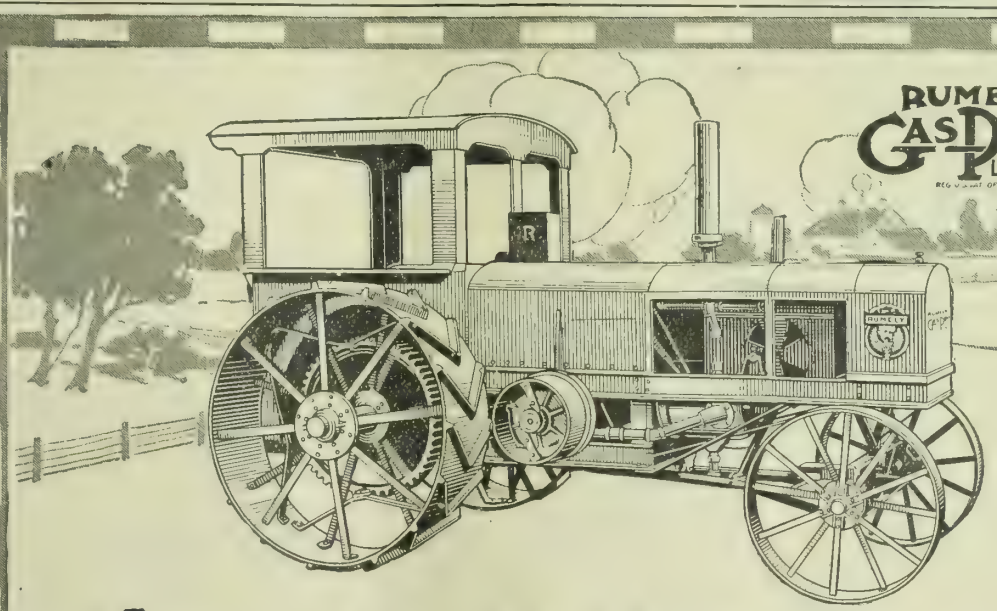
The yield and quality of your fruit depend largely upon the tillage your orchard receives. Choice fruits command high prices. You can't work among the trees and under the branches with ordinary tools. It will pay you big to learn about the

Cutaway (CLARK) California Orchard Plow

Reversible—turns the soil either to or from the trees. Extends under branches. Also made with additional extension, when desired, for unusually wide low trees. The Cutaway (Clark) California Orchard Plow balances right—there is no side-draft. Convertible into a field plow for general farm use. Has Cutaway (Clark) cutlery steel disks, forged sharp. It will improve your fruit crop. One of the many Cutaway (Clark) tools. If not at your dealer's write direct. Write for our free book, 'The Soil and Its Tillage.'



The Cutaway Harrow Co.
Maker of the original CLARK disk harrows and plows
876 Main Street
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Money Saved Is Money Earned

THE Rumely GasPull tractor commences to cut down farm costs the first day you put it on the pay roll. The "many job" tractor it has come to be called, and it lives up to its name on the Coast, as in all parts of the country.

Probably the first thing that will appeal to you in the GasPull is its light weight and extreme ease of handling. It weighs only 11,000 pounds and you can turn it on a 15-ft. circle. The convenience of levers, a safety cranking device and dependable foot brake help make operating easy.

The GasPull is equipped with a smooth running, powerful motor, all working parts are efficiently lubricated and fully protected from dirt and weather.

You will find that the GasPull completely fills the bill wherever there is plowing to be done, crops to plant and harvest, loads to haul, grain to thresh, roads to build, or wherever power is required to cut down farm expenses and increase farm profits.

The GasPull is as handy, powerful and efficient on the belt as at the draw-bar. It easily handles a thirty-inch separator to its full capacity. There is, of course, absolute freedom from sparks.

Then there's the price. Without making comparisons here, we can safely say that there is no better tractor value on the market. You'll find that a GasPull will cost much less than the horses or mules it will displace, can be maintained at much less cost and will do more work. Made in one size—15-30 horsepower.

We shall be glad to send you a catalog and full information.

Advance-Rumely lines include Rumely traction plows, the famous OilPull tractor and the new All Purpose small farm tractor, threshers, steam engines, hullers and huskers—all dependable machines and backed by Advance-Rumely service.

ADVANCE-RUMELY THRESHER CO.
La Porte (Incorporated) **Indiana**

San Francisco, Cal.

CHERRIES AT BEAUMONT.

[Written for Pacific Rural Press.]

Last year more cherry trees than apples were planted about Beaumont, where the red apple has already shown special adaptability. This spring, a greater preference is being given to cherries, according to R. N. McCahan, secretary of the Beaumont Fruit Growers' Ass'n. About 220 acres had been planted between 1909 and 1914 while over 150 acres were planted in the winter and spring of 1914-1915.

This popularity is based on two factors. A cherry orchard of twelve acres was set some twenty odd years ago on the Highland Home ranch at the east end of the "Valley" by H. H. Judson, along with similar plantings of many other fruits. This orchard now belongs to the Grigsby Realty Co. of Redlands and Cecil Gribsby states that the normal crop is 25 tons, though it has produced 35 tons, mostly Tartarians. The orchard was headed some five feet high, and a large proportion of the trunks seem to have sunburned and rotted. Many of the trees have been cut back almost to the heads. The new growth has proved vigorous and healthy, so that last season, in spite of a heavy hailstorm shortly before the fruit matured, a crop of 31,000 pounds was picked.

Good Markets and High Prices.—Cherries from the Beaumont district ordinarily bring one cent premium wholesale over other cherries on the same markets. A large proportion of last year's crop brought 10 cents per pound f. o. b. Beaumont, according to Mr. McCahan. This, on account of their freshness, large size, high color, and mountain flavor; for they are produced at an altitude of over 3000 feet with a background over 11,000 feet high on which snow stays till August.

They have been marketed at Los Angeles, El Paso, and points between. More distant shipments have been unnecessary because, aside from the Highland Home ranch which has its own free water, irrigation has been unavailable until seven years ago, so the rest of the orchards are still young, and the total production small.

The Lambert variety is becoming more pouplar, while there are a few Bings, fewer Royal Annes and Gov. Woods. Early varieties are no object here as fruits are a week later than at Banning, which is 400 feet lower than Beaumont; and three weeks later than Cabazon which is only 15 miles away.

A few Tartarians were shipped in May last year, but practically all were shipped between June 1 and 30.

FRANQUETTE WALNUTS.

[By Prof. L. D. Batchelor, Citrus Experiment Station.]

This old French variety is seen at its best in Central California from San Jose to Santa Rosa. It has also been extensively planted through the northwestern states. The trees are of medium productivity. The nut itself is large, symmetrical, and fairly uniform. The shell is well sealed but thin, cracking open easily. The kernel is light cream colored, of medium plumpness, and of excellent quality approaching the hickory nut in flavor. The lateness of the tree in leafing out and blooming in the spring enables it to avoid the walnut blight to some degree, as this disease is usually spread more readily during the early spring. The thick husk and the protection the nuts receive from the foliage makes the occurrence of sunburn very rare on the Franquette. This sort has had a much more thorough trial than the Eureka and can safely be recommended for much of the central and northern portion of California. In the south this variety is a failure, producing a weak, spindly growth and few or no nuts.

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320 ACRES (Tulare County).

2 Good Artesian Wells, with good flow of water. Pumping plant installed at one well which will supply over 100 inches of water.

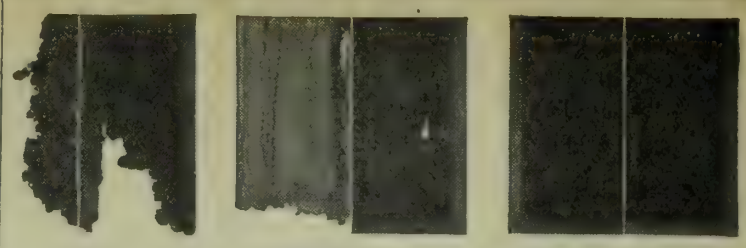
There is a **big bargain** in this for cash. Will sell all or divide it.

Also 580 acres in same section. One fine artesian well, with good flow; also a pumping plant that furnishes over 100 inches of water, good 5-acre reservoir.

Will sell one-half or all at **bargain.**

ADDRESS OWNER,
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Whittier, Calif.

ORNAMENTAL TREES, FLOWERING SHRUBS, FRUIT TREES, ROSES, PALMS, VINES, ETC.
Prices Reasonable.
PACIFIC NURSERIES,
COLMA, San Mateo Co., Cal.
Send for Catalog



STEEL PUDDLED IRON AMERICAN INGOT IRON

The Iron counts, far more than the Galvanizing!

THE above illustrations, reproduced from actual photographs, tell the story of rust resistance. When new all these pieces of metal looked about alike. After three years' exposure under identical conditions the steel was completely rusted out and the puddled iron seriously attacked. But the third was of the same pure iron from which are made

"ARMCO" AMERICAN INGOT IRON CULVERTS

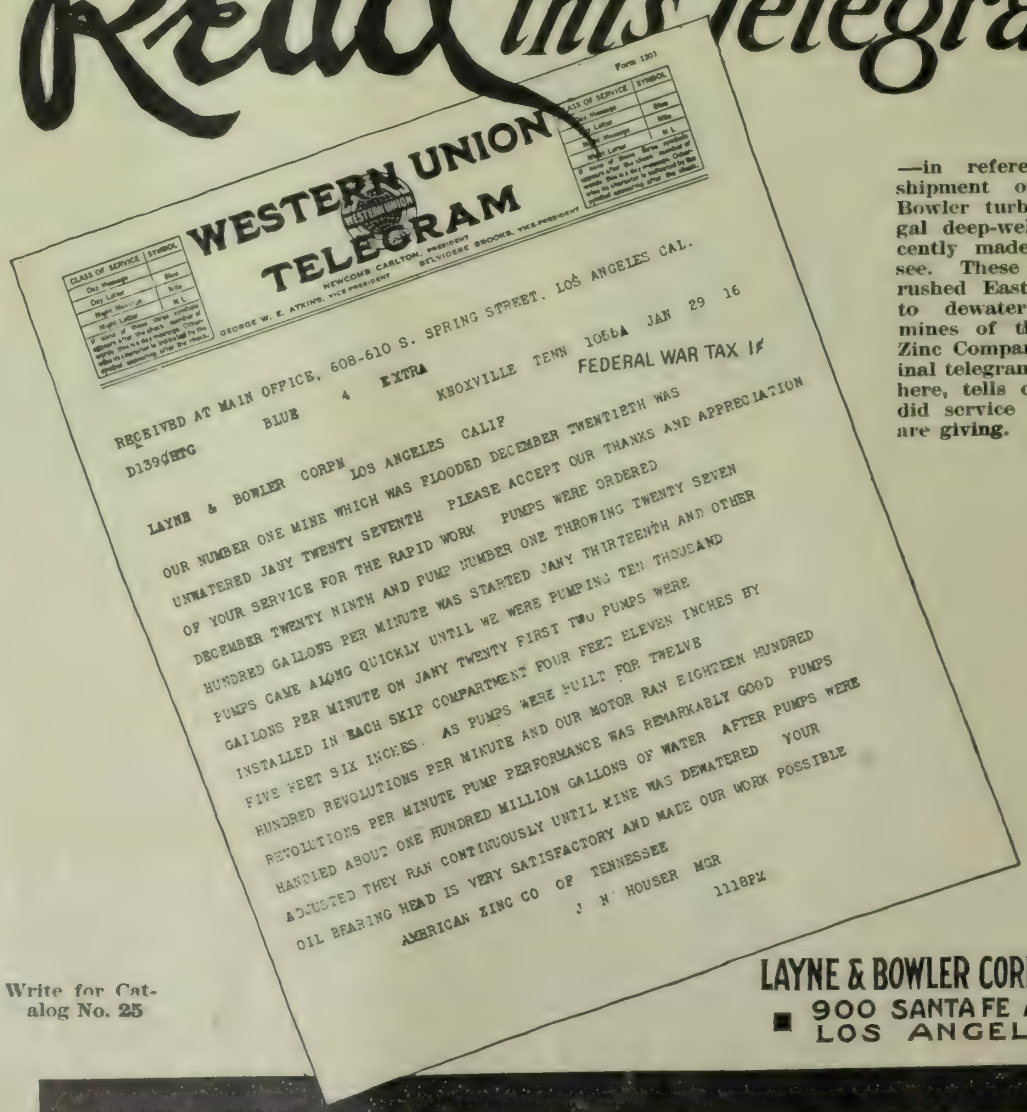
No rusting out here but a perfect piece of metal. No galvanizing or any other protecting material was used on any of these samples. The elements had free opportunity to attack and destroy them. Only "ARMCO" IRON stood the test. Its rust resistance is due to its uniform purity and the scientific care given its manufacture.

For full information on "ARMCO" Iron Culverts, Flumes, Sheets, Roofing and Formed Products, write the manufacturer in your vicinity, or

Armco Iron Culvert Manufacturers' Association
CINCINNATI, OHIO



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FEDERAL WAR TAX 1¢

OUR NUMBER ONE MINE WHICH WAS FLOODED DECEMBER TWENTIETH WAS UNWATERED JANY TWENTY SEVENTH PLEASE ACCEPT OUR THANKS AND APPRECIATION OF YOUR SERVICE FOR THE RAPID WORK PUMPS WERE ORDERED DECEMBER TWENTY NINTH AND PUMP NUMBER ONE THROWING TWENTY SEVEN HUNDRED GALLONS PER MINUTE WAS STARTED JANY THIRTEENTH AND OTHER PUMPS CAME ALONG QUICKLY UNTIL WE WERE PUMPING TEN THOUSAND GALLONS PER MINUTE ON JANY TWENTY FIRST TWO PUMPS WERE INSTALLED IN EACH SKIP COMPARTMENT FOUR FEET ELEVEN INCHES BY FIVE FEET SIX INCHES AS PUMPS WERE BUILT FOR TWELVE HUNDRED REVOLUTIONS PER MINUTE AND OUR MOTOR RAN EIGHTEEN HUNDRED REVOLUTIONS PER MINUTE PUMP PERFORMANCE WAS REMARKABLY GOOD PUMPS HANDLED ABOUT ONE HUNDRED MILLION GALLONS OF WATER AFTER PUMPS WERE ADJUSTED THEY RAN CONTINUOUSLY UNTIL MINE WAS DEWATERED YOUR OIL BEARING HEAD IS VERY SATISFACTORY AND MADE OUR WORK POSSIBLE

AMERICAN ZINC CO OF TENNESSEE
J N HOUSER MGR
1110PM

—in reference to the shipment of Layne & Bowler turbine centrifugal deep-well pumps recently made to Tennessee. These pumps were rushed East by Express to dewater the large mines of the American Zinc Company. The original telegram, reproduced here, tells of the splendid service these pumps are giving.

Write for Catalog No. 25

LAYNE & BOWLER CORPORATION
900 SANTA FE AVE.
LOS ANGELES

Keeping the Corral Clean in Winter.

[Written for Pacific Rural Press.]

In traveling through the dairy districts at this time of the year one of the commonest sights is to see cows standing over knee deep in muddy corrals. The writer was very much interested in calling at one place in Stanislaus county, recently, where the cows had a dry place to stand as well as protection from the cold winds that have been blowing so bad this winter.

The owner of this herd had built his corral on the west side of the barn and had boarded up the south side for a distance of 30 feet. This boarded part of the corral had a sloping roof 16 feet wide, built over it with the eaves extending well over the sides.

Drainage for the corral was arranged by scraping sandy loam soil from a lower side of the corral. By using a land roller and several barrels of crude oil, he had succeeded in getting a compact surface so that he could run a Fresno scraper over to clean out the manure and he found it was easier to clean than on a wooden or concrete base.

By extending the slope several feet beyond the fence it is not a difficult matter to keep the drain ditch open that carries the liquid manure from the corral to the aflalfa field.

It is the owner's belief that the nominal expense and time expended has been repaid a good many times in the past two years due to the fact that the cows do not fall off so much during the stormy weather. Then, too, he did not have to wear boots every time he entered the coral.

Hanford's Poland China Sale.

In spite of the fact that muddy roads and threatening weather kept many buyers away from the Hanford sale last week, there was a fair attendance, bidding was brisk, and fair prices were obtained throughout. Most of the consignors expressed themselves as being satisfied. While in some cases prices (especially for the better class of stock) did not come up to expectations, they felt they could afford the sacrifices made for the sake of the wide distribution obtained for their hogs. Therefore, the semi-annual sale of the Kings County Poland-China Breeders' Association has been successfully inaugurated. We feel confident that future sales will be even more successful.

There was manifested a specially strong demand for bred sows and there were not nearly enough of these to go around. There was a very large percentage of open gilts, which would undoubtedly have brought 50 per cent higher prices if they had been a month or so older and bred. There was also a rather large percentage of boars.

The one hundred and thirty-five head were sold in a little less than six hours and brought an average of $33 per head. The top price for boars was $125; for sows, $85. Sixteen head brought over $50; twenty-six head from $35 to $50; and seventy-four head, from $20 to $35.

M. Bassett took advantage of the sale to get back a boar that he had sold to Oscar Dimmick before his half brother, Banker Boy, was made Reserve Grand Champion at the Panama-Pacific Exposition and sold to Anita Baldwin for $1000. The price paid was $125, the top price of the sale. The top price for sows was $85 paid for Carnation, bred and consigned by Mr. Bassett. Fourteen head of Bassett-bred hogs consigned by Mr. Bassett and Mr. Dimmick averaged $53.75.

Besides topping the sale, Oscar Dimmick, a Lemoore High School boy, received the highest average price of any consignor; his four head averaged $67.50. Mr. Dimmick's stock showed not only good breeding, but good care and feeding. Quite a number of hogs at the sale were bid in by or for high school students at Lemoore and other places for the Boys' Pig Club Contest.

C. C. West secured four very fine sows, litter mates, consigned by W. Bernstein, at $65 each. Mr. West is establishing a purebred herd at Porterville. C. C. Potter of Lemoore also secured a fine sow from Mr. Bernstein's herd for $47.50. Thirty head consigned by Mr. Bernstein brought an average price of nearly $40 per head.

Warrior Cal., the fifth prize boar at the Panama-Pacific Exposition, consigned by F. D. Ross was bid in at $77.50. R. F. Guerin secured one of Mr. Ross' best sows for $47.50. Nine head consigned by Mr. Ross brought $355, or about $40 per head.

Chief's Laddie, a half brother to Banker Boy, consigned to the sale by Mr. Bassett, was bid in at $75 by T. J. Gilkerson for a company consisting of Thos. J. Woodworth, C. C. Potter, and himself. All these have purebred herds at Stratford, Kings county.

C. H. Christin of San Francisco was one of the largest buyers at the sale. He is establishing a herd on his San Fernando ranch.

Another large buyer was Otto Muller of Madera. Mr. Muller is subdividing his ranch into 40-acre tracts and stocking each tract with a start in purebred hogs.

The largest consignor to the sale was W. D. Trewhitt of Hanford with 35 head which brought an average of a little less than $30.

Besides being a large consignor to the sale, Geo. A. Smith of Corcoran contributed largely to its success by his very efficient work in the ring.

A decided improvement in the spirits of the crowd and in the bidding was noticeable after lunch, which consisted of 5 roast pigs done to a turn in the ovens of Bernstein's Bakery and served unstintingly and piping hot with beans, etc., on the side.

At the Rabies Conference held in Salt Lake City last week co-operation between various States, federal officials and stockmen's organizations and a federal appropriation formed the keynote of the rabies discussion. An appropriation of not less than $200,000 will be asked of Congress to use in exterminating predatory animals in an effort to stamp out a disease which has been spread through the West by coyotes, wolves and dogs and has taken a serious toll of livestock and even caused the death of human beings.

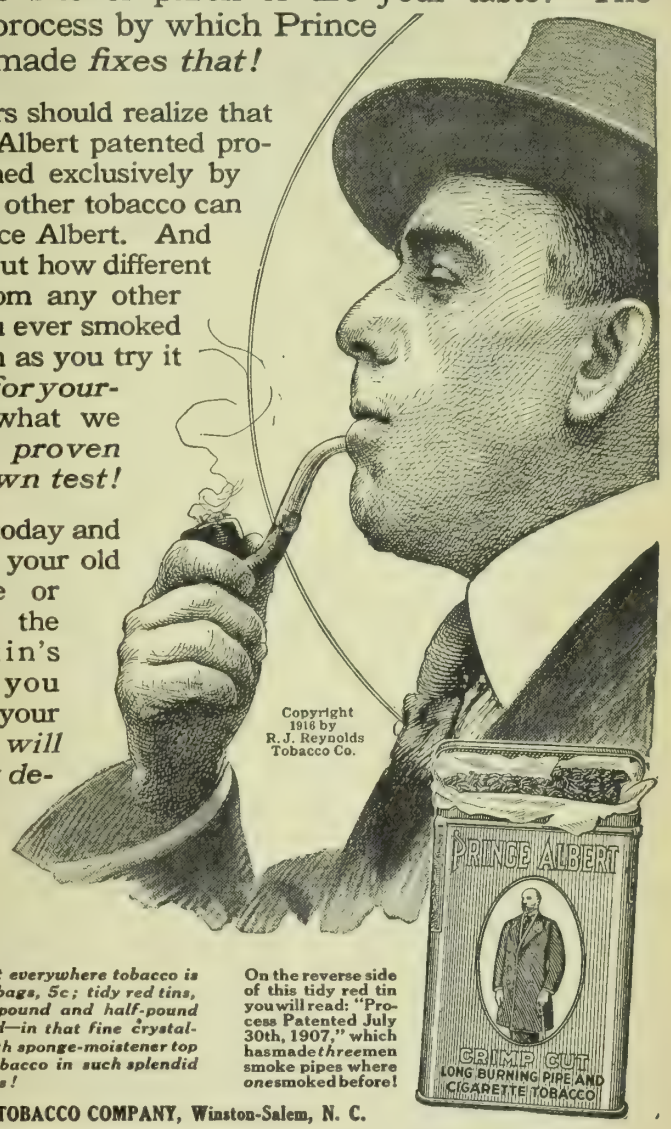
PRINCE ALBERT

the national joy smoke

puffs its kindly way right into your good will because it is so friendly and cool and fragrant. You may smoke it as long and as hard as you like and it will not bite or parch or tire your taste! The patented process by which Prince Albert is made *fixes that!*

You smokers should realize that the Prince Albert patented process is owned exclusively by us; that no other tobacco can be like Prince Albert. And you'll find out how different P. A. is from any other tobacco you ever smoked just as soon as you try it *and know for yourself* that what we tell you is *proven by your own test!*

Buy some today and smoke it in your old jimmy pipe or roll it into the best makin's cigarette you ever put in your mouth. *It will absolutely delight you!*



Buy Prince Albert everywhere tobacco is sold. Toppy red bags, 5c; tidy red tins, 10c; handsome pound and half-pound tin humidors—and—in that fine crystal-glass humidor with sponge-moistener top that keeps the tobacco in such splendid condition—always!

On the reverse side of this tidy red tin you will read: "Process Patented July 30th, 1907," which has made *three* men smoke pipes where *one* smoked before!

R. J. REYNOLDS TOBACCO COMPANY, Winston-Salem, N. C.

CALIFORNIA

Hog Book

A very handsomely printed cloth-bound book of 256 pages of text, besides many plate engravings. Written by a scientifically practical swine man with years of experience back of him.

In the feeding chapter a number of California breeders give their methods of feeding for best results. Just what is needed for swine producers of the Coast. Send us $2 and the book will be mailed promptly.

Price, $2.00 Postpaid.

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Grand Champion Sow, P. P. I. E.

Medium Type
POLAND-CHINAS

Choice breeding stock, both sexes, from Panama-Pacific International Exposition prize-winning strain. 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows. $2145 cash awards. Write to

M. BASSETT
Box P,
Hanford, Cal.

Convenient Economical Milk Barn.

[Written for Pacific Rural Press.]

One of the most modernly equipped, yet inexpensive milking barns found on a trip in Imperial Valley is that of R. D. Stitt near Holtville. It shelters 24 cows in two rows facing outwards; and it cost about $200 for material and labor. The concrete floor, about 16 by 35 feet, reinforced with hog wire and made of a 1 to 5 mixture, cost half of the $200.

Ten vertical 4x6's with creosoted bases two feet in the ground, support a flat roof of chicken wire resting on five 4x6's, which are laid flat and extend three feet on each side beyond the stanchions to protect the mangers. The roof is corner-braced in the end panels and the supporting 4x6's are corner-braced. Old hay is laid over the chickenwire; as Mr. Stitt says, such a roof is much cooler in summer than wood or metal. A wooden fence with gate in the center closes each end.

The gutters slope about 5 inches toward one end, whence the urine and floor flushings drain through cement pipe into a cesspool, which is not included in the $200 cost. The pool is 16 feet deep and 6 feet square, cribbed up and covered with redwood. It is pumped out onto the alfalfa three or four times a year by handpump. Artesian water is used to flush out the barn after milking. Solid manure is hauled to the fields separately.

A unique feature is the canvas protection hung on the north and west sides of this otherwise open-sided barn to protect both the cows and the milkers from blowing dust or rain.

A similar shed in the corral, with no floor or sides, shelters the cows from the summer sun. They rest during the heat of the day and eat at night in summer.

WHY HOGS DO NOT FOLLOW HAMS.

To the Editor: Please inform me who is responsible for the regulating of quotations on farm products and why bacon and hams have been marked up from two to three cents per pound by the wholesalers recently, while the price of hogs on foot is exactly the same as it was previous to the raise.—A. S. P., San Jose.

[The fundamental reason is that packers make the prices on their products and the hog-producer does not, but simply has to take what the packers offer. Probably the packers can give very good reasons for raising their selling prices, and there is nobody to make them see reasons for raising their paying prices.—Eds.]

METHODS OF FATTENING LAMBS.

The University of California has recently completed a six-weeks test at the University Farm in fattening 249 lambs for market. The results indicate that silage, whether made of Indian corn, dwarf milo, or sorghum, can be economically used in a ration which includes barley and alfalfa hay.

Fifty lambs fed on alfalfa hay alone made a daily gain of less than one-fifth of a pound each, yet these lambs ate twice as much alfalfa hay as lambs which were given also barley or silage. Both the latter methods resulted in a daily gain of a third of a pound. The silage fed lambs ate about the same amount of hay as the barley-fed lambs, but considerably less grain.

The quality of carcass of the grain-fed lambs, whether fed on silage or not, was greatly superior to that of the lambs fed only on alfalfa hay. Even if buyers should refuse to make any distinction in price when buying lambs differently fed, although the grain-fed provide much better meat, yet the gain in value over the cost of feed consumed, at the normal prices of barley, alfalfa, and silage, has been proved about the same in feeding silage or barley as in feeding alfalfa hay alone.

HOOF-BRANDING HORSES.

To the Editor: Will you be good enough to tell me if it is practicable to brand horses on the hoof. I understand this is done, in some cases with registered stock, and if the hoof brand does not grow out too fast, it would be preferable to the ordinary brand on the hip or shoulder. Any details as to the actual work would be appreciated.—S. J. F., Kearney Park.

[Hoof-branding of horses is entirely practicable, if done once a year, otherwise it is not, as the hoof grows out and wears off in a longer period and you lose the number.

Irons for hoof branding are made the same as ordinary branding irons, except that the letters or figures are much smaller, say one-half or three-quarter inch in height. A good plan is to have 10 brands, from cipher to nine, in order that you can number as many horses as you desire and give each horse a separate number. After heating in a fire, the branding iron should be placed well up on the hoof of one of the fore legs and allowed to burn fairly deep. Two men are needed, one to hold the horse and the other to use the iron, although there is nothing about the operation which hurts the animal any more than shoeing.—Editors.]

DRIVING MAKES HORSE SICK.

To the Editor: Will you please give me a remedy for a horse that seems to be all right when working in the field, but he gets sick and has diarrhoea when driven on the road any distance? He is also falling off in flesh. I feed him oat hay and a little wheat hay.—E. J. F., Calistoga.

[Give one quart raw linseed oil at a dose, and then follow with one dram fluid extract nux vomica twice a day and two drams naphthalene once a day.]

PARALYZED MARE.

To the Editor: I have a mare that became paralyzed and stiff all at once. She eats and drinks plenty, but very slow. I have been feeding her barley hay with some alfalfa. When she lies down she can't get up. Looks bright out of her eyes and was in good condition when taken with this trouble, but is growing very thin, Has been in this condition about a week. How should I treat her?—T. D. B., Berenda.

[Give one dram calcium iodide twice a day in water, also two drams hexamethylamine in water three times a day.]

The Los Altos Stock Farm sent several Percheron stallions to Ukiah where they will be sold to farmers.

REMCO
REDWOOD PIPE

All diameters from 2 inches to 12 feet. Much cheaper than any metal pipe. Will carry 30 per cent more water than metal or cement pipe of same diameter. Will outlast any metal pipe except cast iron. Cannot be injured by roots or displacement. Furnished for any pressure from 0 to 400 feet, and guaranteed for 100 per cent overload.
Write for further information, prices. etc.

REMCO
Redwood Tanks

Cheaper than metal tanks. Last longer. Cannot rust. Not affected by chemicals in water. Thousands in use in the West.

We make them in all shapes and sizes, from 200 gallons to 500,000 gallons.

Redwood Manufacturers Co.
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HILLCREST STOCK FARM
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SHORTHORN CATTLE
Shropshire and Merino Sheep
FOR SALE, SINGLE OR CARLOAD LOTS



KING LANCASTER,
Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.
THEY HAVE GRAND CHAMPIONS BEHIND THEM.

40 Shorthorn Bulls and Heifers
REGISTERED AND TUBERCULIN TESTED.

NOW, at my farm at Perkins, 6 miles East of Sacramento. This stock was purchased from the best herds in Nebraska for my California trade, and are as fine a lot of one and two-year-olds as I could secure. Inspection invited. Call and see them before purchasing elsewhere..

Also have a few registered BERKSHIRE GILTS for sale.

I will leave shortly for the East to fill orders for Shorthorns and Herefords. Write me at once of your wants so that I may fill your order on this trip.

H. L. MURPHY
PERKINS, SACRAMENTO CO., CAL.
Brighton Herd of Shorthorns. Established 1880.

HOG FEEDERS --- POULTRY RAISERS
COBWELL ORGANIC MEAL
Feeding This Product Makes the Business Profitable.
At Adds 1¼ POUNDS DAILY to your HOG.
Makes Hens Lay—Well-Balanced Feed—High Protein.
Write or Phone for Particulars and Sample.
$14.00 PER TON.
WILLITS, PATTERSON & GREEN, Selling Agts.
Corner 6th and Crocker Sts., Los Angeles, Cal.

Cows for Settlers on Subdivision Tracts.

(Continued from page 185.)

Second—it furnished the land buyers a good market for their crops and enabled them to make a living and to more promptly pay for their homes. Third—it did a lot of good in educating a few bankers and business men in this kind of business. It resulted in a group of farmers each with a small bank account who paid their bills monthly and who had a little cash in the bank. The land company was benefited by having a few good settlers who, if they could not at once pay for the land, were improving it and paying interest and now are in much better condition to pay up the principal.

A review of this work three years after it was carried out shows that it was successful. The farmers who bought the cows and who have remained on the project have been able to make a living and in nearly all cases have paid for their cows and had a constant market for their alfalfa crop at remunerative prices and are now in a position to more rapidly pay for their land. In some cases it has been possible for them to make substantial payments on their land as well as make a living, and even where it has not been possible for them to pay towards the land the company has been able to collect interest on unpaid land contracts and now stands a much better show to get the principal than before. The position of the owners of dairy herds is in striking contrast to settlers who depended upon the general market for sale of alfalfa, or who went into fruit or vegetables—many of these have run out of capital.

The plan was entered into by the land company not only as a means of helping the settler out, but as an advertising scheme to attract dairymen. The land company has lost a small amount of money loaned to farmers on cows, but the benefits they received have far exceeded the losses. Losses were nearly all due to mistake in judgment of men. In several instances purchasers of land and cattle became discouraged and practically threw up their holdings and turned the bunch of cows back upon the company, causing much of this loss. Had it been possible to judge men better these mistakes would not have happened.

The community in which this experiment was carried out is rapidly becoming an excellent dairy region and the success of dairying has now encouraged bankers and creamery men to bring more cows into the country, and the land company is no longer engaged in this cow business.

This is one example of the practical method of rural credits and it is believed that it is one which many other large land owners in this State might profitably follow.

In carrying out such a scheme it is essential to secure farmers who will stay with the game. Many of the settlers of small tracts have get-rich-quick ideas and a year or two of hard work seems to discourage them. It is essential to have men who understand and like the dairy business. Men have been known to go into dairying whose only knowledge was gained from reading. Such men sometimes get tired of the hard work connected with the business. With real dairymen who have stick-to-it-iveness and soil and water to grow alfalfa there is probably no better method of rapidly developing the country than to loan men, who have feed, the money to buy cows.

The annual report of Secretary G. D. Wolfensparger, of the Nevada state sheep commission, for the year ending November 1, 1915, places the total number of sheep, bucks and goats in the State at 1,029,410, with a total valuation of $3,438,148. There are 1,020,539 sheep, 8,246 bucks and 625 goats. In 1914 there were 910,226 sheep, bucks and goats in the State with a total valuation of $1,839,773, showing a gain in the industry for one year of $1,598,275.



Registered Jacks

Range raised; Guaranteed satisfactory breeders. Field Jacks a specialty. Registered Shire Colts. Will trade for young mules, horses or land.

James W. McCord

Hanford, California.

PEDIGREED HOLSTEIN BULL $250.

I am now offering a very fine bull out of a high-testing dam, who was sired by King Pontiac Premier, one of the best sons of King of the Pontiacs, 165 A. R. O. daughters. Her present record is 21.09, made at four years old, but she can make around 25 lbs. with next calf. On the sire's side the bull has the blood of Pietertje Hengerveld Count De Kol, 99 A. R. O daughters; and dam Deutschland Creamelle, is out of Creamelle Vale, the former world's championship milk cow. This young bull is almost white in color and is ready for service.

Write or come and see him.

F. H. STENZEL,

San Lorenzo, Calif.

Oak Grove BERKSHIRES

CHOLERA IMMUNE

Our herd is Cholera Immune, the only immune Berkshire herd in the State.

Fine herd boars in use and they are second to none on the coast. Our sows are of equal merit.

We have at present some 300 Berkshires and we know that we can supply what you want.

Write Us or Call.

OAK GROVE DAIRY FARM

H. G. ARMSTRONG, Prop.

Woodland, Cal.

HORSE OWNERS! USE



GOMBAULT'S **CAUSTIC BALSAM.**

A safe, speedy and positive cure. The safest, Best BLISTER ever used. Removes all bunches from Horses. Impossible to produce scar or blemish. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

REDWOOD TANKS



Great Reduction on Redwood tanks. Write today and get complete information and prices. Thirty-five years in this business in Stockton.

Phone 2957.

R. F. WILSON, Stockton, Cal.



"Velvet" For Dairymen

West Chester, Pa.

February 3rd, 1916.

Mr. Dairyman:

We have a wonderful new invention and I want to tell you about it myself. It is a source of new profit for dairymen without added expense which I call "velvet," for it is *all profit.*

Thirty-five years, longest in America, the Sharples plant has been devoted exclusively to the Cream Separator.

Its inventors produced the first cream over-flow bowl with its superior quality of smooth even cream, the first directly driven steam Separator, saving power, fuel and wear, the first and only tubular bowl with its doubled skimming force and efficiency and extreme simplicity, the bottom feed, the hanging tubular bowl, all making for convenience, durability, economy of maintenance and operation.

Now we have made another great invention, greatest of all as a profit producer, though so simple that it seems we should have had it long ago.

Thousands of carefully made observations by competent investigators, government officials and scientific men have proven beyond question that 95% of all the hand driven cream separators in America are turned below regulation speed, below the speed marked on the handle, a great part of the time and *every* hand separator is under-speeded *some* of the time.

No matter which separator, whose make, or what it is capable of doing when turned at full speed, it will lose cream and a lot of it, when the speed is allowed to drop even for a moment, and with the cream goes the profit.

THE NEW SHARPLES SUCTION FEED

Separator will stop this loss, aggregating millions of dollars annually to America's dairymen—stop it at once and forever.

No matter if you turn this Separator at widely varying speeds, fast or slow, it skims equally clean—no cream will be lost. The bowl *drinks its milk supply as it needs it,* always in exact proportion to the separating force within the bowl. At slower speeds it drinks less, at faster speeds more, but always just the right amount for *clean* skimming.

A thousand of these machines are in regular daily use; we demonstrated them to a finish before nnouncing them; it is the Sharples way—*absolute perfection before sale.*

The Sharples Suction Feed Separator has several very important advantages in addition to its certainty of clean skimming at any speed. The varying of speed does not change the thickness of cream; fast turning increases the capacity much above normal, just as you whip up a horse, when in a hurry. The supply can is but knee high and the machine throughout is simpler and better than ever.

We sell our Separators now, as always, subject to free trial by the buyer; but a stronger guarantee than any trial is the unbroken record of the growth of this business from the small beginning of 35 years ago to its immense proportions of to-day. It could not grow so except by the unbroken rule of complete satisfaction to customers.

Lack of space prevents explaining more fully; but send today for new book, "Velvet for Dairymen," that tells all about this money-saving invention.

Sincerely yours,

P. M. Sharples

President.

The Sharples Separator Co.

Also Makers of Mechanical Milkers and Gasoline Engines

West Chester - - - Pennsylvania

Chicago San Francisco Toronto Portland

With the Live Stock Men.

DAIRYING.

The Hutchins Bros. have installed an Empire milking machine at their 30 cow dairy in the Chowchilla district of Madera county.

Several berry growers in the vicinity of Forestville, Sonoma county, are tearing out their vines and expect to go into the dairy business.

E. F. Fottrell, who owns 200 acres on the Stanislaus river near Escalon, has 40 acres checked for alfalfa. He expects to engage in dairying and hog raising.

The annual meeting of the California Creamery Operators' association will meet in Eureka sometime between September 15 and October 1, this year.

The two-year-old Holstein cow Majestic Crane 3rd, owned by the J. B. Harlan company at Woodland, has just finished a seven-day official test with 18,23 pounds of butter.

The Edgewild fruit ranch near El Centro is to be stocked with pure-bred Holsteins from the best families found by its owner on a recent two-months trip in Wisconsin, Illinois, etc.

The owners of the Sanitary Dairy in Imperial county expect to erect a new milk house, equipped with a pasteurization plant and in other ways improve the sanitary conditions of their dairy.

U. Strader reports having sold 14 Dutch Belted heifers and 15 cows to Lloyd Zeigler of Milford Valley, Utah, recently. Also one Hampshire boar to Wm. Thrash of Meridian, Sutter county.

Edward Peterson and John Christensen of Humboldt county have just purchased the 360-acre ranch owned by the Frank Tyron estate in Del Norte county, upon which they will establish a dairy at once.

All stock bought for the 100-cow dairy operated by W. L. Hodges near El Centro was tuberculin tested and did not react. The deputy State Veterinarian did the testing, and will repeat it on the herd semi-annually.

J. D. Huston of Imperial has over 100 purebred Jerseys. One of the herd bulls is a grandson to the brother of the International champion at the last show. Another is a grandson of Stoke Pogis of Prospect.

H. S. Reed of El Centro recently returned from a trip to the Eastern dairy States, where he looked for the reasons for the poor butter heretofore shipped from Imperial Valley. He believes poor cream is the trouble.

A big meeting of dairymen and creamerymen will be held in Eureka, February 26, to discuss the sliding scale payment for milk received by the creameries. A movement is on foot to pay for milk according to the bacteria count in Humboldt county.

According to the daily press the Southern Pacific has just closed a deal with Sir Francis Webster of Glasgow, Scotland, which involves 19,000 acres in the west side of Stanislaus county. The report states that the owner will establish a large dairy on the land and engage in live-stock breeding on a large scale.

The stockholders of the Valley Flower Co-operative Creamery in Humboldt county have decided not to accept milk from turnip-fed cows. The practice of turnip feeding has been generally frowned upon on the ground that it flavors the butter when fed in excess, thus hurting the price of all butter coming from Humboldt county.

The large dairy being established at Palo Alto by Tichenor and Fleishhacker will be one of the most modern plants in the State when contemplated. Loudon stanchions and equipment are being installed and a Calf Way milker will be used. This has promise of being the largest Holstein breeding establishment in the coast counties.

The Henderson Ranch Co. of Sacramento reports that Preciora Sir Crane Hengerveld, a three-year-old Holstein, produced 18.60 pounds of butter in seven days recently. This record was made after raising two calves in 10 months. River View Pontiac Korndyke of the same herd has just dropped a fine 120-pound calf and is giving 80 pounds of milk daily. The sire of this calf is a son of King Segis.

Frank M. Helm of Fresno has sold the holstein bulls, Lord Bakker De Kol and Lord's Zampa Snowflake, to Robt. Hind of the firm of Hind and Rolph of San Francisco. Mr. Hind has shipped them to Honolulu customers. Mr. Helm has 12 daughters of the bull Prince Beauty Pietertje Segis, which he recently purchased from Hewitt and Hewitt, that will be put on test right away. A new testing barn is being erected on his ranch near Fresno and preparations being made to do more official work than has been done with the herd in the past.

SWINE.

Several cases of hog cholera have recently been found in the Farmersville section of Tulare county and immediate steps have been taken to eradicate the disease.

Four carloads of hogs were purchased at Hanford last week for San Francisco shipment. The lot ran from 200 to 250 pounds in weight and netted the farmers 6½ cents a pound.

What is said to be the last car of hogs of the season, left Oakdale last week for the San Francisco market. Like most other California sections the hog shipments from Oakdale have been larger this year than for many years past.

Elmer Lamb of Ceres writes that he has recently received a fine-bred Duroc Jersey boar pig from Watt and Forest, Xenia, Ohio. His sire is Orion Cherry King, Jr., and his dam is by Taxpayer. She is a half sister to the World's Grand Champion boar "Taxpayer 13."

Duroc fanciers should not overlook the Ross sale of Durocs to be held at Modesto Wednesday, February 16, at which time 40 head of sows and boars will be offered at auction. Stanislaus county is already a large "red hog" county and this offering should find a ready sale close to home.

The Imperial Valley Bankers' association are a good bunch of fellows besides being level-headed business men. This is shown by their contribution of $500 in cash prizes for the newly organized pig clubs in Imperial valley. These bankers believe that by promoting the hog industry a great profit will ensue to the entire community. Too bad there aren't a few other bankers so close to "real life" in their communities.

HORSES.

A Los Angeles buyer has just purchased 41 head of mules at Stockton to be used in the sugar beet fields of Ventura county. The average purchase price of the entire lot was $172.

War horse buyers are reported in several towns over the State again, in many instances advertising for as many as 1,000 head. An Idaho buyer is reported to be in Santa Rosa from where he has already shipped three carloads.

A one-half interest in the Percheron horse Carnot has just been sold by W. S. Corsa, owner of Gregory Farms, White Hall, Illinois, for a consideration of $20,000. This is the most notable sale on record in any country and will be of interest to those who saw the get of Carnot which were shown by Mr. Corsa at the P. P. I. E.

SHEEP.

According to P. Connolly lambing is proceeding favorably in the sheep camps adjacent to Livermore despite the bad weather, and the percentage will exceed 100 per cent.

Several thousand head of sheep have recently been taken into the Palo Verde valley in Southern California from New Mexico. They are said to shear about nine pounds. Shearing this year will start about the middle of February.

C. H. Widemann is reported to have leased 2,840 acres of land near Kings City, Monterey county, which he will turn into a large milch goat ranch. He already has several hundred head of goats and expects to have a flock of 3,000 head.

Sheep men who have their flocks in Nye county, Nevada, are said to

Classified Advertisements.

MISCELLANEOUS.

SUDAN GRASS SEED for sale by the rower, direct to farmer at a saving of 60 per cent—less than Seed dealer's prices! Choice seeds; none better. Send in your orders now while it lasts. Greatest forage crop known for dry or irrigated land. Better and finer hay than Timothy. **Wm. P. Spalding, R. F. D., No. 1, Box 64, Los Molinos, Cal.** 30c. lb. small lots; 50 lbs. and over at 25c, delivered.

SAVE MONEY ON YOUR PUMPING PLANT—We are reducing our stock of Gas Engines, Oil Engines, Centrifugal Pumps, Friction Clutch Pulleys, etc., and can name you very low prices indeed. Write us at once. Commercial Iron Works, 481-497 Fifth St., San Francisco, Cal.

MOGUL TRACTOR, 45 H. P.; used one season; fine condition; will demonstrate; have no use for it; will sell for half cost and give terms, or exchange for horses or mules. Drills, discs and other farm machinery for sale. Address W. H. Hord, 704 Market St., S. F.

WILL SELL TOGETHER OR SEPARATELY—3 five-disc plows, scarcely used. Best made—none better for small or large tractor.. Would consider good auto as part payment. P. O. Box 654, Burlingame.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

BARGAINS—One new Deal (John Deere) 4 point, 41-inch tractor plow; 1 2-disc La Crosse orchard plow; 1-12 feet. Rival Disc harrow, 20-inch discs. J. E. Thomas, Gilroy, Cal.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

BUY ROASTED COFFEE WHOLESALE—Rest, 10 pounds $3.00 delivered. Order with remittance, WM. J. SCHROTH CO., 112-B Market St., San Francisco.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars Pacific Co-operative League, D236 Commercial St., S. F.

APPLES!—Buy direct from producer. Newtowns, 90c Bulk pack, 4 and 4½ tiers, equal proportion. No 2 grade for cooking, 65c. Edwd. A. Hall, Watsonville, Cal.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

ASK FOR SNOW'S GRAFTING WAX—If your grocer does not have it, send to D. A. Snow, R. 3, Box 255, San Jose, Cal.

TREES AND NURSERY STOCK.

TRIBBLE NURSERIES, ELK GROVE, CAL.—Grafted walnuts and grafted paper-shell pecans. Exclusive propagators of Tribble, Mayette, Kerr Parisienne, Glady and Improved Franquette. 19 other varieties. Fine stock of almonds, prunes, Bartlett pear on resistant roots and other fruit trees and plants. New list ready.

CALIFORNIA GROWN SUDAN GRASS SEED—Absolutely free from Johnson Grass or other Weed seed. Plant all you can of it; for Broody Chicks and laying Hens or stock of any kind you can't beat it. 30 cents per lb. Write for prices on large lots. Lasher's Hatchery, Petaluma, Calif.

CITRUS TREES—40,000 assorted—25c in tree row; 25c balled; subject to advance. All big, two-year-old stock. Choicest ever produced by anybody, anywhere, at any price. Lem A. Brunson, Santa Fe Springs Nursery. Office, 1120 Haas Building, Los Angeles, Cal.

SEED BEANS—White Tepary; grow without irriation, 800 to 1000 pounds to acre. Clean seed, raised in San Joaquin Valley, for sale, 8 cents per pound. Carrying charges prepaid on lots of 50 pounds upwards. Robert A. Read, R. F. D. No. 1, Delano, Cal.

CLOVERDALE NURSERY CO., Cloverdale, Cal.—(Resistant Grape Vines exclusively)—Wine and Table grapes of all leading varieties grafted on resistant roots. Rooted resistant stock of all improved varieties for table and field grafting. Also cuttings of resistant stock.

BURBANK'S Spineless Cactus—Direct from the home of the originator, Santa Rosa, Cal. We are now offering the new improved varieties of forage and fruiting cactus for cattle, hogs and poultry. Write for our pamphlets and price list. J. I. Jewell, Santa Rosa.

BUY PURE CALIFORNIA DESERT GROWN SUDAN GRASS SEED (and avoid Southern States Johnson Grass) Send $1.00 for sample 3-lb. package, postpaid; special price on larger quantities. Send for circular. Rich & L. Ranch, Lancaster, Calif.

PEDIGREED BURBANK CACTUS PLANTS—10,000 $300; 1000, $45; 100, $7.50. Cheap Hog, Poultry Cattle fodder. Neighbors combine in ordering. Instructive literature. El Campo Co., 227 Story Bldg. Los Angeles.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

WALNUT TREES—Eureka and El Monte varieties a specialty; also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

FRANQUETTE AND MAYETTE grafted on California Black. Sizes 3 to 10 feet. Prices reasonable. Special discount on large orders. Sunset Nursery, 525 W. San Carlos St., San Jose, Cal.

MELILOTUS ALBA OR SWEET CLOVER—Recleaned and good seed 20c f. o. b. Any quantity up to 2000 lbs. Samples sent on request. V. M. Shuey, Manzanar, Inyo Co., Cal.

WALNUT TREES — Late blight-resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California black root, as the California Black root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

WALNUT TREES—San Jose Mayette, Barry Mammoth—on California Black Root, at lowest prices. San Jose Mayette, Barry Mammoth and Franquette Grafting Wood for sale. California Black Seedling Trees. Write for our low prices. Mammoth Walnut Nurseries, P. O. Box 597, Watsonville, Cal. Nurseries at 80 Tully Road, San Jose, and Watsonville, Cal.

FOR SALE OR EXCHANGE—1500 San Jose Mayette Grafted Walnuts. Six to ten feet. Price low or will exchange on light auto or good heavy team. Chas. Story, Rivera, Cal.

FRUIT AND ORNAMENTAL TREES—Almond, Prunes and Pears. Berry plants. We contract to plant and care for orchards. Panama Nursery Co., Concord, Cal.

WALNUT TREES—Grafted and Seedling. Also fine field-grown Ganter and Harman Avocado trees. Write for prices. Magnolia Nursery, Whittier, Cal.

SOUDAN GRASS SEED—California grown and pure. For prices write undersigned and state quantity wanted. George Boock, Los Molinos, Cal.

WAGNER'S CRIMSON GIANT WINTER RHUBARB—Subdivided plants. $15 per 1000; $2 per 100. G. E. Shelford, Healdsburg.

SELECT LOCKEFORD BURBANK—Rural and American Wonder Seed Potatoes. $1.50 per 100. N. H. Locke Co., Lockeford, Cal.

FOR SALE—Spineless Cactus, 1½c per leaf. Inquire Mrs. E. J. Gallagher, Brown's Valley, Cal.

TEPARY BEANS FOR SALE—Eight cents per pound. Robert Paulsen, Lockwood, Cal.

FOR SALE—Spineless Cactus Plants. Prices right. B. C. Engbert, Byron, Cal.

PRUNE TREES—12 cents. Walnuts, 30c. Cash Nurseries, Sebastopol, Cal.

SEED CORN—Select ears or shelled. C. W. Jenkins, Live Oak, Cal.

APPLES, PEACHES—10 cents. Gage Nursery, Corning, Cal.

WANTED.

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. R. Humphreys, Principal, Stockton, Cal., Box 704.

WANTED—Position as foreman or superintendent large orchard or vineyard. Middle-aged married man. No children. Fifteen years' California experience one place. Best references. Box 206, Rural Press.

WANTED PROFESSIONAL BUDDER to bud 10,000 seedling peach trees. Apply H. F. Pixley, Corte Madera, Marin county, Cal.

LAND FOR SALE.

FOR SALE—135 acres—Alfalfa Ranch. 130 acres solid alfalfa, second year, perfect stand. An ideal dairy ranch. Will support 100 to 150 cows. Under the most efficient irrigation system in the State. Fronting one-half mile on improved highway. Adjoins two main line railroads with siding on ranch. Close to four different shipping points. Twenty minutes from Stockton, a city of 50,000. Three miles from Manteca. Climate and health conditions unexcelled. New bungalow, barn, two windmills, large tank and beautiful shade trees. I'll guarantee to rent it for at least $20 per acre. Price $35,000. Will give very easy terms to reliable party. Would consider selling half of it. This is one of the best opportunities ever offered a dairyman or investor. Address Owner, A. S. Bomberger, Lathrop, Calif.

10,000 ACRE STOCK RANCH FOR SALE—2679 patent land, balance Government land; part summer range, one-half winter range. 2500 ¾ South African Angora goats. 1300 will kid the 1st of April. 50 head of cattle, some horses, hogs, wagons, farming machinery, orchards. Some farming land, and well watered; miles of fencing. Price, $30,000.00. Income $5,000.00 per annum. Terms: two-thirds cash, balance on easy terms. Address J. A. Davis, care Lyonsville Stage, Red B'uff, Cal.

NEW OPENINGS—Enlarged Homesteads. Nearly TWO MILLION acres GOVERNMENT LAND, different counties, plainly marked on COUNTY SECTIONAL Maps, $2.50, any County. Booklet, map circular FREE. STATE MAP, showing 600,000 acres of SCHOOL land opening over State, $2.50. Order TODAY. Checks taken. JOSEPH CLARK, Sacramento.

FOR SALE OR EXCHANGE—The best little apple orchard in southern Oregon, right in the city of Ashland, 5,000 population. Average crop past ten years, 900 boxes Newtowns and Spitzenbergs. Last year, over 1,400 boxes, $1,700. Price, $7,000; equity, $5,000. Trade for stock or grain ranch, law altitude. O. H. Barnhill, owner, Ashland, Ore.

I OWN AND OFFER FOR SALE 475 acres of land situated in Solano Co. between Dixon and Winters. Good house and barns. About 80 acres graded for alfalfa. Food wells and irrigating pump. Adjoins the successful rice fields of this county. Price, $60.00 per acre. $10,500 cash and balance on easy terms. J. H. Petersen, Dixon, Cal.

FOR SALE—Sacramento Valley Dairy and Hog ranch of 60 acres, fully equipped. Close to town and school. 50 acres alfalfa, balance grain. Two sets buildings. Price, $225 per acre. For further information address: Owner, care Pacific Rural Press.

PROFITABLE LITTLE FARMS, in Valley of Virginia, 5 and 10 acre tracts, $250 and up. Good fruit and farming country. Send for literature now. F. H. La Baume, Agrl. Agt., N. & W. Ry., 419 Arcade Bldg., Roanoke, Va.

EXCHANGE—A splendid start for a home. Spokane Valley irrigated orchard in bearing. Commercial apples. Will trade for California property at a bargain. Will assume some. Value $3,000. What have you? Owner, J. L., 1724 Waller, San Francisco.

20 ACRES IN ALFALFA adjoining Kirkman Nursery, near State Highway. Fine pumping plant. S. H. Kunkle, owner, Madera, Cal.

WANTED GOOD FARM, or unimproved land from owner. H. L. Downing, 145 Palace Bldg., Minneapolis, Minn.

WANTED TO HEAR FROM OWNER of good farm for sale. Send description and cash price. R. G. List, Minneapolis, Minn.

be losing large numbers, due to the severity of the weather and the heavy snowfall. It is contended by the sheep men that they would not have suffered so badly had they not been held out of the county for some time by deputy sheriffs.

Sheep are to be used as fire preventers in the forest reserves of Southern California if present plans of C. E. Rachford are carried out. Sheep eat off all the small growth in the forests where the fires usually originate and in this way greatly lessen the fire danger. Mr. Rachford states that the reserves are well covered with grass this year and will afford pasture for 20 per cent more livestock than they did last year.

BEEF CATTLE.

Because of the heavy snowfall in Nevada, several cattlemen are said to be in San Joaquin county looking for pasturage for from 30 to 90 days.

The heavy snows in Mendocino county have been the cause of heavy losses of both cattle and sheep during the past two weeks. The loss was not only due to exposure but also to the fact that the feed was covered with snow for some time.

Large numbers of cattle have perished in Clover Valley, Nevada, as a result of the deep snow and severe weather which has prevailed there during the past month. Most of the animals sought refuge in the willows, where they were covered with snow and suffocated.

MISCELLANEOUS NOTES.

Ranchers in the Cuyama and Carissa Plans sections of Santa Barbara county are expecting to plant large acreages of fruit as soon as weather conditions will permit.

Farmers in Lassen and Modoc county have lost 369 head of cattle, seven horses and seven hogs since rabies got across the Oregon state line last fall, not including the losses the last three weeks in January.

Although the principal farm products in the United States were two per cent higher January 1 than at the same time in 1915, prices paid producers of meat were 5½ per cent lower than the year before and nearly one per cent lower than the five year average.

Livestock breeders will be pleased to learn that the directors of the Kings County Fair have decided to hold a county fair at Hanford the coming season. Kings county fairs are always worth while from a livestock standpoint, and stand out by themselves in comparison with some of the other county fairs held in the State in this respect.

LIVESTOCK DIRECTORY.

HORSES AND MULES.

8 JACKS FOR SALE from 1 to 6 years, or will trade for fillies or heifers. We took all prizes for mules at State Fair, 1913. Kelley & Son, R. D. 3, Box 93, Lodi, Cal.

FOR SALE—Large-boned, purebred mammoth Jacks. Best of breeding. Prices and terms reasonable. Satisfaction guaranteed. J. A. Dickinson, Fresno, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H Stenzel, San Lorenzo, Cal

VANADERA HERD OF JERSEYS is now offering fine heifer calves from register of merit cows with official yearly records. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

HOLSTEIN BULLS—Purebred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

SUNNYBROOK RANCH, Willits, Cal.—Breeders Registered Holstein stock. Young bulls for sale sired by Ruby Gem Cavary Lad. Prices reasonable.

FRANK MEACHAM, Petaluma, California.—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

WANTED—About 25 good dairy cows to be paid for in 12 equal monthly installments. Payment secured by mortgage on stock. Party reliable. Box 205, Pacific Rural Press.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

FOR SALE—7 High-Grade Holstein cows; 1 2-year reg. Bull; all young and heavy milkers; tuberculin tested. P. J. Traud, Concord, Calif.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class, thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TWO REGISTERED HOLSTEIN BULLS out of A. R. O. dams. Sired by King Mead. Ready for service. J. H. Harlan Co., Woodland, Cal.

TWO REGISTERED HOLSTEIN BULLS old enough for service. Very light in color. J. W. Benoit, Route C, Modesto, Cal.

WANTED TO BUY about 20 or 30 good dairy cows to be paid for from half the cream check. C. C. Pease, Kerman, Cal.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

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[Answered by Dr. H. B. Wintringham, Petaluma.]

Correspondents desiring a reply by mail should send money order for $1.00. No charge is made when questions are answered through this department.

HIDE-BOUND HORSE.

To the Editor: What can I do for a hide-bound horse?—A. N. S., Los Gatos.

[Give a handful of linseed meal in the feed twice a day.]

CAKED UDDER.

To the Editor: I have a dry cow that is going to freshen in about three weeks. One of the back quarters of her udder is caked. What should I do?—E. B., Modesto.

[Rub the bag with camphorated oil twice a day.]

HORSE WITH LUMP ON BELLY.

To the Editor: I have an old horse that has a lump on her belly about six inches long, four inches wide and one-half inch thick. When I push my finger in it it leaves an imprint. She is a good eater. Kindly inform me what I should do.—J. B., Sunset.

[Rub this lump with ammonia liniment twice a day.]

TUBERCULOSIS.

To the Editor: What was the trouble with my cow? She gradually got poor, had no cough, and seemed to have no pain, but died when about seven months along with her calf. I cut her open and found about 20 gallons of water in the womb and bladder. Her liver was about twice its normal size and full of water also.—C. P., Chico.

[This was tuberculosis.]

HEIFER WITH BAD TEATS.

To the Editor: I have a heifer that is due to freshen soon whose udder is quite large, but whose teats are loose and all four contain dark-blackish blood. She was on pasture till about a month ago, and is now fed alfalfa hay and beet pulp. What can I do for her?—W. F. S., Ripon.

[Give this heifer one dram potassium iodine three times a day dissolved in water.]

HORSE HAS SCOURS.

To the Editor: My mare has the scours badly after being driven. She is thin in flesh and dead on her feet. Am feeding the red oat hay with not much grain in it and two gallons of barley a day. Fed alfalfa hay for awhile, but no change. What can I do for her?—B. M. C., Yuba City.

[Give one quart raw linseed oil at a dose, then follow with three 30-grain tablets sulpho carbolates twice a day in feed.]

MAY BE TUBERCULOSIS.

To the Editor: I have three cows. Last spring they each got a lump pretty well back on their jaw. At first I thought it was a fox-tail, but they healed up nicely. Now one of them has it again. It breaks open and runs a little, and then breaks open again. Last spring they just broke open once. Could you tell me what it is, how to cure it, and how to prevent it?—L. S. Reedley.

[Have these animals tested for tuberculosis.]

HORSE WITH SCOURS.

To the Editor: I have a horse that had the scours real bad all last winter, although I gave him a number of things to stop it. I quit feeding him alfalfa and fed only barley straw and rolled barley, but that did not make any difference. Finally I turned him out on pasture, and he slowly got over it. When I took him up last fall I was very careful with alfalfa, but in spite of that he began to be troubled again, and has continued all winter. What can I do for him?—Subscriber, Fresno Co.

[This trouble is due to faulty digestion. Give the colt 2 ounces Epsom salts twice a day, but don't expect to get results quickly.]

TREATMENT FOR OLD MARE.

To the Editor: I have a mare about 20 years old that is very thin and is frequently affected with scours. I have had her teeth examined, but she still eats very slowly. She is fed oat hay and gets some green pasture, also rolled barley and bran once a week. She is worked very little and then only for riding. Can you suggest a treatment?—M. D. S., Napa.

[Give this horse six 30-grain tablets sulpho carbolates once a day in the feed.]

MULE'S BLOOD OUT OF ORDER

To the Editor: Last fall I turned my team of mules into a wild oat field, and in about a week one of them took sick and died. There was an irrigation ditch through the field, and there was some tar weed in the field. Had some other horses in the same field at the time that were not affected. Had another mule that had a large swelling on her breast last fall. The veterinarian took her into town and lanced it, and it healed up in about six weeks. In December I discovered an abscess on her throat which had broken. The mule eats and is getting fat. What is the trouble?—J. W. D., Marysville.

[This mule's blood is out of order, and it would be advisable to have her tested for glanders. If she does not react, put her on ounce doses of Fowler's solution of arsenic twice a day.]

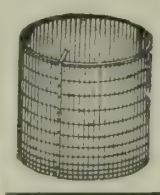
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"THE NAME GIBSON INSURES QUALITY."

White Scours and Bloat Cure.

[Written for Pacific Rural Press by E. E. Greenough, Merced.]

Here are two remedies that I have tried and know to be good. The first one is for white scours in calves. Simply pasteurize the milk thoroughly each time the calf is fed for a month or six weeks and he will never be troubled with scours.

If the calf already has scours, the milk should be boiled and thickened with a little barley flour, or blood meal with a few drops of turpentine added and feed lightly for some time. In fact I think most scours are caused by overfeeding. Four pounds of milk for an ordinary sized calf is plenty at a feed twice a day. I never feed three times, though I think that would be good.

I have used serum for scours and many other remedies, but I find the simplest method is the prevention by feeding pasteurized milk. I never bother to disinfect the navel, either, any more.

The remedy for bloat is so simple that I fear many will not try it. Give one-half or a pint of sweet cream as a drench and in about 15 minutes the gas will be gone. Of course in drenching a cow one must exercise care or some of the drench will get on the animals lungs and cause pneumonia.

I wish some one would devote their life work to contagious abortion. I have lost six calves out of ten this fall, the first I have ever lost. Have secured information from several Experimental Stations, but it don't help much. Have a letter from Dr. Wililams of New York and he says the disease came into my herd with the first cow and will stay till the last cow comes out; in other words, he says the disease is always present in a greater or lesser degree. The remedy he suggsts is the douching of the entire herd at least twice a week during pregnancy and 30 days before breeding, daily washing. Not very encouraging to say the least.

[Comments by Dr. B. B. Wintringham]

[There is no doubt that pasteurization of milk is one of the effective methods of prevention of scours. This may be done by simply turning a steam jet into the milk till it reaches a temperature of 170 or 180 degrees F. and cooling immeditaely to 100 degrees F. and then feeding. The above is efficacious as a preventive only. Painting the navel with tincture of iodine is good routine treatment, as a minor percentage of cases are caused from infection of the navel.

For bloat the most effective cure is to give four ounces each of aromatic spirits of ammonia and spirits of turpentine in a pint of water.

In regard to feeding calves the writer thoroughly believes in feeding small amounts, even four or five times a day, and not larger amounts less often.

Dr. Williams has devoted his life work to contagious abortion and there are many others doing the same today. It is only a matter of time till some effective treatment will be found.]

Balanced Ration for a Jersey.

To the Editor: Could you give me a good balanced ration to go with oat hay, as I will have no alfalfa hay until this summer? The cow is a pure-bred Island Jersey. This is her first calf and has never been fed any grain excepting these last few weeks. She has plenty of good green grasses to run on.—H. C. F., Lincoln.

[Answered by Professor F. W. Woll, University Farm, Davis.]

[Since oat hay has only a medium protein content, it will be necessary to feed the cow a grain ration containing a fair proportion of these components, although it is fair to assume that she will receive considerable protein in the green grass she is eating. Feeding stuffs high in protein are, as a general rule, our most expensive concentrates, like mill feed, linseed oil meal, cotton seed meal, etc. As alfalfa contains a good supply of these constituents it will not ordinarily pay to feed dairy cows high-protein concentrates, except in small amounts to heavy producers, for the sake of stimulating the appetite and maintaining a high milk production. In the case of the Jersey cow owned by the correspondent, I would recommend feeding, in addition to all the oat hay she will clean up, a pound of the following grain mixture for every five pounds of milk she produces: rolled barley and wheat shorts, 2 parts each, cocoanut meal and linseed meal or cottonseed meal, one part each, all by weight. This will make a very palatable grain feed, and with oat and green grass will insure a maximum production from the cow.]

A MAKESHIFT SMOKEHOUSE.

It is not necessary to build a real "house" to provide smokehouse facilities for home curing. A bottomless barrel may be made to serve the purpose.

Dig a little trench into a hillside, making a fire box a foot wide and 8 or 10 inches deep. Cover this with a piece of sheet iron, leaving a smoke hole at the upper end. Place the bottomless barrel over this smoke hole, chimney fashion, lay a stick across the top of the barrel to hang the meat on, put a cover on the barrel so as to keep rain out without cutting off the draft, get a piece of tin or sheet-iron to serve as a door to the furnace, and the smoke house is made.

MARE WITH ITCH.

To the Editor: Since having my mare "fired" for spavin she has developed an itch which causes her to rub herself nearly all the time. Can you tell me how to treat her for this? —J. D. N., Modesto.

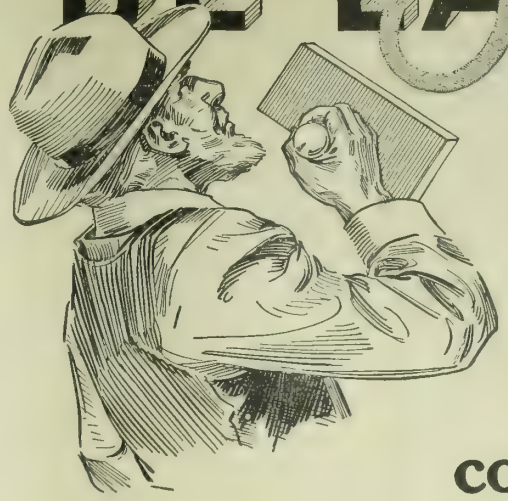
[Wash her all over with a one per cent solution liquor cresolis compositus and give her Fowler's Solution in one-half ounce doses, three times a day.]

AN ERROR.

In our issue of February 5, a heading to a query in this department read "Pigs Do Not Have Piles" which should have read "Pigs Do Have Piles."—Editors.

H. C. Hutton has leased a ranch near Paso Robles where he will start a dairy.

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MORE De Lavals are being sold than all other makes combined—nearly 2,000,000 are now in use. Year by year an ever increasing proportion of farm separator buyers reach the conclusion that the De Laval is the only cream separator they can afford to buy or use.

In fact, about the only excuse ever offered for buying any other separator nowadays is that its first cost is a little less than the De Lavals.

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Let us send descriptions and pictures, showing the Empire Milker and Empire Separator in use. We will also send you our offer on Empire Gasoline Engines and Empire Star Feed Mills.

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MICA AXLE GREASE

Poultry Questions Answered.

[By Geo. H. Croley, President Federated Poultry Association of California.]

TULES IN DUCK POND.

To the Editor: Are tules in a small pond objectionable to raising ducks thereon?—H. M. H., Parlier.

[Unless the tules are so thick as to interfere with the movements of the ducks or so extensive that there is danger of them becoming lost in the growth, the tules are an advantage for the reason that they furnish protection and shade from excessive sunshine. Many breeders fail to supply sufficient shade for their ducks and by this means greatly injure their breeding stock as well as young and growing fowls. This applies on both land and water. It might be stated here that a swimming pool is not necessary for breeding ducks, but when properly arranged it is something of an advantage; young ducks that are intended for breeding may be allowed to swim after they have grown their real feathers, while those intended for eating should never be allowed to get wet beyond their nostrils.]

PROPER PULLET FEED—HOGANIZING.

To the Editor: I am thinking of putting in a few hundred fowls as a side line on a 40-acre plot where they will have free range of alfalfa, a good supply of corn threshings to scratch in, and plenty of grit. Should this be sufficient, and do they need charcoal? Advise me as to suitable feed for White Leghorn pullets ten weeks old and up. I notice advertisements frequently mention "Hoganized" birds. Can you explain this term to me?—R. B. E. D., El Centro.

[If we correctly read between the lines of this inquiry, our correspondent is on the eve of making a mistake that many intending poultry keepers make when poultry is to be a side line. There is a vast difference just raising some poultry as a side line, which often fails, and including poultry culture as one of the real farm crops, which usually pays. When any of us figure on tacking a semi-addition onto a regular business, we just naturally begin to plan some system by which it will more or less "run out and take care of itself"; it is anticipated that it might at times have to be neglected because of the demands of the regular occupation. We feel certain that all experienced poultry raisers will agree with us that this inquirer will derive no profit from a flock of fowls unless more time and attention is awarded them than his letter seems to indicate they are to receive. We do not wish to discourage, but to start him properly—we need him in the business provided he succeeds. To make any real profit from fowls, either on a regular poutry ranch or as a side line, they must be properly—not necessarily expensively—housed, and many recent demonstrations prove that they will not pay a profit unless carefully and intelligently fed. It might be instructive to state here that if the hens are forced to make alfalfa a large part of their feed, the result will be "alfalfa eggs," which sell at several cents below the normal market price. If the "corn threshings" are mildewed or otherwise unsound, they will cause more damage than good. As a means of health insurance, keep a constant supply of grit, broken shell, charcoal, and ground bone before all fowls at all times. It costs but a trifle and saves great losses. Pullets at ten weeks of age require a variety of materials in the feed that promote growth. If one is not able to make up at home a proper mixture the commercial growing mash feeds and scratch feeds are now available nearly everywhere and are usually purchased ready mixed at little or no more than the ingredients cost when bought in small lots. In Jan. 29 issue we explained in detail the meaning of the term "Hoganizing," and stated that we could supply the book, "The Call of the Hen," that teaches this method of selecting breeding fowls.

POULTRY NEWS NOTES.

[By Geo. H. Croley.]

W. R. Thomas, of Petaluma, recently received six White Leghorn cockerels purchased from H. P. Blanchard of New York.

As an illustration of the possibility of the combination of Standard show qualities with high egg-producing capacity, and other utility merits, the report of the judges on the first prize White Leghorn pullet, at the Sacramento poultry show, is noteworthy. This bird scored 94 points in the Standard or fancy class, and by the Hogan test was rated as of 235-egg capacity. This pullet was bred and exhibited by the Mahajo Farm of Sacramento and it is the intention of the owner to reserve for future breeding only his best utility fowls from which finally those also possessing desirable Standard points will be selected the birds for the breeding pens.

We recently mentioned the incorporation of the Fontana Poultry Association. In response to our inquiry for further information, chairman of the Committee on Organization reports as follows: "The primary idea in forming the association was to build up the prosperity of the settlers who have already located about Fontana. A most thorough investigation

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Good Chicks should be fed right by the Coulson Method
Full particulars in free book Chickens from shell to market
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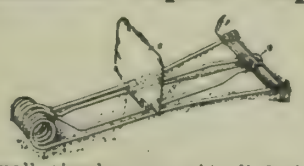
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Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film; absolutely without the use of thrust bearings or adjustment of any kind.
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Best Equipped Poultry Farm in California. Sanitary conditions perfect.
EGGS FOR HATCHING AND BABY CHICKS.
Breeding Pens now mated with large-sized, healthy matured breeding birds. All open-air housed, thus promoting strong sturdy chicks.
STANDARD-BRED SINGLE-COMB WHITE LEGHORNS.
Hatching Eggs, $1.50 per setting.....$5.00 per 100
Baby Chicks, February delivery ..... 12.00 " 100
" " March " ..... 10.50 " 100
" " April " ..... 10.00 " 100
WHITE PLYMOUTH ROCKS.
Hatching Eggs, $2.00 per setting.....$ 7.00 per 100
Baby Chicks, 20c each ..... 15.00 " 100
In the Utility Class at the P. P. I. E. Poultry Show our Leghorns received 4 awards, and on Eggs 1st and 2nd.
Our White Plymouth Rocks received 7 awards, and on Eggs 1st and 3rd.
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Small, simple, sure. At all dealers. If your dealer does not handle it, send 20 cents in stamps and mention your dealer's name and get sample by mail postage paid. Write for prices in larger quantities delivered free by parcel post.
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fertility of the soil in the groves. It is claimed that the actual fertilizer value from 100 hens is $20 per annum. M. A. Schofield of Gardena will design the poultry houses and appliances and he will devote several days each month to personal inspection of the various plants."

At the late Sacramento poultry show, S. J. Sims of Corte Madera exhibited six specimens of a variety of ducks which he has named the Marin Mallard. These are the result of crossing a wild California Mallard with the domesticated Pekin duck—in the past it has been considered that this could not be accomplished. That it required two years of intimate study of the habits of these fowls, to gain the present results, is evidence that it was a difficult undertaking. To gain this knowledge, in addition to a close observation by daylight, Mr. Sims fitted up joint sleeping quarters for himself and the fowls that he might note their nocturnal habits. The fowls on exhibition consisted of one drake of the first cross, three ducks of the first cross, and ducks of the second cross.

At the McHenry Poultry Yards in Modesto, there has just been installed a 4000-egg capacity incubator; and a new, very modern poultry house, nearing completion, will accommodate 3000 fowls.

Farm Poultry for Profit.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

TURKEYS ON THE FARM.

There may be more ideal places to raise turkeys than the hills of California, but if so I never saw them.

To my mind a few acres of hill land covered with live oak and other native brush is a gold mine, providing the neighbors are not too close, for turkeys will ramble, and their rambles usually lead them to a neighbor's place if there is one within a mile or so.

Fences are useful in holding them on one's own premises, if one wing is cut, but this has a drawback, in so far that it leaves the turks at the mercy of animals that like turkey for dinner.

But whether hill or valley land is used, if we succeed with the turkeys we need range, as the birds do not thrive well in confinement.

Hatching.—If you are going to hatch the eggs under hens or under the turkey hens themselves, fairly good results may be had with one-year-old hens and an older male, but for incubator hatching you will need two-year-old, strong turkey hens and a young vigorous tom.

If they have been raised on the premises they should be laying ere this and the only reminder you will need is to be quite sure you have the hens free from lice, as this is the first real menace to turkey poults. Dust the hen thoroughly, when you set her, then again in ten days and again before the hatch comes off. It is also a good plan to put a gunny-sack, folded in the nest, well sprinkled with coal oil. This is to prevent mites from attacking the hen during her term of incubation.

After sprinkling the sack, put a layer of straw or hay over it and put in a decoy egg as an inducement for the turk. She may decide to have none of your nest and make her own, but even so, you can make the same rule with her own nest, but try to leave it looking as much like she left it as possible, then she will stay with it.

Don't be too fussy. Leave the hens as much to themselves as is consistent with cleanliness, but don't stop short of that if you want to raise what you hatch.

Using Incubator.—If the eggs are to be incubated, start the machine at 102 and keep it there till the last week. Give the eggs plenty of time to air, always remembering that a turkey egg is thick through and it takes longer to cool through than hen eggs do.

During the last week supply what moisture is needed, the weather is your judge of that, so work accordingly.

ADVICE TO BUYERS OF POULTRY.

To the Editor: Kindly tell me where I may get 100 White Leghorn baby chicks, not fancy, but pure and well bred up for laying purposes; and two settings of turkey eggs from strong hardy stock—not from extra fine turkeys. Please let me hear right away if I can order these through you, and the price.—Subscriber, Danville.

[In the letter sent by the publisher, in reply to the above, we suggested that it include the following statements: "If you will write to our advertisers and state to them just what you want we think you will get satisfactory prices and good stock. It is usually best to trade with those nearest to you. Turkey eggs that are very cheap are likely to be from rundown, inbred stock that are dear as a gift. In writing to advertisers state clearly what you want to buy; and it often results to the inquirer's benefit to frankly mention what price or about what price he expects to pay." This last statement is not likely to receive the endorsement of the majority of intending buyers, but we can say with confidence that in many cases—almost without exception—a breeder will go out of his way to serve a prospective customer who follows this course and often send fowls or eggs worth more than he should supply and be just to himself. It is a safe plan—try it. In rare instances one may get stung with a little extra sting by being so frank. There are always a few sharpers getting into poultry, but not as many as in other lines, and they do not last long at their game under present conditions. The poultry associations now make short work of them.]

Carl Robertson, the tester for the Gridley Cow Testing association, reports for the month ending January 31, that the organization took in five new members and tested about 700 cows.

Poultry Breeders Directory

GET YOUR DAY-OLD CHIX FROM ACTUAL PRODUCERS, who know what they have and who can stand back of their chicks. We are utility poultry raisers and our White Leghorn chicks this year are from pen of 635 that averaged 171.2 eggs each last year. Our Rhode Island Reds are also heavy winter producers. Owing to superior transportation facilities in Sacramento, quick delivery is assured. White Leghorn chicks, $12.50 per 100; Rhode Island Reds, $15 per 100. Book at once. Brooke Farm, 807 J St., Sacramento.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

WE OFFER 10,000 R. I. RED CHICKS during Feb'y at $12.50 per 100. Lots of 1000 or more at $12. Also 4500 Barred Rock chicks at same price. 8000 White Leghorn chicks at $10 per 100, or $90 per 1000. All of these are pure-bred high-class stock. These prices are special to secure early orders. Write us your wants today. Free 65-page catalog. Pioneer Hatchery Co., 620 S. Spring St., Los Angeles, Cal.

BABY CHICKS—All sturdy youngsters from good stock and hatched right. Rhode Island Reds. Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

BABY CHICKS THAT PAY—Rhode Island Reds the best breed for the small ranch, when you consider their size, early maturity and winter laying qualities—the kind that pays to hatch early. We have them (any quantity) from A1 laying stock, hatched right; and know how to ship them for safe delivery. Write us for prices and circular—it will interest you. Roofden Poultry Ranch, Campbell, Cal.

WELL HATCHED AND STRONG day-old chicks from healthy vigorous breeders. White and Brown Leghorns per 100 February, $11, March $10, April $9. Reduction in quantities. Let us send you our announcement. San Jose Hatchery, 373 Meridian Road, San Jose, Cal. Chicks well hatched are half-raised.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired Heavy Winter Layers. W. C. Smith, Prop., Corning, Cal.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. Lay most when prices highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for heavy laying. Eggs, chicks, stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

WHITE PLUMAGE POULTRY FARM and Hatchery. Sells day-old chicks from healthy, vigorous breeders. White Leghorns at $10 per 100, $90 per 1000. Barred Rocks and Rhode Island Reds at $15 per 100. We sell the Victor Incubator and Brooder. Circulars free. H. A. Schlotthauer, Exeter, Cal.

ALL KINDS OF BREEDING and laying hens, roosters and pullets. Petaluma incubators, new annd used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minorcas, Buff, White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards. 2550 San Pablo Ave., Oakland, Cal. Closed Sundays.

THE SANTA CLARA VALLEY HATCHERY can supply you with many different varieties of chicks. We stand by the chick and the chick speaks for us. Have four second-hand Jubilee Incubators for sale, 500 egg capacity. 500 growing White Leghorn chicks for sale now. Jos. A. Bihn, San Jose, Cal., Route 6.

540 EGG "PIONEER INCUBATOR"—$45 freight prepaid, or $46 on terms of $15 down, and balance in three payments of 30, 60 and 90 days. We ship for your approval before you pay a cent. Free, 32-page catalog. Write today. Pioneer Hatchery, 620 S. Spring, Los Angeles, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Yodden, Box 396, Los Gatos, Cal.

WHITE PLYMOUTH ROCKS—If you are interested in high class stock, and want to buy as good as there are anywhere, write Mahajo Farm, P. O. Box 597, Sacramento, Cal., for catalogue Chicks. Eggs or Breeding Stock. Awarded all first prizes at California State Show, 1916.

BUFF ORPINGTONS, BUFF LEGHORNS, BOURBON RED TURKEYS, BUFF DUCKS—Winners at Riverside, Pasadena, Los Angeles and San Francisco. Breeding stock. Hatching eggs. Baby stock. Free illustrated booklet. The Ferris Ranch, R. 2, 144D, Pomona, Cal.

WHITE AND BROWN LEGHORNS—If you want the best and are really interested in the highest class of stock write Mahajo Farm, P. O. Box 597, Sacramento, Cal., for catalogue. Chicks, Eggs, Breeding Stock. Awarded all first prizes at California State Show, 1916.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon geting same from your dealer. Manufactured by GEO. H. CROLEY CO., INC., Poultry Supplies, San Francisco.

WHITE LEGHORNS—RHODE ISLAND REDS—Trapnested and Hoganized. Breeding from not less than 200 egg birds. Booking orders now. Hatching Jan. 25th-June. Monta Vista Poultry Farm, Z. W. Wright & Son, Ontario, Cal.

CHICKS HATCHED RIGHT in finest hatchery in the the world from our famous heavy layers. Rhode Island Reds—White Leghorns—settings—100's, 1,000's. Best strains, reasonable price. Pebbleside Poultry Farm, Sunnyvale, Cal.

BABY CHICKS — White Leghorns, Black Minorcas. We guarantee safe arrival and full count. Strong, vigorous chicks. 1916 catalogue contains instructions on care of baby chicks. Free. Lasher's Hatchery, Petaluma, Cal.

WHITE LEGHORNS—Hoganized. Bred to lay. Booking orders now for hatching eggs. $6 per 100, $50 per 1000. No chix. R. H. Dickinson, Los Gatos, Cal.

WHITE AND BROWN Leghorn Chicks, $10.00. White Leghorn cockerels. Silver Campine cockerels. Buff Leghorn hens. James D. Yates, Poultry Judge, Modesto, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorca, White Leghorn stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

SILVER SPANGLED HAMBURG—White and Silver-Laced Wyandotte cockerels and eggs; Silver-laced Wyandotte hens. Tribble Nurseries, Elk Grove, Cal.

S. C. W. LEGHORN EGGS for hatching from selected, strong and vigorous hens. All 200 egg type. 15, $1.50; 100, $6. Jay Maxwell, Madera, Cal.

WHITE ORPINGTONS AND BUTTERCUPS—Hoganized and Tested—220 egg strain breeders. Chicks and eggs for sale. M. S. Woodhams, San Mateo, Cal.

BABY CHICKS from Hoganized Single-Comb White Leghorns, 4th and 5th awards at P. P. I. E. for 280 egg type. Tupman Poultry Farm, Ceres.

FOR SALE—Barred Rock eggs from fine large prize strain. Extra fine layers. $1.50 per 15; $7.50 per 100. Miss F. W. Buckley, R. F. D., Box 71, West Berkeley.

BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trap-nested stock. Fairmead Poultry Farm, Fairmead, Cal.

HERE IT IS—White Rock baby chicks. $15 per 100. Hatching eggs, $1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ceres, Cal.

ORPINGTONS: BUFF AND WHITE—Black Minorcas and Carneaux pigeons. Cockerels ready for service. Susan Swaysgood, R. 2, Pomona, Cal.

WHITE WYANDOTTES—Blue ribbon winners. Cockerels, Pens, Eggs. Runner Ducks, $1 each. R. W. Stawetski, Route 2, San Jose, Cal.

EVERYTHING IN THE BARRED ROCK LINE except poor ones. Write for prices and prize-winning list. Barred Rock Schmitt, R. 1, Visalia.

EAST SACRAMENTO HATCHERY—Capacity 16,000. Special low price for large lots of chicks. Box 1205, M St. Road. Sacramento, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and cockerels. B. C. Quessenberry, R 4, Lodi, Cal.

SPECIAL—Barred Rock and Rhode Island Red chicks, $12.50 per 100. Safe arrival guaranteed. G. L. Hawley, Madera, Cal.

TAYLOR'S RHODE ISLAND REDS—First pen San Jose, first pen Sacramento. Eggs and chicks. 4001 York Ave., Sacramento.

TRAPNESTED LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

RHODE ISLAND RED BABY CHICKS and Eggs. Heavy laying strain. Send for circular. Rosedale Ranch, R. 1, Hayward, Cal.

TRAPNESTED LEGHORNS—White and Buff Stock. Eggs, chickens. Arthur R. Schroeder, Box 179R, Mountain View, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

S. C. RHODE ISLAND REDS—Hatching eggs, Baby chicks and cockerels. Mrs. V. P. Hewitt, Dixon, Cal.

BUFF ORPINGTONS—Eggs, $3, $2. Runner Ducks, $1.50. Glendale, Fleimng Ave., San Jose, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

BUFF WYANDOTTE EGGS—$1.50 and $2 per setting. C. B. Christiansen, Dinuba, Cal.

BLACK MINORCA COCKERELS—Eggs, Trios. Reasonable. Chester Fosgate, Campbell, Cal.

HARES AND RABBITS.

LEADING RABBITRY IN AMERICA—Flemish Giants and New Zealands. Cut your living expenses. Catalogue free. Empire Rabbitry, Empire, Cal.

BELGIAN HARES—Young stock for sale. Hurd Bros., St. Helena, Cal.

TURKEYS, DUCKS AND GEESE.

MAMMOTH BRONZE TURKEYS—THE BEST IN THE WEST—Extra special prices. Further information cheerfully given. Write now to secure best birds. Geo. A. Smith, Corcoran, Cal.

WANTED FOR COMMERCIAL HATCHERY—Bronze Turkey eggs, Pekin duck eggs and goose eggs. No fancy prices. Address Stag's Leap Ranch, Yountville, Cal.

HART'S BRONZE TURKEYS—Vigorous young stock. Eggs by the setting or incubator lots. Circulars free. Albert M. Hart, Clements, Cal.

FOR SALE—One pen of China Pheasants, one male and five females. L. R. McCoy, R. I. Box 205, Stockton, Cal.

PHEASANTS—Golden and Ringneck. Eggs from April on. T. D. Morris, Agua Caliente, Cal.

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The Home Circle Page of the Pacific Rural Press

MRS. BEST'S BULLETIN

My Dear Friends: In my weekly romps among the "shops" (no one who pretends to be ultra-knowing ever speaks of them as stores, but privately the only difference I see between a "shop" and a store is that a store doesn't waste a great deal of money on Circassian walnut fixtures) in my weekly romp among the shops I find that the box coat isn't to be sneezed at. 'Twill be worn very much with suits. Some figures look bewitching in that kind of coat.

The new styles are bringing out more inquisitive lookers every day. And the husband of a friend of mine who has been ill told me that his wife is convalescent. The way he found out is that she asked what hats are going to be like and whether the windows were showing the really new ones.

I understand that turbans of tiny white feathers have returned to fashion. I've seen some white hats trimmed with kid flowers.

But I didn't look so much at modes this week as at odds and ends. Saw bargains in satteen-covered, prettily figured and quilted comforts at $2.50.

Tin pastry tubes or rather syringes—for filling cream puffs, making borders of mashed potatoes, etc.—I saw at 50 and 75 cents; a really handy kitchen utensil for those who go to any "fixing."

The first one I ever saw was a cane top library table in weathered oak. The cane was in four panels. It was $81.50. I should say that such a table would be easy to dust but difficult to lay your loose pearls upon.

Baby has to be in fashion nowadays too. New patterns in baby goods are shown. One is rather fascinated at a nicely embroidered baby coat at $1.50. A bath set in cream enamel was decorated with buds in pen painting had everything a baby that doesn't mind a bath could desire. The price depends upon the amount of accessories. A cariole at $10.50 could serve for cot and playground for a small and not too athletic baby.

They have imported a stationery in bond linen, the envelopes being lined with wall-papery, or at any rate very eccentric, opaque paper. The specimens vary immensely in the pattern of paper and the shapes.

Many of the new gowns are decorated with a bar of silver or gold lace, or lace in metallic colors in conspicuous designs. The taste is cleverly displayed by using just the right amount of this trimming.

And as I have used just the right amount of space to the taste of the editor, I had better stop before he gets to trimming. So I'll remain, as ever, devotedly, **Rosabella Best.**

(Note—Readers wishing information from Mrs Best, care of the Rural Press, will receive a reply if they enclose a stamped addressed envelope.)

SALAD COMBINATIONS.

Candied cherries, pineapple, bananas.

Celery, sweatbreads, olives, pineapple.

Chopper green peppers, celery, pineapple, pimentoes.

Oranges, bananas, white grapes, chopped almonds.

MY LITTLE BOY'S DRUM.

By Fred Schaefer.



My little boy has a red, red drum,
And his red cheeks the redder come
As he raps it and taps it with his might
Up in the morning early and bright,
Like a Continental band.
His thoughts are alive and his hands aren't still,
He imagines he's drumming at Bunker Hill;
He thumps the hide with his two sticks
And his heart it sings like 'Seventy-Six
And Freedom in the Land.

Breakfast can wait, with its codfish balls,
Heroes don't hunger while Liberty calls,
They scorn to halt if the drum's
So let the foe and the biscuits shoot—
With duty to be done.
The martial thoughts of long ago,
The red, red drum, and the cheeks aglow,
Of my little boy go leading where
The army crosses the Delaware,
With him—and Washington!

CAKE BAKING HINTS.

Too often cakes are ruined in the baking. After the batter is properly mixed an important step in the process of cake baking remains. If the oven is too hot the cake will have no chance to rise.

A good rule in baking cake is never to let the oven be hotter than you can hold your hand in. The heat should be such that it permits it to rise before it hardens by baking. If the oven is too hot, the cake not only will harden too quickly but may burn before it is baked. With the oven at a heat as suggested an ordinary cake will require about 45 minutes to bake.

If cakes burn on the sides and bottom, the bottom of the oven is too hot. This can most often be remedied by slipping an inverted pie pan under the cake pan. This does not make the bottom of the oven less hot, but it provides a thin cushion of air under the cake pan that modifies the heat.

THE WEEK'S BEST HELP.

To wash windows or glassware, put a teaspoonful of ammonia in the wash water and see them shine. It gives the cleaned surface a particularly brilliant lustre.

A FLOWER POT COOLER.

A home-made refrigerator that will take care of a pound or two of butter efficiently may be made of a flower pot. Select a large one and set it over a plate containing the article to be kept cool, and swathe the pot in a wet cloth. The evaporation of the water from the cloth keeps down the temperature inside the pot.

EXPERIENCE EXCHANGE.

One of the Home Circle friends just from the East says that a New England firm, catering to the passion for embroidering and fancy work, is putting out dimity bedspreads stamped with any appropriate design. The design, say of a basket of flowers, is worked up by buttonholing pieces of fine chambray to the sections of the design.

Replying to Miss H. D. C., Bakersfield: Waldorf salad is probably the most popular American salad. It is made of apples, celery and nuts, equal parts of finely cut apples and celery. Nut meats, usually walnuts, are added to taste, not very finely cut. It may be served with mayonnaise or cooked dressing.

Who has a copy of those verses: "The Gypsy's Warning," an old favorite?

CLEVER IDEAS.

After the stems of poinsettias are cut, searing the end with a hot iron prevents the loss of the milky juice and prevents the flowers wilting. It is in this way that poinsettias are prepared for shipment.

For the baby in the go-cart a length of eiderdown 20 inches wide and 60 inches long laid in the cart and folded up over baby's feet will keep the little one warm. Hooks and eyes may be sewed on the sides to keep it fastened snugly.

Some of the most popular woman's garden clubs hold seasonable flower shows. Some such clubs also conduct semi-annual flower exchanges at which members barter or give away plants.

SALMON SALAD.

(This Week's Preferred Recipe.)

Heat one can of salmon in boiling water until it is thoroughly warmed; open can, pour off the oil and put salmon into a deep bowl; break it up and add a tablespoonful of hot vinegar. (This is so that the vinegar will permeate the flesh.) Now take one egg, level teasp. ground mustard, ½ teasp. pepper, one teasp. sugar, small lump of butter (about ½ oz.), and warm them together to thicken into a sort of dressing. When cool add 5 tablesp. of cream, and mix all with the salmon.

1916 VALENTINES.

As an institution, Valentine Day, February 14, seems to hold on well in spite of the proneness of people to become tired of anything. However, high-water mark in the craze appears to have been passed some years ago.

This year there seems to be a striving among manufacturers for keeping up interest with more departures from the old styles of greeting designs. The celluloid and fringe affairs that looked so much like confections are quite absent, while there seems to be an effort toward more wholesome devices.

The tendency is more toward cards. The wording is not so extravagant as formerly, either. A simple line or two seems favored, such as "With Love," "A Message of Affection," and so forth. Of course the heart motif is generally adhered to in the decorations.

A novelty is an embossed lithographed design in cut-out form embellished with puffed tissue paper effects of considerable ingenuity, such as forming the skirts of a girl, or the foliage of a palm tree, or a heart. The result, though, is quite tawdry.

A neat thing is a little booklet with illuminated cover and the inscription: "A Directory of People Who Love You." Inside the pages are all blank, the joke being that no one loves you.

There are some specimens of the comic valentine reappearing.

They can be dismissed with the one word, Horrible!

TREES FOR THE HOME.

By Sunbonnet Sue.

I like the house with trees.

What is more a blessing to the eye than a white home peeping forth from a garland of green trees?

Trees grouped about the home speak of contentment, stability, devotion and peace.

There is a comradeship between a house and the trees that are by it; the comradeship is like that between man and a mastiff; the trees stand on guard full of respect and affection.

There is a beauty in trees hugging close to a homestead; theirs is the symmetry of nature contrasted with that of human ingenuity. At the same time they soften the prim lines of the building.

Strange as it is to say so, the trees about a house are what give it the last, the convincing touch of the human.

An abode without the friendship of a single tree looks ghastly.

When I see a rich plain dotted with farmhouses, the gaze turns gratefully to those with a frame of sweet foliage. But the raw, bare house without the sign of a leaf about it sickens the soul of a beholder with hopelessness.

Give me the home with trees about it and warm hearts within.

But him who lives on the plain and scorns the majestic comradeship of a tree he could plant, him I would condemn to the paved city with its narrow, sterile streets.

Berkeley, Cal.

COUNTERWEIGHTS.

Rhoda Barrett, staring out of Miss Betty's window, spoke suddenly after a long silence:

"How one-sided Mary Frey is growing! Don't you see it? Seems to me there's something the matter with almost everyone. Sometimes I get so I hate to watch people."

Miss Betty peered out over her knitting—not that she needed to see Mary Frey, but because it gave her another moment for thinking. Rhoda Barrett's strong young back was straight and supple as a sapling, but there were hard and bitter lines in her face. They had been troubling Miss Betty for two years.

"Life just traps you!" Rhoda said fiercely. "It isn't fair. Look at Mary Frey! She used to be pretty. It's the hard times she's had taking care of that cranky old aunt and doing that endless washing to keep soul and body together."

"And carrying her bundles always on her left side," Miss Betty said musingly. "I spoke to her about it years ago, but she thought it was nonsense. And now she thinks it is nonsense to try to correct it. But I notice she's mighty careful about that Emmeline Murtland that she's got working for her. She told me once that she makes her stop and rest and carry her bundles different ways. Mary Frey takes care of other folks if she doesn't of herself. I expect that's what has kept her soul's spine straight if her body isn't."

"What in the world do you mean, Miss Betty?" Rhoda asked.

Miss Betty laughed, and picked up her knitting again.

"It does sound ridiculous, doesn't it?" she returned. "I was thinking of the way we carry burdens on our hearts and minds. There are folks, you know, that carry them so they are always rubbing in the same spot till it gets so sore or they get so bent that it's almost hopeless to try to help. And there are other folks that have a knack of shifting the load and resting between, or mebbe taking exercise to correct things. And they keep straight and strong—like Delia Fairlane."

"There are some things that can't be shifted," Rhoda returned shortly.

"Delia Fairlane," Miss Betty mused, "seems to do it by a system of counterweights, as far as I can make out. For every new burden of her own she takes a new one that belongs to some one else on her heart. She says they all help her to understand other folks, and even if her hands are tied up, her thoughts don't need to be. So she's keeps her mind balanced. You couldn't possibly be sorry for Delia, because she never seems to have time to be sorry for herself."

And this time Rhoda said nothing. —Youth's Companion.

LUTHER'S CREDULITY.

"I told Luther Woggle, the other day," grinned a citizen of Petunia, "that old, old story about a feller who was in a rubber boot factory when the building was burning. He put on the smallest pair of rubber-boots he could get into, and then a bigger pair, and so forth, until he had nine pairs on, and then jumped out of the sixth story window into the street, where he bounced up and down until his friends had to shoot him to keep him from starving to death. I told that yarn to Luther and he actually believed it. But, then, Luther believes that an army of a million American farmers with pitchforks could whip any sized host of foreign invaders, and a man who believes that will believe anything." —Kansas City Star.

THE MAN IN THE MOON.

One Sunday morning an old man went to a forest and cut a faggot of firewood and put it on his shoulder and began to trudge home. But an angel came and said to him:

"Do you know this is Sunday on earth, when all men rest from labor?"

"Sunday on earth or Monday in heaven," said the old man, "it's all the same to me."

"Then," said the angel, "as you do not keep Sunday on earth, you shall live in a Moon-day in heaven, and there you shall carry your faggot until the day of judgment."

And the old man rose up to the moon and there, on a clear night, you can still see a great shadow, as of a man with a faggot on his shoulder. It is said that:

The man in the moon
Came down too soon,
And asked his way to Norwich.

But there was no news of his ever arriving at that great and famous city.—"Legends of Town and Country."

A Definition.—"Pa, what is affection?"

"Affection, my boy, is carrying three extra tires on an automobile that never gets more than four blocks away from a garage."—Detroit Free Press.

"I Told You So's" Rival.—Whenever we hear a man start a prophecy with "mark my words," we know instinctively that we are in for something unpleasant.—Philadelphia Inquirer.

Making it Clear.—After a man marries and settles down all he has to do for the rest of his life is to settle up.—Boston Transcript.

That for a sprained ankle, holding the foot in water as hot as you can bear it is the best relief?



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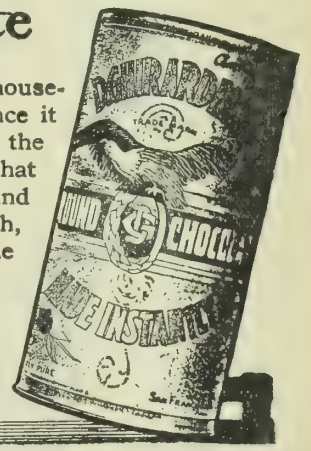
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Now is the time to sow California Poppy seed. Special offer for one week only: upon receipt of 25c I will mail you my regular 50c collection of California poppies, consisting of 9 distinct varieties in separate packets.

THEODORE PAYNE,
345 S. Main St., Los Angeles.

The Markets.

Unless otherwise noted, prices quoted are f. o. b. San Francisco.

San Francisco, Feb, 9, 1916.

WHEAT.

The Eastern market continues strong on export buying, and supplies on the Coast are pretty firmly held, but the local demand is light, and there is hardly as much strength in this market as last week.

Cal. Club, ctl.	$1.80 @1.85
Northern Bluestem.	1.97½ @2.02½
Northern Club	1.85 @1.87½
Northern Red	1.85 @2.05

BARLEY.

Values show no quotable change, but there has been a little reaction from last week's advance, notwithstanding a lively shipping movement East. The local demand has been less active,, but most offerings are steadily held.

Shipping, ctl.	$1.40 @1.45
Choice Feed, ctl.	1.37½ @1.40

OATS.

White feed oats have eased off a little from the recent advance, as supplies are coming in more freely. In view of the demand for shipment, however, the situation seems to be strong.

Red Feed	$1.35 @1.37½
Red Seed	1.45 @1.65
White	1.50 @1.55

CORN.

No change is noted since last week. Eastern corn is steady, with about the usual routine business, while the sorghum grains are in good demand for feeding.

Eastern yellow, ctl.	$1.80 @1.85
Milo Maize	1.40 @1.45
Kaffir	1.65 @1.70
Egyptian	1.50 @1.55

BEANS.

Business continues quiet. Supplies of all varieties are by no means heavy for this time of year; in fact, some varieties are quite scarce; but with no urgent demand at present in any quarter, occasional efforts to sell cause an easing of prices, and slight declines are noted on blackeyes and small whites. Offerings in the country now consist quite largely of very small lots, which it does not pay local wholesalers to handle. Such lots would hardly bring full quotations in the city, and can better be disposed of in the neighborhood where grown, unless enough can be collected to make a carload of similar grade and variety.

(On wharf, San Francisco.)

Bayos, per ctl.	$4.90 @5.00
Blackeyes	3.50 @3.60
Cranberry Beans	4.75 @4.85
Horse Beans	3.25 @3.50
Small Whites (south)	5.70 @5.80
Large Whites	5.75 @5.90
Pinks	4.30 @4.40
Limas (south)	4.50 @4.60
Red Kidney	6.50 @6.75
Mexican Reds	4.50 @4.65
Tepary Beans	4.00

SEEDS.

General garden seeds are now moving in good shape, but the lines quoted, except for alfalfa, are rather quiet, values showing little change.

Alfalfa, per lb.	19 @20 c
Melilous Alba	30 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	4¼ @ 4½c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Sudan Grass	40 c

HAY.

The results of last week's storms in the south, with continued storms in Oregon, Washington and Nevada, have caused a heavy demand for hay all over the Coast, as cattle everywhere have to be fed, and this market has the only large supply ready for shipment. Orders have accordingly been piling in all week, and as a result prices have advanced. Outbound shipments both from here and from country shipping points have been very heavy both by rail and sea. The heavy reduction in stocks is expected to result in further advances. Alfalfa is closely cleaned up and firm.

No. 1 Wheat	$13.00 @15.00
No. 2	11.00 @13.00
Tame Oats	11.00 @16.50
Wild Oats	12.00 @14.00
Alfalfa	13.00 @16.50
Stock Hay	10.00 @12.00
Straw, per bale	.25 @ .40

FEEDSTUFFS.

Bad weather all over the West has tended to keep the demand for feed quite active, and practically all lines are moving well. The only change in price this week is a slight advance in bran.

(Wholesale prices per ton,. carload lots, San Francisco.)

Beet Pulp, per ton	$22.50 @23.00
Alfalfa Meal, per ton.	20.00 @21.00
Alfalfa Molasses Meal per ton	21.00 @22.00
Bran, per ton	26.50 @27.50
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00 @25.00
Cracked Corn	39.50 @40.50
Middlings	33.00 @34.00
Rolled Barley	29.00 @30.00
Tankage	45.00
Rolled Oats	29.50 @31.00

VEGETABLES.

Conditions show little change, adverse weather conditions greatly curtailing the supply of desirable stock, while now even ordinary offerings are not over-plentiful. The poor stuff, however, moves slowly, and prices accordingly still show a very wide range. Cabbage is higher, while cauliflower will hardly bring the old top price. Rhubarb does very well, and is in fair supply. Sprouts are higher. String beans are out of the market, and hardly any good peas are seen. Cuba and Florida eggplant is higher, and southern peppers and tomatoes are firm. Artichokes are higher, and celery is held at extreme prices, while ordinary offerings of lettuce are easy.

Cabbage, ctl.	50 @60 c
Cauliflower, doz.	50 @75 c
Sprouts, lb	5½ @6½c
Rhubarb, box	1.25 @2.00
Peas, southern, lb.	10 @12 c
Peppers, bell, lb.	15 @25 c
Tomatoes, L. A., crate	1.75 @2.50
Eggplant, lb	20 @25 c
Celery, crate	3.00 @4.50
Artichokes doz.	.75 @1.00
Lettuce, small, crate	1.00 @1.50

POTATOES AND ONIONS.

The feature in this weeks' offerings is a lot of Bermuda type onions from the River district, which sell readily as quoted. Sweet potatoes are scarce and have advanced sharply. Oregon and Salinas potatoes are also a little higher.

(On Wharf.)

Oregon Burbanks	$1.60 @2.00
Salinas Burbanks	2.00 @2.15
Delta Burbanks	$1.10 @1.65
Sweet Potatoes, ctl.	2.25 @2.50
Onions, Delta, ctl.	1.85 @2.25
Oregon	2.00 @2.50
River Bermudas, crate	2.00 @2.15
Garlic, per lb.	10 @12½c

POULTRY.

The market has picked up well in the last few days. There is plenty of stock coming in, but there is a much more active demand, especially for local stock. Dressed turkeys are doing a little better, and both large and small broilers have advanced sharply. Young roosters and fryers also have been marked up a little.

Turkeys, dressed	27 @28c
Live Turkeys, lb.	22 @23c
Broilers, 15 lbs. to doz. and less, lb.	35 @38c
do, over 15 lbs. to doz.	25 @30c
Fryers	24 @26c
Hens, extra, per lb.	17 @19c
Small	17 @18c
Smooth Young Roosters, per lb.	20 @21c
Squabs, per doz.	2.00 @4.00
Geese, per pair	2.25 @3.00
Ducks, young, lb.	18 @19c
Old	14 @15c
Belgian Hares	9 @11c

BUTTER.

Very little change was recorded most of the week. At the moment, however, a rather close cleanup of offerings has sent extras up a little, and prices are considerably higher than a year ago.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30½	30	30½	30½	30½	32
Prime Firsts	28½	28½	29	29½	29½	29½
Firsts	27	27	28	28	28	28

EGGS.

Prices went up sharply at the end of last week, as the stormy conditions at other Coast markets diverted shipments elsewhere, and delay in the arrival of Eastern stock also shut off the supply of cheap Eastern stock. Many small producers in nearby districts were also shut off from the market, and are now sending in large quantities. The Eastern shipments also are arriving, and prices have dropped sharply since the first of the week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	35	37	39	32½	33	29½
Sel Pullets	33½	35½	37	31½	32	27½

CHEESE.

Expected offerings of Monterey cheese have not shown up, and the price is rather high. Flats are easier with a ½c. drop.

Y. A.'s, fancy	17½c
Fancy Calif. flats, per lb.	16½c
Monterey Cheese	18 @19c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	32	32	33	33	33	33
Eggs	30	30	37	37	30	30

DECIDUOUS FRUITS

Values show no quotable change. The demand for apples, however, has been considerably better locally for the last few days, and a good many substantial shipping orders are also reported from outside points.

Pearmain	.65 @1.00
Greening	.65 @1.00
Baldwin	.75 @1.25
Oregon Spitzenbergs	1.50 @2.50
Jonathan	1.25 @1.75

DRIED FRUITS.

The spring buying movement in dried fruits has not yet appeared to any great extent here, and it does not look as if there would be any very heavy movement this spring, as the supply remaining in the country is light. Many of the individual offerings, also, are small, and unless of particularly desirable quality are of less interest to buyers than larger lots, and accordingly hard to sell at their real value. In the absence of important business, prices have again been reduced a little. Apples show a further decline, as there are several holdings left and a little pressure to sell has developed . Apricots are extremely firm. Figs are quoted lower, but are really nominal, as there is next to nothing of marketable quality left in the state; and the movement of odd lots of uncertain quality probably accounts for the drop, rather than any real weakness in the market. Prunes are rather quiet, and packers show no disposition to buy at present; but the situation should afford no uneasiness to growers, as stocks are light and a large part of the season's requirements still unprovided for. Peaches continue easy for spot offerings, as a good many small holders are anxious to sell, and there is not enough outside demand to absorb the stock. The New York Journal of Commerce says: "Future Coast prunes are irregular, though with a slightly firmer undertone. Buying on the part of the New York trade is confined to very small quantities, and is mostly confirmed at low prices. The irregular tendency is attributed by New York brokers to the appearance of small Coast holders in the market, who were anxious to sell their light supplies and shaded prices to attract purchasers. The larger holders maintain a very firm tendency and show no inclination to meet the quotations made by the less important operators."

Apples	6 @6½c
Apricots, per lb.	9 @12 c
Figs, white	4 @4½c
Black	2 @2½c
Calimyrna	6 @7 c
Prunes, 4-size basis	5 @5½c
Peaches	4 @4½c
Pears	4 @7 c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6¾c
London Layers, 3-crown, 20-lb. box	1.25
Imperial Clusters, 6-crown, 20-lb. box	2.50



Special Live Stock Market Report.

The cattle market shows considerable improvement from a price standpoint as there is some let-up in the hay situation and nobody is trying to force more on killers than they can handle with ease. Packers are not killing so freely as they have for the past month, and while it seems probable that there will be plenty of cattle to go round till the grass cattle begin coming in, a raise in price is looked for. Cows are getting scarce and it is almost impossible to buy them. Feeders in Nevada have had a hard winter, nobody doing better than an even break the past month. There is very little change in the eastern markets, prices not being very high.

The local mutton situation remains unchanged, so far as supply is concerned. Most of the receipts in this trade are lambs, sheep being exceptionally scarce. The shortage of wethers is attributable to the extensive lamb marketing which has been going on in the country and the trend of the times seems to continue in that direction.

Hog receipts continue light and as a result a general marking up of prices has been made on all classifications. Buyers in the country are finding it difficult to get deliveries on account of the unfavorable weather. The strengthening market seems to have restored confidence to a marked degree.

Packers still quote a half cent premium for 175 to 250 pounders, and at this price farmers can afford to cater to their requirements. Killers of block hogs are not so anxious for these heavyweights and as a result are considerably under our quotation. This disposition to pay for quality should be encouraged by the farmer, as this is a step in the right direction toward expansion of markets.

Bulk, layers, 50-lb. box 2.75

CITRUS FRUITS.

Shipments of oranges to eastern markets from southern California are going forward in large numbers, the shipments up to Feb. 7th being 4566 cars for the season, as compared with 4426 cars to same date last year. Lemon shipments to the same date were 1409 cars, as against 872 cars last season at this time.

On the eastern citrus auctions oranges are bringing good prices for this season of the year. At New York Feb. 7th, the auction averaged for navels from $2.50 to $3.70 per box, and lemons $4.15. At Chicago the same day oranges averaged from $3 to $4 per box, and lemons $3.50 to $4.25.

San Francisco markets have shown considerable life on every fair day, but with adverse weather conditions much of the time, sales on the whole have not been very heavy. Values, however, are well maintained on all lines.

(Wholesale prices, San Francisco.)

Oranges, Navels	$1.50@2.75
Tangerines	1.50@2.00
Grapefruit	1.75@2.25
Lemons, box	1.75@3.00
Lemonettes, box	1.50@1.75

HONEY.

Shipments to outside markets since the first of the year have not been heavy, but the surplus is pretty well cleaned up, and the local consuming trade is beginning to come into the market more actively. Values are accordingly well maintained, and while no heavy shipments could be disposed of to advantage, a moderate amount of good honey should find a ready market.

Water White, comb	13@15 c
Amber	8@12 c
Water White, extracted	7@ 8 c
Light Amber	3@ 4 c
Dark	2@ 2½c

NUTS.

(Prices f. o. b. San Francisco.)

Almonds (1915)	Nominal
Walnuts (1915):	
Budded, per lb.	17½c
No. 1	14 c
No. 2	11 c
Jumbo	17 c

LIVE STOCK.

Dressed hogs show another slight advance, and live hogs weighing from 150 to 175 pounds, also have been marked up again.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, S. F.)

Steers, No. 1	7 @7¼c
No. 2	6½ @6¾c
Cows and Heifers, No. 1	6 @6¼c
No. 2	5½ @5¾c
Bulls and stags	4 @5½c
Calves, light	8½ @9 c
Medium	7½ @8 c
Heavy	6½ @7½c
Hogs, grain-fed:	
100 to 150 lbs.	6¾ @7 c
150 to 175 lbs.	7¼c
175 to 250 lbs	7¾c
250 to 325 lbs.	7¼c
Prime Wethers	7¼ @7½c
Full Wool Lambs	8½ @9 c

DRESSED MEATS.

Steers	10¼ @10¾c
Veals, large	12½ @13 c
Small	13 @14 c
Prime Wethers	11½ @13 c

Forkner Cultivator



The yield of alfalfa and grain may be increased, and the quality improved by proper tillage.

The FORKNER Spring Tooth Tillers penetrate and loosen the hard soils, admitting free air to the roots, promoting more rapid and vigorous growth.

Catalog for the asking.

THE H. C. SHAW CO., Distributors. Stockton, Cal.

Only $2.00 per 100 or $15.00 per 1000 for the famous Ettersburg No. 80 or 84 Strawberry plants postpaid. Would advise you to place your orders with the J. H. Keith Nursery Co., Props. of the San Joaquin Valley General Nursery and Experimental Farm, Arvin, Kern Co., Calif. Their plants are fine, well-rooted foundation stock direct from Mr. Etter. They also have fine pure Sudan grass seed grown where Johnson grass is unknown. The foundation seed supplied direct from U. S. 35 cents lb.; 3 lbs. $1.00 postpaid. Cut this ad out.

Lambs	14½c
Hogs	10½ @11 c

HORSES.

There have been no sales of horses worth mentioning in the local market this week, but a more active business is expected shortly, as there is a lot of construction work to be done at outside points as soon as the weather clears, and a number of contractors will be in the market. According to some Eastern dealers, the war buying has had comparatively little effect on the general situation, the actual number shipped being small in comparison with the number in the country; while the depression in the Southern cotton industry has thrown a lot of horses on the market.

(Approximate values at San Francisco, based on auction sales.)

Drafters, 1700 lbs. and up	$250@300
Drafters, 1550 to 1650	150@225
Chunks, 1350 to 1500 lbs.	150@175
Wagon horses, 1050 to 1350 lbs.	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@ 75
Farm Workers	50@100

WOOL.

Local dealers have been operating rather actively the last couple of weeks, owing to the increasing interest Eastern markets are showing in California wools, and it is said that about half of the wool remaining in the country at the end of the year has recently been bought up, while shipments East have been heavy. Values are quite firm.

(Prices paid in the country.)

Sacramento Valley, lb.	17 @18 c
Southern, year's staple	14 @15 c
Six months	12 @14 c
San Joaquin (defective)	10 @11 c
Northern, free	12 @15 c
S'thern Mountain, free	12 @13 c
Tehama Co., free	13 @14 c

WEEKLY BUTTER AVERAGES.
Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	18.60	28.00		28.20
" 9	25.33	26.66	26.00	28.10
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	26.66	30.66	28.00	36.66
Feb. 6	26.68	30.25	26.80	32.33
" 13	26.74		27.00	
" 20	29.00		27.16	
" 27	29.10		27.00	
March 6	27.00		25.25	
" 13	24.66		24.00	
" 20	23.00		22.50	
" 27	22.91		23.00	
April 3	23.00		22.23	
" 10	23.08		22.00	
" 17	23.00		22.00	
" 24	23.00		22.00	
May 1	23.08		22.00	
" 8	23.00		23.08	
" 15	23.58		23.00	
" 22	23.58		23.00	
" 29	23.50		23.00	
June 5	23.90		23.00	
" 12	24.08		23.83	
" 19	25.16		26.00	
" 26	25.50		26.16	
July 3	25.83		26.16	
" 10	26.21		26.00	
" 17	26.58		26.00	
" 24	25.41		25.50	
" 31	27.00		26.00	
August 7	27.00		26.00	
" 14	27.00		26.00	
" 21	27.50		26.00	
" 28	28.00		26.00	
Sept. 4	28.00		26.00	
" 11	28.00		26.00	
" 18	27.00		26.00	
" 25	26.50		26.00	
Oct. 2	25.91		26.00	
" 9	26.91		26.00	
" 16	27.00		26.00	
" 23	27.00		26.00	
" 30	27.00		26.00	
Nov. 6	26.55		26.00	
" 13	28.11		26.32	
" 20	29.59		28.60	
" 27	28.90		28.80	
Dec. 4	27.41		26.50	
" 11	27.33		23.82	
" 18	43.08		36.00	
" 26	26.40		28.00	

WEEKLY EGG AVERAGES.
Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 30	28.16	28.83	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50
" 13	23.00		25.10	
" 20	23.60		23.58	
" 27	21.40		20.80	
March 6	20.50		19.00	
" 13	20.66		19.00	
" 20	21.00		19.66	
" 27	20.83		18.50	
April 17	22.00		23.08	
" 24	21.80		22.25	
May 1	26.16		22.00	
" 8	23.33		22.00	
" 15	23.16		22.00	
" 22	23.75		21.91	
" 29	23.08		21.83	
June 5	22.50		20.70	
" 12	22.00		21.00	
" 19	22.00		20.00	
" 26	23.33		23.83	
July 3	23.83		22.50	
" 10	25.50		25.00	
" 17	24.83		24.66	
" 24	25.41		25.50	
" 31	25.80		25.80	
August 7	30.50		28.00	
" 14	31.16		28.66	
" 21	31.25		30.16	
" 28	30.58		29.16	
Sept. 4	30.08		30.16	
" 11	34.33		31.66	
" 18	37.08		33.37	
" 25	38.66		34.66	
Oct. 2	40.08		37.33	
" 9	40.08		38.00	
" 16	45.50		40.00	
" 23	48.08		42.00	
" 30	48.58		42.83	
Nov. 6	51.08		43.00	
" 13	54.25		45.33	
" 20	53.83		45.00	
" 27	52.90		43.40	
Dec. 4	43.91		40.16	
" 11	41.16		37.33	
" 18	27.83		28.00	
" 25	40.80		36.60	

Almond Growers:

A prominent eastern dealer in the almond trade, commenting upon the offer of speculators to cut the lowest Association price, says:

"When a seller publicly acknowledges he is second fiddle, and does not even pretend to be able to get the same price, that of itself is an acknowledgment both as to the quality of Exchange almonds and their method of doing business. Of course, the bad feature and shame of it is that a comparatively SMALL lot of goods has a tendency to PULL THE PRICE DOWN on an important California product."

California Almond Growers' Exchange

SAN FRANCISCO, CAL.

Publisher's Department

The heavy rains of the past month have interfered with subscription work, but they have not dampened the writing ability of our staff or friends living in the country. At this time we have several fine articles in hand which will appear in an early issue of the Rural Press. One will be on the raisin situation, another covers almond growing in the Sacramento valley and a third is by Albert F. Etter telling of his great work with strawberries. This last article Prof. Wickson says will command world-wide interest. Now is the time to subscribe.

This office sent out more books during January than during any previous month. The new book "Second Thousand Answered Questions in California Agriculture" has been very well received and many orders are coming in. At this time of the year, we naturally expect to sell large quantities of California Fruits and California Flowers, nor have we been disappointed. Our other books, covering vegetable growing, swine breeding and poultry practice are all being called for in good numbers.

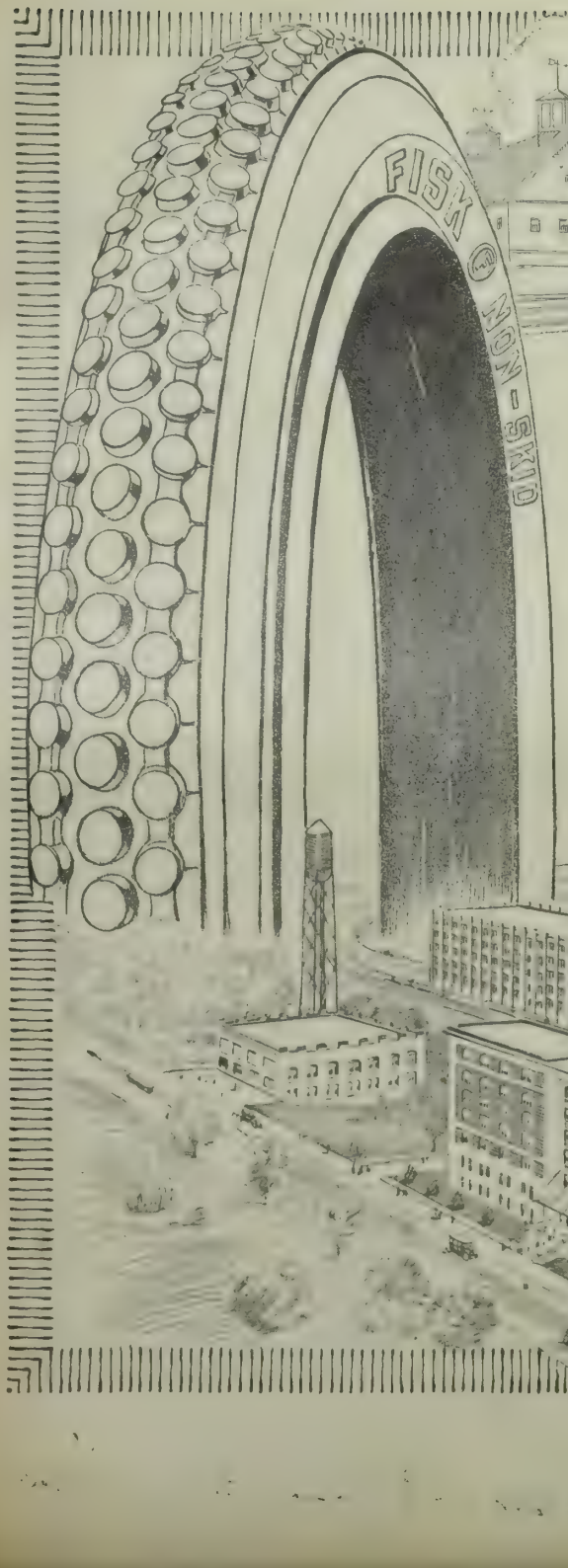
If a few of our subscribers who have the issue of August 14, 1915, of the Pacific Rural Press will send them to our office we will consider it a great favor. We are short this one issue to complete the several volumes that we bind.

ALMONDS

I own and operate as a going ranch 2000 acres in the centre of the Almond belt of the upper Sacramento Valley. Full equipment of buildings, heavy farm machinery, tractors, etc. Artesian water.

I desire one or more associates with sufficient capital to join me in planting several hundred acres to almonds,

Box 207 Pacific Rural Press



FISK — a Remarkable Growth

29 ACRES Devoted Solely to the Manufacture of Tires. That is the Great Story of Fisk Progress! Out of the constantly increasing demand for Fisk Tires during the past 17 years has risen the wonderfully complete and impressive organization of today, 17 years of square dealing and honest values.

The Fisk Plant is one of the most up-to-date tire factories in the world. Progress and Permanency are written there on every hand. The very latest improvements and inventions are found in buildings and equipment.

Fisk Tires are distributed through more than 100 Direct Fisk Branches located in the important business centers of the country. These Branches are in immediate touch with Dealers and Users, providing an instant supply close at hand.

Each Branch renders Free Fisk Service to all motorists regardless of the make of tire used. This Service includes changing tubes and casings, inflation, inspection, advice, instruction — *all absolutely free.* Charges are made for actual repairs *only* and we do these in the most economical manner.

There is probably a Fisk Branch within easy motoring distance of you. You are cordially invited to call and become acquainted.



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THE PACIFIC RURAL PRESS

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SAN FRANCISCO FEBRUARY 19, 1916. LOS ANGELES

Why Raisin Men Must Keep the Faith.

Fifth of a series of sketches in which the Editor presents suggestions drawn from long experience, of what Californians should think and do for the advancement of California Agriculture.

IT WAS the fortune of this writer to attend, on January 7, 1892, a farmers' institute at Fowler, Fresno county, at which transpired an event of much interest in the history of co-operative organization in California, because at that meeting the first step toward a general association of raisin producers was taken. There were previously a few local co-operative packing-houses in successful operation. There had been some talk of affiliated action among them and the ingathering of producers generally, but the transaction at Fowler on that day was the actual initiative in such direction, and was at the time understood to be of that nature. The transaction was this, after a discussion filling most of the day: Capt. C. H. Norris, J. S. Dore, J. H. Larue, Alexander Gordon, N. W. Motheral, F. M. Morton and D. M. Pyle were appointed a committee with these instructions: "To prepare and issue a call to the raisin producers of California to assemble in Fresno soon to consider and take action upon the proposition of general co-operation of all raisin producers in the preparation, packing and marketing of their products."

The committee discharged his duties commendably. It called the contemplated convention, which assembled in Fresno on Feb. 18, 1892, passed the matter of general organization on to a larger committee, and thus set to rolling the ball which has been cushioning and caroming to the present day, and has not yet fully reached its destination. It has never yet completely known where it was going, but has always been on the way—as may be briefly outlined presently.

An Expedited Prophecy.—The raisin industry was in a bad fix in 1892; somewhat prematurely so. In 1889 the late George West, State Commissioner of Viticulture from the San Joaquin district, began to have a conviction that there might be trouble in disposing of the increasing crops of raisins, and in 1890 he published a report with statistics of acreage and product in the Fresno district and of the raisin consumption of the United States and prophesied that in 1895 the product could be twice the American consumption of raisins, and significantly added: "It is necessary to the future of the industry that these facts become generally known, and, being known, it is for each individual to decide whether or not he will engage in the industry." The condemnation of this prophecy by those who were subdividing land for sale to intending raisin-growers need not be revealed. The language they used about Mr. West would serve well as a mildew-preventive. As we now look back upon the incident, it appears that the chief mistakes he made were in estimating the speed with which his facts would work and in discerning the reason

(Continued on page 222.)



TYPICAL VIEW OF RAISIN VINEYARD IN SAN JOAQUIN VALLEY WITH FRUIT CURING IN THE USUAL WAY.

This is the great industry which has carpeted thousands of acres of California's arid plains with verdure following introduction of irrigation water, and in the service of this industry producers have developed a system of co-operative packing and marketing which must be maintained.

PACIFIC RURAL PRESS

Issued Every Week at 525 Market Street, SAN FRANCISCO

ENTERED AT S. F. POSTOFFICE AS SECOND-CLASS MAIL MATTER

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PACIFIC RURAL PRESS - SAN FRANCISCO

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D. L. SCHRADER - Subscription Manager
R. E. HODGES - - Assistant Editor
J. C. LOOMIS - - Assistant Editor

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., February 15, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	1.08	28.84	28.33	66	42
Red Bluff	.13	17.30	15.85	78	44
Sacramento	.11	15.62	12.51	68	44
San Francisco	.15	24.09	14.71	72	48
San Jose	.04	14.47	10.54	74	42
Fresno	0	8.94	5.93	70	48
Independence	0	9.24	5.82	52	—
San Luis Obispo	0	23.18	12.45	84	46
Los Angeles	0	17.25	9.78	88	42
San Diego	0	10.89	6.34	78	48

THE WEEK

We are yielding to convictions of the causativeness of planetary conjunctions and may get our rebellious moods into harmony with the precepts of the great Santa Clara spotter and conjunctor—for it may yet appear to us as the harmony of the spheres. For did not Jupiter and Venus tango down the western sky on Sunday evening last, in as close embrace as, perhaps, this generation will dare to look upon, and was not Monday as delicious a February day as even Californians ever fill their eyes and hearts with? Did not the glorious sun send broad beams of heat and light through our clear, rain-washed winter air until acacias and daffodils threw back upon his gleaming face even a deeper golden-glow than that of his unfolding? And did not these grateful blossoms surcharge the air with entrancing perfumes—their tribute of incense-worship to the beneficence of their greatest planetary relation! Yes, we are being moved towards wider recognition of our earth's dependence upon her planetary environment—the greatest co-operation in the visible universe. But why have priests and prophets from prehistoric times found tokens or causes of evil in these celestial phenomena, which are but necessary phases of operation of the universe and held in beneficent sequence by the Author of it? No answer can be found to such a question except in the assumption of inexplicable darkness in the human mind, which neither revelation, science, nor experience have yet fully illumined—the lingering vestige of original sin in the human soul, which fails to comprehend its God, cravenly fears its devil and enfolds itself in superstitution, even to dimming the effulgence of California February sunshine!

Our War Is Not Getting On.

We are not surprised that our readers are manifesting some discontent with the article of war we are giving them. We had hoped to get the belligerents out of their trenches and chasing each other across the landscape before Washington's Birthday, but they are still securely dug in. Our air-men report that the commanders are playing seven-up in a connecting gallery, and they cannot get even the score of that because they are playing under an umbrella. It is really sickening to think that we have only succeeded in bringing on such a war as that, and really we do not care much how soon the pacificists drive them off the field. We are quite in sympathy with a reader who writes in this way:

Deer Rooral: You have put on the bummest fite sence the Jefrey Fitshimmon eskepod up tu Reno. It looks tu me that wun ov youre kunels is afrade an 'tother dassent. I'm razin mony to hire Wm. Jenny Bryne tu cum over and throw wun ov his Shotaway sirkits tu wake up yure kunels. My nabor, Burrick, kin put up a better fite fur piece than yure kunels kin fur war.—Pacific-ist, Pacific Grov.

Well, as we said about this war, there is only one certain thing about it, and that is that we started it—and that is more than any one will say about the European war. Fortunately, our readers are dropping bombs on the commanders, as other pages of this issue show. It is everybody's chance to do some fighting now on the general subject of whether they want paternalism or not, and if nobody strikes in, we shall have to decide that this question belongs to unsolved war-problems like the question of who struck William Patterson.

A Worsted King.

Speaking about war: although it does not yet clearly appear which bunch of allies, central or exterior, will take a final fall from the other, there can be no doubt which king is getting the worst of it—for it is King Alcohol. The exterior allies seem to be hitting him hardest; probably because some of them have drunk harder stuff than the wines of France and Italy and the beer of Germany. However, the first great drive against alcohol was made by the Russians on "vodka," which we understand to be a beverage of pronounced forty-rod type. The czar began some years ago by bringing all the vodka under government control, and dispensed it in government saloons, closing all others. It was supposed to be a great government scheme for revenue-monopoly—and perhaps it was, but the control of selling worked well when the prohibition of vodka was ordered as a war measure, for as there were no private dispensaries, the temptation to breed "blind pigs" was small and remote. The government first had it all and then sold it all and then stopped it all. But England was a close second to Russia in the drive on King Alcohol, and hedged him very close, and this week we read that the British government will immediately take over all the large whisky distilleries and use them as munitions factories, and the account adds that "the step will be facilitated by the fact that the Government intends to prohibit the importation of barley for distilling purposes." We do not really see how the government can tell by the looks of a cargo of California barley whether it is going finally to a brewery or to a distillery, but perhaps George knows more about it than we do. Perhaps, also, he thinks if he stops distilling there will be enough home-grown barley for beer. But even so, why does he jump to an embargo on barley to check distilling? He ought to know more than he seems to about rye, corn and wheat whiskey. A Kentucky colonel, sur, can tell him more about that than our two colonels seem to be telling us about anything!

Will It Be a Baffle on Barley?

We ought to harvest about thirty million dollars' worth of barley this year. It is customary to ship about half the crop to foreign markets when the wind is good, the Panama free of mud, and the ocean of submarines. We managed to get out about eight million dollars' worth of it by sea last year when the wind was about the only free thing, and the chance of doing even better this year seems good—except for the report of a British embargo on barley. That is a thing which barley-growers ought to be looking into on their own account, for if they do not do something to expose some error in the report or do something else to assure an outlet for the surplus, the buyers will pound opening prices for the new barley crop into road-metal. This sort of thing is always coming up—last year it was prunes and peaches; this year it may be barley and, perhaps, something else. Why cannot growers of a crop understand that if they are to get fair money out of a crop they must fight for it. We do not say they must control and price it. It takes a rare condition like that of the raisin makers, which we are discussing on other pages of this issue, to enable producers to do that. But they can defend their crop; they can find out what affects the sale of it. and they can submarine the pirates in the channels of trade. Col. Irish says they can do that for themselves and get taller as citizens. Col. Weinstock says the State will do it for them, and make them bigger where the belt goes around. We don't care which colonel does it so long as it gets done, for we can see that it must be done. California is the biggest barley State in the Union, bigger than any other by ten million bushels. Now, then, comes this bruise of a British embargo on barley. What are we going to do about it? We are likely to be hard hit on barley. As we write, the Canadian frontier, across from Buffalo, is bristling with bayonets, for the Kanucks fear a hyphenate-invasion. If those hyphenates really get to going through Canada they will drink up all the Canadian beer and leave Milwaukee and St. Louis dry: that will cut off our chance of rail exports of barley to the Mississippi valley. And so we stand a chance of being hit, both by land and sea. President Wilson should include California barley in his case against England, and write a letter about it. He ought to tell Earl Grey that if he is unfair to California barley, we will bore a hole through the earth and deliver it by pipe line to the Munich breweries. Something must be done and producers are really the only ones who have fundamental interest enough in it to make things hot.

A Nice Question of Alliance.

But California may possibly be drawn into foreign war on a more delicate question than fair trade in beer-stuffs. Possibly we may have the battle-ground on which the exterior allies will settle their internal differences. The story is that there is a consignment of cute little green silk flags held up at the San Fran-

cisco customs house because the name of the country of manufacture, Japan, is not printed thereon. The flags were brought here for the Hibernia Bank, and are intended for distribution among the friends of the bank for St. Patrick's Day next month. The name of the Hibernia Bank and Erin Go Bragh are printed above and below the harp, but not the name of the nation where the printing was done, as the law requires. "And is it 'Erin Go Bragh—Made in Japan,' yez say: the durty haythen!" It seems to be a new and rather delicate case of hyphenation.

More People; More Fruit.

The census office at Washington issues this week its estimate that the population of the United States on January 1st was 101,208,315, and that by July 1st it would be 102,017,302. On July 1st last year they figured the population at 100,399,318. This would indicate that this country is growing faster than one and a half millions a year, and we have the conviction that its ability and capacity for good living is growing far faster than that. Both these facts have direct bearing upon the coming demand in this country for the special, high-class food products which California is developing for consumption beyond State lines. This is very important to us in view of our increasing investment in such production. In our next week's issue we will print a tabulation of the present and coming volume of our fruit production prepared by G. P. Weldon, deputy State Horticultural Commissioner, with great care and energy. It should be carefully studied and held convenient for frequent reference.

Higher Sphere for Horticultural Officers.

Last week we briefly presented the suggestion that our county horticultural service was doing too much in the way of local quarantines, which impeached its value in inspection and made people trouble without just cause or reason. On this subject we receive the following note:

To the Editor: I am much interested in your editorial on inspection and geographical quarantine of Feb. 12. I believe with you that your multiplying local ordinances will soon make a general overhauling necessary. It may be of interest to you to read an article which I contributed sometime ago to the Sacramento Bee. This explains to a certain extent the unfortunate condition under which the County Horticultural Commissioner is working. On the one side, he finds the Farm Adviser encroaching on his territory—and rightfully so—and on the other side he does not get the support that he ought to have from those who are most interested in the success of his work. I believe that, with Colonel Weinstock's aid, the much neglected work of standardization will soon be taken up once more, and if we then insist upon a better control of our weed pests, we will find enough activity for the county commissioner to make a better showing than he has done in the past; and with more activities to call upon his time, he will be less concerned about the multiplication of local ordinances that cause the justified complaints by nurserymen and intending planters.—G. H. Hecke, Woodland.

Mr. Hecke, who is well known as county horticultural commissioner for Yolo county, certainly writes from much experience and careful thought. In the article to which he refers, he advises close inspection at entry points of all inter-State railways—both of personal effects and mail parcels and co-operation with provisions of national law for pest exclusions. This would relieve the county officers of much work which they now do and which should be obviated by a better State quarantine service—that is one which covers unguarded directions of approach. Then the county officers could discharge duties which would count more for the promotion of regulated trade in fruit under State executive auspices. This matter certainly should receive careful attention by all those whose industries are affected and by all who are otherwise interested in the horticultural development of the State.

Queries and Replies.

Querists must give name and address.

A Quick Rotation.

To the Editor: Can I put Egyptian corn in barley ground after the barley has been harvested, which will be about the first of June? Would it be all right to plant some kind of peas or something else that would make a good feed after the corn was harvested? This ground can be irrigated, and it is the best kind of land.—H. D., Woodland.

Yes. on that kind of land, with water you can get a three-crop rotation in a year. almost. Irrigate and plow in your barley stubble deeply and straight-disk it down well. Drill in the Egyptian in wide rows and cultivate, irrigating also, if necessary, to get good height. This will bring you to September, when you can irrigate and plow shallow, or disk in the peas or vetches, after clearing off the 'gyp stubble. They will make you late fall pasture. This scheme will keep you jumping, but you can do it.

Galleta—A Valuable Desert Grass.

To the Editor: Will you give information on the value of "gietta" grass at a forage for sheep?—E. S. K., Nyland.

We presume that the name you use is a synonym of "galleta," which in its Spanish pronunciation would have a somewhat similar sound. Galleta is a desert grass, growing from Southern Nevada, Arizona and Southeastern California southward into Mexico. Botanically, it is Haltica rigida. It is described as a coarse, much branched and woody perennial. It belongs to the same genus as the "creeping mesquite," "black grama," and other grasses of the same region. Griffith, in his Range Investigations in Arizona says: "Galleta is an important grass throughout Arizona. It nearly always occupies swales or depressions, and for its best development gets one or more irrigation by flood water during the year. Small areas will sometimes cut a quarter of a ton of hay to the acre. In the northern portion of Arizona it must be considered one of the most important grasses. It is often grazed to the ground continuously." We have at hand no analyses of the plant, but its practical value seems to be fully demonstrated.

Growing Castor Beans.

To the Editor: Kindly give information regarding castor beans as a commercial crop in California, and if there is a mill or market here for them. I am versed with the growing, handling and marketing of them in the Middle West and I believe they would prove a good crop here, especially on the black lands, as they will grow with very little moisture and the expense of growing and harvesting is very small. The weather for curing and threshing is ideal in this county, also a great many other counties of the State where the frost is not too early or late. It takes about 60 to 70 days for the first spikes to mature and they will keep fruiting until frost.—E. J. D., San Joaquin Co.

There were more castor beans grown in California forty years ago than there have ever been since. The price has always been limited by what oil-makers had to pay for East Indian beans laid down here from Calcutta, and that was too low to meet high labor cost in California. Those thinking of the crop now should find out what contract price the San Francisco oil mills will make on the beans; possibly they are now high enough to make the crop pay. Our correspondent is right about the long ripening and drying season in California, but the crop requires much hand labor cutting the clusters as they reach condition all through the fall, and in drying the clusters so the beans will pop out. The whole business is not so easy as our correspondent thinks, but it is worth looking into because the war has castor oil coming up when it ought to stay down to do its work.

Why Most Potatoes Fail.

To the Editor: I would like to know what kind of fertilizer will be good for potatoes in this part of the country? The soil is a light sandy loam. There are potatoes enough to the hill, but they do not get large enough.—G. L. R., Shafter.

Are you sure that you planted early enough? We have been dinging away on this proposition for three or four decades, and yet people will keep planting potatoes on mesas and plains in the spring when the plant should be already well grown by that time and making tubers. Nearly twenty years ago, in the first edition of our "California Vegetables," we said this: "In parts of the state where there are high heat and drouth or the soil becomes dry even with moderate heat, planting must be undertaken early enough to allow a large part of the development of the plant before such stress comes. Local failures with potatoes may, therefore, be often attributed to neglect of planting as soon as moisture and temperature conditions favor growth in each locality."

In your county last year L. O. Haupt, who won the prize in the High School contest, planted in February. It is often desirable to plant in January in places of moderate rainfall. On moist lands, in moderate heat and moist air, potatoes can be planted all summer, but this does not justify late planting on plains or mesas. At elevations in the foothills and mountains late planting may also be done with irrigation. This means that we apprehend that your plants failed to make large potatoes because they did not have a chance to make more growth in cool, moist air. However, if it is really fertilizers that you need, read the experience of the Exposition prize winners. the Boa Vista ranch of Eldorado coun,ty as printed in detail in the Pacific Rural Press of December 25 last. Plenty of stable manure, plowed in some months before planting, followed by application of a "complete fertilizer, such as any of our firms advertising fertilizers can supply you, will insure large potatoes—providing you plant early enough to get a strong plant to produce them, or supply moisture by irrigation to keep the plant at work. If you want rainfall potatoes you must have them making most growth while it rains, unless you are on low, moist land.

GROWING FRUIT ON LEMON SUCKERS.

How Pruning and Fertilizing Have Increased the Yield of a Lemon Orchard 13,685 Picking Boxes in Five Years.

[Written for Pacific Rural Press by Jas. K. Catlin, Carpinteria.]

In July, 1909, I purchased a 20-year-old lemon orchard that had been pruned low so as to pick from the ground. From July to November of that year I picked 2135 picking boxes. That fall I put on 10 pounds of commercial fertilizer to the tree and continued the old style of pruning.

From November, 1909, to November, 1910, I picked 3015 picking boxes. That year I gave the trees another 10 pounds to the tree of nursery fertilizer and started to prove out a system of pruning all my own.

I felt it was a mistake to cut off practically all the new growth every year, so ordered my pruners to leave sucker stubs wherever they had a good footing, remembering the growth from these stubs would be upwards and not to leave them too long.

Unfortunately my pruner did not think much of what I was doing and was not as careful as he should have been in making his cuts. Some were left two feet where they should have been 10 or 12 inches. My plan was to leave stubs each year, in this way, making the cuts so they would develop new fruit wood all the way up in the new growth which I was building.

I found, after each cutting, there would be a number of short spurs of fruit wood thrown out, which would bloom and fruit in one to two years, according to the amount of growth made; and that happened every time that I cut a sucker or good growth back. While they would throw out more suckers or wood growth, there would be one to three or four fruit spurs. I found that by continuing this process, there would be a succession of new tops grown on the tree with fruit spurs and branches all the way up.

As this new top reached bearing age, it would fruit, and the weight of the fruit would bring the branches over, increasing the circumference at the same time I was adding to the height. My plan was to keep this up till I reached a point where it would not be safe or profitable to go higher. As the new branches were brought down by the weight of fruit I would gradually cut out the old limbs that would naturally be smothered out to some extent.

In doing this I tried to go through the orchard each month, cutting off any wild growth I saw, to prevent the trees wasting their energy or growth that would have to be taken off later. In this way I gained a good many months' growth on my orchard in the five years of growing.

As my trees became larger I gave them fertilizer, spring and fall, believing that two applications would be better for the trees than to give them one heavy feed and then let them go hungry for a time.

By this process my yield gradually increased till my yearly picking for 1915 reach 17,000 picking boxes. From now on I plan to thin out my trees and cut back the long drooping limbs, as the sap does not circulate well in these overhanging limbs, and there is a tendency to grow small fruit on that account.

Doesn't Approve of Prune Auctioning.

To the Editor: I do not think that in their discussion of the best way to sell our prunes either of the Colonels are hitting the nail on the head. Col. Weinstock's scheme seems to me to have two weak spots in it: First, he advocates the value of a State brand on our goods. If the prune growers should form a State-wide association to sell our prunes and applied to a New York banker to hire money on them, that banker would ask just three questions, viz.: "Have you those prunes concentrated so that I can ascertain readily whether in amount and standardization they are what you claim? Is your association so organized that I can sue it if you fail to fulfill your agreements? Are the directors and manager of it men of sufficient brains and business experience to carry your scheme to a successful issue?"

If we fail to answer any of these questions to his satisfaction, we couldn't hire a dollar of him at any rate of interest. If we satisfied him on those three points he would never look to see whether our brand read "State of California" or "Kamschatska." A State brand would have no value whatever unless it made the State liable for our conduct of the business.

I don't like Col. Weinstock's plan to sell dried fruit at auction on arrival at point of destination. It is a necessity to sell green fruits, on a large scale, by that method, but there is no valid reason for exposing our dried fruits to such risk. The moment our Prune Association became strong enough to threaten the changing of our present methods of marketing prunes we could count on the united opposition of California packers and the eastern wholesale trade. The former would oppose it for obvious reasons, the latter because the present system, which enables them to acquire our whole crop every year, at their own prices, and puts them under no responsibility to us as to their methods of disposing of it, is the best possible from their standpoint.

Supposing that our organization should ship prunes to New York, Chicago and Boston, to be sold at auction on arrival. What would prevent the secretary of the wholesalers' association from wiring members in those cities not to bid above a certain price? Where would that leave us? We would have to submit to having our prunes slaughtered, or store them and abandon our plan. Why should we, any more than the Walnut Growers' Ass'n, dispose of our goods by auction?

I heartily approve of the Information Bureau plan. It is worth while for itself and would speedily develop into a selling organization.

Napa. Fred K. Smyth.

A meeting of walnut growers was held last week at Tustin, Orange county, to consider the formation of a walnut growers' association. It is said that there are 600 to 700 tons of nuts grown in that district.

Farmers in Coachella Valley have while their new onions and radishes recently been digging sweet potatoes are already on the market.

It is believed that last year's sugar beet crop in Salinas valley may be increased this year, as prospects for a big crop are at present good.

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Spur Pruning Peaches.

[Written for Pacific Rural Press.]

Peach varieties vary in their tendency to set fruit buds close to the base of new growth. On this characteristic depends to considerable extent, the severity of pruning back new growth. F. C. Dyer has 10 acres of several varieties near Ontario in which he has almost devoted his life since he planted the seeds, having budded and planted the trees 21 years ago. Spur-bearing lemon Clings, looking almost as rough as pear trees, occupy 3½ acres. With this variety Mr. Dyer has been exceptionally successful. They bear fruit buds from the very base of the new growth.

Since the trees are so old, not over a few inches of growth are added to the spurs each year beyond the fruits, though two or three feet of last season's growth are being cut out of the tops. This lack of vegetative vigor makes it desirable to shorten back the spurs to not over three fruit buds, since only one fruit is desired per spur and since such winter pruning on such old trees does not induce too vigorous wood growth. This is somewhat true of the down-turning branches of most any variety.

All the fruit wood possible is developed and saved along the main limbs since here it "short circuits" the sap into fruit, while in the upright top limbs, it is more likely to make wood growth. If spurs are too thick, they are thinned out to prevent shading the rest. There were so many spurs on the main limbs this winter that practically all of the new top growth was cut off from the Lemon Clings.

Lovells can be pruned back to spurs almost as short, Muirs a little longer, while Tuscans bear fruit buds only close to the tips which must be left on, or the branches thinned out.

Fruit Tree Supports.

[Written for Pacific Rural Press.]

Use of screw eyelets and wires to make one main limb balance another in the orange trees at the Riverside Experiment Station showed that these eyelets, which are about the diameter of a 10-penny nail, do not pull out under heavy loads or winds, and the wires did not break. The limbs in several cases, however, broke some distance above the eyelets, and in some cases the limbs bent sidewise and broke below the eyelets.

Some rough 1x2 props had also been used on the Navels of this block. These props were all about six feet long, the support for the limbs being a heavy wire bent into the shape of a hook at one end of a 1x2½ rectangle. The rectangular part of the wire was slipped over the 1x2 and hung slanting down toward the hook end so it could be adjusted to any desired height by slipping it up or down.

This heavy navel crop in a year when navels are generally perhaps 25 per cent short, is on the fertilizer experiment plot where cover crops have been continuously used several years.

SPRAYING APPLES AND PEARS.

To the Editor: Is there any spray which will prevent worms in pears and apples? If so, would you please give formula and when to apply it?—F. J. W., Hanford.

[Answered by W. H. Volck, Horticultural Commissioner, Watsonville.]

Worms (codling moth larvae) in pears and apples are readily controlled by spraying with lead arsenate. The chief point to be observed is to make the application early enough to head off the first brood of worms. This involves spraying when the blossoms are falling and before the calyx cups have closed.

Pears should be sprayed at this time and once or twice shortly after; the sprayings two to three weeks apart. In most localities Bordeaux mixture should be used along with the lead arsenate to combat scab.

Formula: Acid lead arsenate 12 pounds, 5-5-50 Bordeaux to make 200 gallons. For apples the scab treatment is not usually required. Formula, first spraying: Acid lead arsenate 12 to 15 pounds, water 200 gallons; second and third sprayings: Neutral lead arsenate 12 pounds, water 200 gallons.

WALNUT TREES WHILE YOU WAIT.

The Ventura Farm Bureau says that a nurseryman of that county offers to use any walnut scions furnished him, to put the grafts into black walnut stock, to care for the resulting trees to the best of his ability and deliver all that grow to the purchaser. He will charge 50 cents for every graft he puts in. If they all grow the cost will be 50c per tree, and if some do not grow the cost will be higher. This for growers who have particularly profitable trees which they desire to multiply for their own planting.

APRICOT FINISHING TRAY.

Mr. R. E. Harrington, of Simi, says the Ventura Farm Bureau, is using a tray 7½ feet long, 3 feet wide and 3 inches deep, with nine-inch handles on the end, into which to scrape the apricots from the field trays. This tray, being longer than the field trays, catches the fruit which might otherwise fall over the ends of the tray to the ground. When the apricots are dried enough to prevent sticking, or curling, they are scraped into one of these large trays and stacked until the fruit is ready to go into storage. One of these large trays will hold the fruit from about ten field trays.

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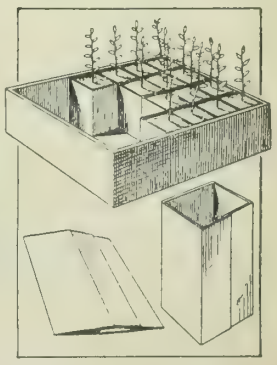
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Why Raisin Men Must Keep the Faith.

Continued from page 217,)

why they would work at all. We can see now that it was not so much the relation of the California product to the American importation (though of course increase of product aggravated the situation in all ways) as it was the total lack of preparedness to market the product, fairly to the producer and aggressively to the consumer. It was being handed over to traders whose natural purpose was to make as much profit as they could from every pound of it. It was easier and cheaper for them to lower the grower than it was to lift the consumer, and so it came about that within one or two years instead of five years, after general conceptions and small individual actions; of clear demonstrations of the potency of co-operation, always just out of reach because of the refusal of a minority to co-operate; of absolute proofs of the efficacy of co-operation to secure fair rewards for labor and investment, which such a minority admits that it enjoys and yet to which it will give neither moral nor financial support. This is passing strange—yes, even incomprehensible in connection with the raisin industry, because no special-product region has ever fallen lower by unfair produce trade nor risen higher by capable regulation of such trade by producers, than has Fresno during the last quarter of a century. Every intelligent person knows that there have been times when raisins could not be sold for their equivalent value in hog-feed; when mortgages multiplied as long as any one would finance them; when not only reasonable raisin growers but fruit packers, merchants, bankers, transportation managers—in fact all people, even though some of them had previously made money because growers were unorganized, actually made a drive on kickers, compelling them to sign up, to save the institutions, the homes and the livelihoods of the whole district. It is a matter of common knowledge that whenever growers have come together, raisins have paid a profit, mortgages have been cancelled, old bills have been paid and even the very landscape has taken on a new sun-gleam of prosperity. It is also perfectly known that whenever growers have been torn apart by adverse interests or have fallen apart by their own conceit, envy, greed, visions, vagaries or ungraded foolishness, they have been trampled upon. Thus they always have been since Mr. West's prophecy; thus they always will be—because in the present development and in its need of world conquest there is no trade-power on earth which has the motive, purpose, endurance, money or general capacity to handle the raisin product for its future except such a trade-power as the growers have it within themselves to create and to uphold.

CALIFORNIA RAISIN ROSTER.
(subject to correction)

Year.	Characters and Incidents.	Crops, lbs.	Prices, cts.
1887	(Heyday of early prosperity)	16,000,000	5
1889	(The downward turn)	19,740,000	3½
1892	(General organization proposed)	57,000,000	—
1893	(Failure to effect organization)	103,000,000	1½
1898	(Kearney's successful organization) ["We can now pay our debts and come to town once more—looking people straight in the face as we did several years ago."—Alex. Gordon.]	80,000,000	3
1899	(Continued organization)	71,000,000	4
1900	" "	90,000,000	4
1901	(Partial failure of organization)	74,000,000	2¾
1903	" " "	120,000,000	2⅜
1904	(Organization abandoned)	75,000,000	—
1905	(Reorganization for one year)	87,000,000	3
1906	(No organization)	95,000,000	*6⅞ to 3¼
1907	(" ")	140,000,000	6 to 1¾
1908	(" ")	130,000,000	4 to 1¾
1909	(" ")	140,000,000	3¾ to 1¾
1910	(" ")	115,000,000	3½ to 2¼
1911	(" ")	120,000,000	— —
1912	(" ") ['Each year finds the raisin market in a more demoralized condition than the previous year. * * * It simply means that the raisin business must be put on a sound business foundation and the goods marketed as any manufactured article is marketed today."—W. F. Pitts]	185,000,000	— —
1913	(California Associated Raisin Co.)	130,000,000	†3¼
1914	" " " "	182,000,000	
1915	" " " "	230,000,000	

*In these ranges of price the average for standard muscats is close to the lower figures, taking into account the bulk of the sales.

†Contract price paid; not including profits belonging to stockholders and growers.

How an Incomprehensible Fact Wrought the Death of a Man.—We have spoken of the hesitation of raisin-growers to act as one man in support of their livelihood as passing strange—yes, even incomprehensible. And this really seems to be about the only baffling problem in the whole situation, for every decently capable organization of the last twenty years has made raisins profitable and every death of such an organization has reduced their value—as already emphasized—and yet some men do not or will not understand.

This is the tenth year since the death of a man was brought about by this baffling problem. When the whole raisin district sank into such depression and depreciation that practically the whole resident community and the leading outsiders who had activities and investments to rescue, came together to make raisins profitable they succeeded by merging all their hopes and interests in the hands of a masterful man. He was not a popular man; so far as he had personal magnetism it was of the repulsive kind; he had no cordiality nor confidentiality; on the other hand he was clothed in mystery—but he was generally recognized as a man of mastery. He forced and led together most discordant elements. He made raisins profitable and he saved the economic life of the community. His name was M. Theodore Kearney and he wrote his own epitaph. Among his papers, after he died, as he had lived, alone, the following was found:

"When the time comes to write my epitaph, the following might well be copied:

"Warning—Here lies the body of M. Theo. Kearney, a visionary who thought he could teach the average farmer, and particularly raisin growers, some of the rudiments of sound business management. For eight years he worked strenuously at this task, and at the end of that time he was no further ahead than at the beginning. The effort killed him."

We do not desire to enter into a discussion of the reasons why Mr. Kearney accomplished no more than he did nor to approve nor condemn the particular plans and methods which he insisted upon as essential to the permanence of raisin-growers' co-operation. We do not know enough of them to discuss them intelligently. But we do know that he was set upon by self-interest, by distrust and suspicion, by petty envy and imputations of selfishness, and the like—all of which are fatal to the leadership of co-operation and destructive to the very inmost spirit of it. Some people knew they could make more if Kearney's combination were out of the way; other people would rather jump back into the publication of Mr. West's prophecy, the growers found out that about the only way they could get a living from their raisins was to eat them.

A Decade of Efforts at Co-operation.—After the initiative at the Fowler farmers' institute, cited above, there ensued a decade of efforts and experiences which would illustrate and establish all the theses one would need in making a volume on the economics of co-operative selling. Such a thing cannot be attempted in this connection and without such analyses, the record of events would be no more interesting nor instructive than much old-fashioned history usually is and we do not undertake it.

To us the experiences following the first effort of the raisin growers at general organization in 1892 and continuing even to the present day, for they are unhappily not yet quite over, are a dreary sequence of great

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the slough from which he pulled them than pay the cost of their salvation; others, still, probably thought the shower was over and they could safely duck out and pound in the ribs of the umbrella which had kept them a dry skin. However that may all be this is true, that when the growers did break up Kearney's mastery of the product, or allowed others to do it, they plunged back into the slough of uncertainty and dissatisfaction. They did not, perhaps, go to the bottom as they had before Kearney began, for every strong co-operative effort begets some permanent advantage, and yet they must have been in up to the neck for raisins fell below the price of potatoes and the raisin acreage was being reduced. Frantic efforts almost annually made to regain the old fair price for producers which Kearney secured yielded little until the formation of the California Associated Raisin Company in the spring of 1913.

An Issue Now Pending.—Through such tribulation as had been faintly outlined the California raisin growers came to the realization of an organization much more competent, efficient and aggressive than ever before realized and it has endured three years—each year assuring a profitable price for raisins, each year addressing itself to new problems in handling and distribution and last year, especially, successfully pursuing an aggressive publicity campaign which is working wonders in causing California raisins to be regarded as a food staple by millions who have not previously thought of a raisin except as fruit-confectionery. Thus it has worked for current prices and for future demand to insure profit for a constantly increasing production which its own success has engendered. It has worked by most progressive methods of commercial organization with a proper producers' confidence in the product and with working capital furnished by the producers. It has gained millions for producers in the profitable price of the raisins and it has also made a small operating profit which shows that as a going concern it is proceeding upon a safe basis. It has had to deal with the most acute men in commercial fruit handling and has used their facilities to its general advantage—no matter what may be claimed that it has not made as sharp bargains in certain respects as perhaps it might. It seems to us that even in these respects it has done wonderfully well as an organization of growers in dealing with those whose occupation it has displaced—men deeply entrenched in lifetimes of experience and possessing almost incalculably valuable vested trade rights and resources. It seems to us that discussion of details as to whether this or that factoring item has been as sharply cut as possible should have no place in determining the continuation of the organization as a general co-operation of producers. The great proposition, as we see it, is this, as stated by Mr. Giffen, president of the association:

"The fact remains that three crops, aggregating 300,000 tons of raisins, have been sold under very trying financial conditions and every grower has received 3¼c or more—a record not equaled since the raisin business has become a factor in our industrial life. And this means, to the raisin-growing district, the difference between prosperity and hard times; between a mortgage paid and a mortgage foreclosed."

To enable it to continue such saving work and to make it safe in the face of increased acreage and crop which its own work has made possible, the California Associated Raisin Company insists that a larger acreage by 15,000 acres must be signed up before April 1 in order that it may proceed in the future, as in the past, to work for the profit and security of all the growers. We do not see how any grower, who is free to act on his own convictions and judgment, can refuse to take this first and fundamental action in co-operation which alone can ensure prosperity and maintain land values in his district, as the experience of a quarter of a century has shown. It seems to us that even present advantage, which a few may think they enjoy, should be made a patriotic sacrifice on their part for the general good—justifying their own business consciences, perhaps, by remembering that in the experience of catastrophes, which have been abundant during the last quarter of a century, these particular advantages, which a man may think he has over his fellow-men, are always first to disappear. No man, no matter how wise or strong or self-reliant, can navigate a special-advantage craft in a flood of general disaster!

A Broader View of the Situation.—But earnestly as we are solicitous for the continued prosperity of the raisin growers on the basis of the demonstration of the last three years, and strongly as we would urge them to provide safety first in their affairs, there are other considerations, involved in their present attitude and action, which seem to us so broad and all-pervading in our agriculture that we are prompted to plead with every man of them to throw his property and manhood in support of the co-operative effort which is now dependent upon fuller support. We ask every such man to think the matter over in this way:

First—price-fixing is the goal toward which all agricultural production must press forward. The farm producer is the only producer who does not fix the price of what he

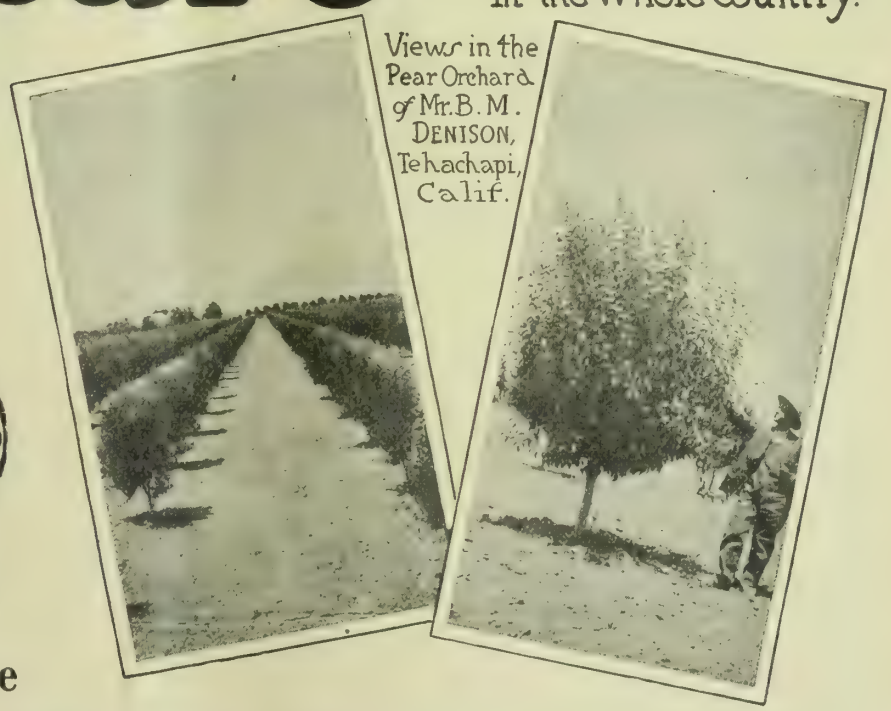
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"Although I gave the orchard the best of attention, I do not hesitate to say that your advice concerning pruning and general cultural directions has had much to do with the uniform, shapely appearance which the trees present today. Experts have pronounced these pears perfect in appearance and exceeding in quality anything which they have ever received from any other section of the country."

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BOX 18——FRESNO——CALIF.

sells, on the base of cost of production and fair reward for his capital and labor. Even such primitive and crude food production as hunting and fishing names the value of its output—but agriculture does not. Even manufacture, based upon farm products, names it price, but farm manufacture does not. The canner puts a ton of peaches in cans and issues his price list: the grower puts a ton of dried peaches in sacks, and says: "What will you pay for them?" This is the traditional attitude of the farmer and he alone can demonstrate his title to more rational industrial standing.

Second—price-fixing can only be successfully achieved, now, by producers who have a special line of production which by limited geographical area and joint action of producers, measurably known to each other, can be controlled. Price-fixing is the ripe fruit of co-operation, which has withstood winds of false doctrine, storms of adversity induced by opposing interests, fierce heat of impeachment and temptation and it comes to full maturity because the twig which bears it is closely and inseparably knit to the deep-rooted tree which has nourished it. Price-fixing is only wise and safe when there is adequate solidarity in the interested group of producers. Effort in this direction must be postponed until such solidarity is attained. The walnut growers have this, the almond growers have this and they have distinctive products achieved practically within the geography of the State and they are profiting splendidly by these advantages which sustain price-fixing effort. The raisin growers' price-fixing control is the greatest fruit of all our co-operating experience and it has demonstrated its reasonableness by its distinguished success after a quarter of a century of evolutionary struggle. If this achievement is made vain by the refusal of a small minority to sustain it and to gather its fruit for themselves and for the State, it will be an agricultural calamity.

Third—price-fixing, the control of which warrants it and the special distinctive product which makes both now possible, are three advantages which can only be made permanent by continuously increasing effort. Special food products are at enmity with staple food products and are engaged in a war of displacement against them. Every pound of specially good distinctive food, such as California nuts and cured fruits, either displaces a pound (more or less) of staple bread, butchers' meat, potatoes, beans and the like, or else adds itself to them and causes the consuming masses to be better fed at an increased cost of living. In either case it is a warfare—against the staple, against the family purse, against the family bank account, or against the family extravagance or waste in other expenditures. This war has to be waged by demonstration of delight and wholesomeness, by suggestion of fashionableness, etc., and achievement of popularity—the 17-inch gun of which is publicity and the munitions the money of the primary producers. No buyer, broker, consignee nor any other trade institution or agency can undertake the cost of such publicity, as a special food product needs to best a staple so that it may live with it or displace it. None of the popular breakfast foods would ever have displaced old-fashioned oatmeal and cracked wheat if it had waited for publicity provided by commercial handlers—that was achieved by the money of the manufacturers. It is just the same with the distinctive food products which California is pressing upon world consumption and in the production of which California has either notable advantage or practical monopoly on this continent. Therefore both price-fixing and control of product, which is essential to it, can never profit most nor, perhaps, even maintain themselves in action, unless the progressively increasing production which they engender is supported by effective publicity planned and provided for by co-operation of producers.

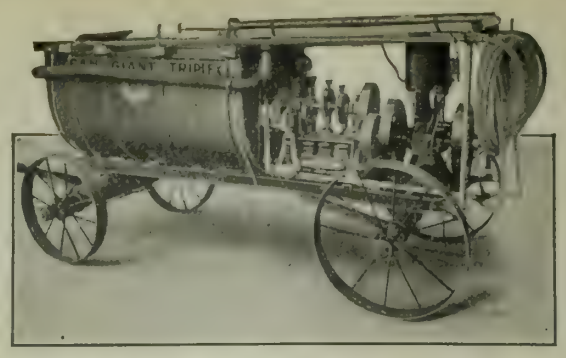
Fourth—For this reason we see in the continued and increasing work of our greatest price-fixing and control organization, the California Associated Raisin Company, not alone the assurance of prosperity and growth to the raisin industry but the foundation upon which the future of all our distinctive products can alone be made profitable and capacious. As we see it, they must all follow in the lines occupied by the raisin growers in their ultimate capitalization, control, distribution and promotion. And of course, as they finally attain to this position of importance, dignity and self-respect, it will be proportionally better for commerce, transportation and all other serving interests and institutions. These special products must be made great and commanding and that can alone be done by co-operating producers.

A Last Word of Appeal.—As this vision of the significance of the coming April clearly confronts us, we are disposed to plead with every man, who thinks he knows a better way to do a thing desirable to be done, to achieve his honorable purpose by his influence within the association and not fritter away his powers by neglect or opposition to it. Even if he should succeed in opposition he would perish in the downfall as did Samson, when he bowed himself with all his might against the pillars of Dagon's temple. And such a man would be denied even the satisfaction of Samson, for he slew more of his enemies at his death than he had slain in all the previous life of him. If a man could pull down the pillars of the beneficent structure raised by the raisin growers he would perish with more of his friends than he could destroy in any other way; he would devastate his community; he would impede the development of his State.

A report from Colusa states that if the weather permits there will be over 18,000 acres planted to rice in that district this spring.

RHUBARB

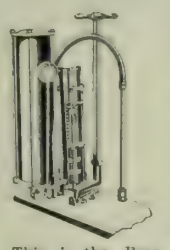
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Placer County Horticultural Notes.

To the Editor: On account of the prices secured for the Diamond plum, this variety is figuring largely in new plantings and in grafting in Placer county this year. Judging by the results of grafting the Diamond in this county, peach stock is not at all satisfactory. They grow very well for a few years but develop a big lumpy union with a deep crack in the bark completely around it and, in many places dying rapidly after five or six years.

A very few plantings are on myrobolan which seem to be satisfactory on the lower or heavier soils. I have heard a little complaint about the myrobolan suckering, but believe the roots in these cases were not true myrobolan.

I have found a few young trees on almond on high land and these have a fine looking union. Also have found a few on apricot which were about five years old and had fine unions. Apparently the apricot root will do well in the drier soils but the gopher must be considered, as this pest is fond of the roots.

The Placer county orchardists would be glad to hear from "Pacific Rural Press" readers who have had experience with the Diamond on various rootstocks.

Edw. O. Amundsen,
Placer County Farm Adviser.

MORE ABOUT STANDARD PRUNES.

To the Editor: In Contra Costa county the Standard prune seems to be a flat failure. Some years ago one of the best orchardists of the county who has always grown a high grade of French prune, grafted in some Standard prunes. Last season he gave personal attention to drying them, picking at different stages of maturity, dipping some slightly and others heavily.

When he sold his French prunes he called the attention of the buyer to several boxes of dried Standards. He looked at them and remarked, "Don't want them at any price. They are just skin and bones."

While the fruit is attractive before drying, and may make a good shipping prune similar to Tragedy (providing there is a market for prunes in September when Standard prunes are ripe), when dried it is a conundrum—a joke.

It is a pity that new fruits should be so advertised and exploited before even preliminary tests are made. Many trees in the county will have to be re-grafted at considerable loss.

I would advise J. A., of Morgan Hill, to plant trees of selected French prunes and stick to things that have been demonstrated a success.

Frank Swett,
County Horticultural Commissioner.
Martinez, Contra Costa County.

SUDAN GRASS.

To the Editor: I have just read in this issue about the Sudan grass. Where can the seed be gotten and how much to sow to the acre? Would it be best to drill this in? If this is put in with a poor stand of alfalfa would it have to be irrigated?—H. D., Woodland.

[Several of our advertisers are offering Sudan grass seed. Write to them. That is what advertisers are for. Sudan grass can be drilled in in 30-inch rows and culivated till it gets a good height; that is the way to get the most growth from the least water. On your poor alfalfa you will have to broadcast and scratch in the seed. Probably you need not irrigate to get considerable growth on good valley land, but you will get more grass with more water. —Eds.]

GRAFTING ON ZINFANDEL.

To the Editor: I have ten acres of Zinfandel wine grapes which I wish to graft to Thompson Seedless, but I have been told that seedless on that root will not bear well. What do you know about it?—E. P. Kingsburg.

[Answered by Prof. Bioletti.]

[Sultanina (Thompson Seedless) grapes will succeed very well when grafted on Zinfandel roots, if the grafting is done properly. The method is described in Experiment Station Circular 115, a copy of which will be sent to any applicant. As the Zinfandel is a much weaker grower than the Sultanina, it is necessary to do the grafting deep in the ground, so that the Sultanina scion can make its own roots.]

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for $1188.00 in payment of my order of Orenco trees. They are fine.
(Signed) G. H. C., Hollister.

AGAIN!

Enclosed find my check for $1067.47 in payment of my order for trees just received
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A Farmer's View of Rural Credits.

To the Editor: I have been reading the articles in your paper about rural credits and would like to advance a few ideas of mine in regard to that much-discussed matter, if you have space for them.

I am 57 years old and have been on a farm all of my life here in California, and with ordinary intelligence I should know something about the conditions that confront the California farmer.

The majority of farmers here are paying interest on mortgages and I think that most people agree with me that the interest is too high, so what are you going to do about it?

It does not help the farmer any to sneer about paternalism and remind him that he is too intelligent and too capable of attending to his own business to need any help from the government.

Right here in my neighborhood are two farmers; industrious, honest and sober, who bought 20-acre tracts a few years ago, made a small payment and tried to work out their homes and who have given up their places and moved out to go to work for wages. Why? Too high interest and too short a time for the mortgage to run. There is no security on earth that is as good as personal real estate. And if these same farmers could have gotten loans at four per cent to run for 10 years, they could have both made good instead of going to join the unemployed.

Speaking of paternalism, I wonder how many people ever stop to think about the example of paternalism that we have in all our towns, even the small ones, in the shape of our national banks, who deposit interest bearing bonds with the U. S. Treasury and draw down 90 per cent of national bank notes which they can loan to the farmer at as high a rate of interest as they can get.

But when the farmer proposes that the government loan money to him on good security at a reasonable rate of interest and on long enough time to give his orchard or vineyard a chance to get into bearing some of his would-be friends start to run around in a circle and shout "paternalism."

I believe in the principle of the greatest good to the greatest number, and it is impossible to help the farmer without helping the merchant, lawyer, doctor, dentist and all others. Also anything that tends to keep the farmer down has a corresponding bad effect on the business men of the town.

I recollect in some of the years gone by, when it looked as if we would not have enough rain to make crops; let there come a good night rain and then go to town the next day and the merchant would be smiles all over. It was not because he had anything to be benefited by the rain, but because the farmer had.

There is hardly a farmer but what could borrow money at four per cent on long term, say one or two thousand dollars, and put it into improvements and make money on it. And that money would go into circulation and help everybody, from the working man up. But if he has to pay eight per cent he is afraid to tackle it.

It is not a case of helping the unwise against his folly, but of loaning money on the best kind of security and helping all of the people of the State by doing it.

This is not intended as a knock against any person's views on this subject, because I respect every man's honest opinion, but it is the way it looks to me after a lifetime experience on a farm.

Reedley. Frank McClellan.

STATE LIBRARY FOR ALL THE PEOPLE.

[Written for Pacific Rural Press by J. L. Gillis, State Librarian.]

The State Library in California occupies a place in the educational development in this State unique in the history of education and of libraries. For many years it has had three distinct purposes.

1. Procuring and making immediately available all books and other library material needed by the legislature and by the State officials.

2. Making the same material available to every resident of California when not in use by the legislature and by State officials.

3. Working out a library plan for the State under which every resident of the State will have equal, economical and complete library service.

In the California State Library the procuring of library material is in the hands of assistants especially trained for the work. Every department in the State's government is kept in mind so that it may be supplied with the latest material on its subject.

Careful attention is given to everything on California history. The indexes to California newspapers and other material are in constant use, and if those people of the State who have donated manuscripts, books, music and pictures could see how often those very things fill gaps in historical records and help the historian and other inquirer, their pleasure in making those gifts to the people would be complete.

The use of documents of all kinds —foreign, United States and State— is become more and more popular means of securing authentic information. For this reason, especial attention is given to completing all sets in this department and in ob-

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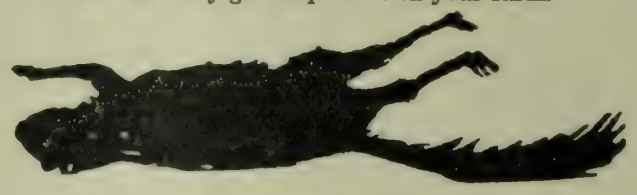
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The trap guaranteed to catch small or large pocket gopher. Being round with thin edges, gopher walks into trap before detecting anything in runway. 100 per cent efficient—catches gopher every time. Far safer and surer than poisons or gas. Farmers say it's worth dozen other makes. PRICE 50c. If your dealer can't supply you, will be sent postpaid; two traps, 95c; six traps, $2.70; twelve traps, $5.10. Money back if not satisfied.
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taining all indices and other aids to the use of the documentary material.

The California State Library has further facilitated its work by adopting the method of making photographic reproductions and loaning what is called a "cameragraph," that being the name of the machine used. This is a quick and cheap process by which the picture of the page is reproduced on sensitized paper, and after being dried can be loaned to the inquirer. This avoids duplicates except when actually needed, means less expense for transportation, saves the original copy from the wear and tear of shipping and keeps it on the shelves for use in any way at any time. The California State Library was the first library to adopt this photographic method and other libraries in the country have recently begun using the method, among them the Library of Congress at Washington, D. C.

The building up of its general reference collection is being carried on rapidly. Books on every known and used subject are purchased, such as history, literature, science, art, books for the blind, medicine, law, books in foreign languages, agriculture, sociology—everything to help the library do its part in the plan of equal, economical and complete library service to the people of the State.

In addition, then, to its first purpose, namely, a library service to State officials,—in order to carry out its second purpose, namely to make itself also available to all the people of the State,—the State Library had to apply itself to working out a plan of adequate library service for the State. The answer has been found in the county free library plan, which has already been adopted by 33 counties in California, and even the most conservative predict will in a few years more cover the entire State.

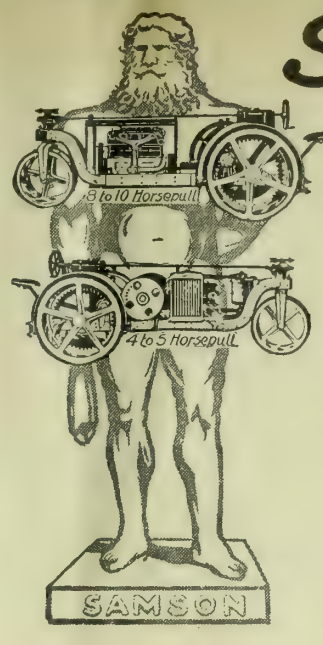
The county free library plan has recently been fully explained to Pacific Rural Press readers. It is a library for all the people of the county, established by the supervisors and is in charge of a trained, exeprienced county librarian. It has branches in every part of the county, and every other library interest in the county may co-operate with it.

The county unit is large enough to raise sufficient funds to support a library by means of a small tax. The small town with a free public library and necessarily with small local financial support, may join the county free library, and in that way furnish the supplemental library service needed by the residents of the town; the county teachers' library and county law library may join the county free library, as may also the school districts, elementary and high, by turning over their funds to the management of the county free library. This unifying county institution then receives not only free supplemental library service from the State Library, but this service free of transportation charges also.

This unifying of library service in the county unit creates such a big saving that the library resources of the county very soon double. With branches in every community—all supported by the county free library—the distribution of library service soon becomes equal and complete. The working out of every detail for economy has been a matter of great admiration on the part of those who have made a careful study of the California library service.

And it has been other States and counties that have marveled at the California library plan. Californians themselves hardly seem to realize what a wonderful system for distribution of books and information has been developed for their use. The credit is due to the California State Library—an institution that is busy every moment working to perfect this unique and successful plan for the education of the people. The Sutro heirs recognized the great work of the State Library when they presented to it the valuable Sutro Library, and almost daily some gift is made, for the people feel that the State Library is theirs and for them perhaps more than any other institution in the State.

An application has been made by a board of trustees of ranchers in Madera and Merced counties for the establishment of a water district that includes 400,000 acres of land in the two counties mentioned. A survey is now under way for the district which contemplates the construction of a large dam for storage purposes and extensive canal systems which will cost $4,000,000 to $5,000,000.



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stands behind each
SIEVE-GRIP
Reg. U. S. Pat. Off. and Foreign Countries
TRACTOR

You want a practical, work-every-day tractor—one that is built right and backed by an experienced and reputable firm.

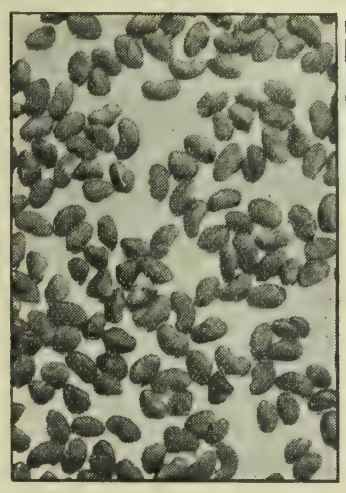
Fourteen Years

of tractor construction have taught the Samson Iron Works how to build *tractors that increase farm profits*

Sieve-Grip tractors are sturdy and simple—their prices are fair—4 to 5 Horsepull, $675 f.o.b. Stockton; 8 to 10 Horsepull, $1150.

Just drop a line to us right now and we'll send you "Samson Siftings" and our latest booklet P. R. 7

SAMSON IRON WORKS, Inc.
STOCKTON, CAL.



1916
SEED CATALOG
Now Ready.

It is free—mailed on request. It tells how and when to plant—garden, flower and field seeds.

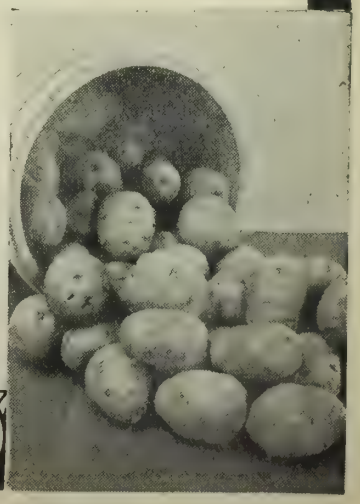
Alfalfa Seed

This illustration is a reproduction of alfalfa seed as taken from sacks in our warehouse. You will note that the seed is plump and free of weeds. We believe we ave the finest stock of alfalfa seed ever gathered together in California. Our **Surprise Valley Seed,** which we consider our best, is absolutely **free of dodder** and all other weed seed, This seed was raised in the extreme Northeast corner of the State—Modoc County—and will produce a hardier and heavier crop than seed raised in a warmer climate. Samples and prices on request.

Seed Potatoes

We now have a fine, true to name, healthy stock of American Wonder, Early Rose and Garnet Chili Potatoes. These are all good, early, standard varieties suitable to California conditions.

Write for prices.



VALLEY SEED CO.
506-508 Jay St., Sacramento
WE DELIVER FREE BY PARCEL POST, EXPRESS OR FREIGHT.



Good Trees mean Good Crops

A cheap tree is a poor investment even as a gift. Our 26 years of experience in operating orange and lemon groves has proven this statement.

After years of care it is a satisfaction to know that your trees have not been a disappointment. People planting

Teague Quality Citrus Trees

are never disappointed. They have stood the test of a quarter century's profitable cropping wherever the orange and lemon is grown commercially.

You want this sort of tree; can afford to plant no other. Our experience is at your service; a copy of our book "Principles and Practices of Citrus Culture" is yours, if you will tell us your wants; our prices are the lowest for the best trees that can be produced.

SAN DIMAS CITRUS NURSERIES
SAN DIMAS, CAL.

Pull Stumps Now.

[Written for Pacific Rural Press.]

Those having fields containing stumps, which have been plowed around in years gone by, should take advantage of the present condition of the ground and get them out before another season has passed, as increased yields from such land make stump pulling profitable. With the ground moist, as at present, the roots come out cleanly and easily, a factor which has much to do with the cost of clearing land.

As an indication of the progress which has been made by manufacturers in stump pullers, it is interesting to note the record of C. A. Hines, of Washington, who, though crippled by the loss of one arm, has pulled and piled, ready for burning, two and a half acres of big tap-rooted fir stumps in 24 working days. As this was done with a hand power puller and without the use of power, other than his one arm, it seems pretty well demonstrated that modern day stump pulling is not the difficult task it was a few years ago; also, that there is much stump land, now practically worthless for field crops, that can be put in condition to yield good crops with but a slight first cost for clearing.



C. A. Hines at Work with His Stump Puller.

HOW TO IRRIGATE BEETS.

To the Editor: I have 100 acres to irrigate, and about 800 gallons of water per minute. Some of the land, one-half mile from the well, is said to take up water very readily. Most of the land goes into sugar beets. The land has a gentle slope from the well and the water has to be raised 95 feet. I want to know the best and most economical way of getting this water over the land.—Z. T., Sunnyvale.

[Answered by Prof. S. H. Beckett, University Farm, Davis.]

[You will find the methods of preparing, seeding, irrigation, etc., completely described in Farmers' Bulletin No. 392 on the Irrigation of Sugar Beets.

With the conditions you describe, that is, a light sandy soil with a gentle slope, it is probable that the furrow system of irrigation may best be applied, the length of the furrow being in the neighborhood of 330 feet. In this case your field would have to be crossed by a series of parallel delivery ditches spaced 330 feet apart. With a light sandy soil you will probably have difficulty in getting a full discharge of 800 g.p.m. through the open ditch without losing a large per cent through seepage. It is probably advisable for you to use either an open timber flume or galvanized iron slip joint pipe in carrying the water from the well to the distant fields. If the land between the wells and the field to be irrigated has considerable grade an 8-inch diameter pipe will suffice. If, however, the grade is very flat the size of the pipe would have to be increased to at least 10 inches in diameter.]

RULE FOR MEASURING WATER.

To the Editor: Please give me the rule for measuring a stream of water. —W. H. P., Pozo.

[Answered by Prof. S. H. Beckett, University Farm, Davis.]

[The most satisfactory method of measuring a stream of water such as you describe is by the use of the Cippoletti weir. A bulletin in which the method of installation of the weir and the method of making the measurement is completely described may be obtained from the Director of the College of Agriculture at Berkeley. In this bulletin you will find that the measurements are given in cubic feet per second. If it is found desirable to reduce this to customary miner's inches simply multiply the number of feet per second by 50. If on the other hand it is desired to obtain the measurement in gallons per minute, multiply the cubic feet per second obtained in the weir measurement by 450; 450 gallons per minute being equal to one cubic foot per second.]

WHY QUAIL SURVIVE SQUIRREL POISON.

The experiments of the California Fish and Game Commission show that poisoned barley as used for ground squirrel eradication does not cause death of California Valley quail under natural feeding conditions. They may be fed under natural conditions relatively large amounts of strychnine sulphate without showing toxic symptoms. The minimum killing dose by subcutaneous injection is four milligrams per 100 grams of body weight.

The California ground squirrel is very susceptible to strychnine sulphate; one-tenth of a milligram per 100 grams of body weight produced convulsions.

R. D. Robertson is planting 20 acres of almonds on his ranch near the Buttes in Yuba county.

TREES

High Class
Fruit and Shade Trees
Grape Vines
Etc., Etc.

Kirkman trees will please you and give you good results.

We are wholesale growers of all standard commercial varieties:

Heavy surplus in Peaches, Apricots, Pears, Prunes, etc., etc.

Orders shipped same day received.

Send us your list of stock needed for quotation.

Catalog on application

Kirkman Nurseries
Main Office
2523 Tulare Street,
Fresno, Calif.

Bartlett Pear
On Blight-Resistant Roots

There never was a more favorable time for Pear planting, but be sure your trees are planted on Japanese Roots. We have given this root a through test for over five years, and discarded all others in its favor.

All our trees are propagated from trees selected for their bearing qualities and grown in the granite soil in the foothills of the Sierra Nevadas, assuring a fibrous root system second to none in California.

Write for catalogue and full list of trees.

UNITED FRUIT COMPANY
Shippers,
Orchardists, Nurserymen.
Newcastle, California

Market Aspect of Tepary Beans.

To the Editor: In your issue of February 5 I note an answer to an inquiry in which you state that teparies are being sold in California at one cent a pound less than the small whites. Would you be so kind as to give me the names of those who are handling the tepary beans. Ever since the introduction of the tepary bean in Arizona by Professor Freeman of the U. of A. Agricultural Experiment Station, our main difficulty has been the market question. We have been giving this matter considerable publicity for the last two years, and feel that we are now at the point where this bean should be standardized on the market on a par with other beans. The fact that this bean has a very high food value and will produce a large yield with less moisture than is necessary for other beans makes it extremely valuable for many sections of California and Arizona. In an effort to standardize the marketing of this bean and secure for it a regular place on our bean markets, we are endeavoring to get all the information possible. Any information, therefore, that you can give me on this subject will help not only growers in Arizona but those in California. **Stanley F. Morse,**

State Leader, Extension Service, University of Arizona.

Tucson, Arizona.

[We are not aware that anything systematic has yet been done for teparies and discussion of selling experiences would be very interesting. —Eds.]

MORE WORK IN A SIX- THAN A SEVEN-DAY WEEK.

To the Editor: A year ago my brother picked prunes thirteen successive days. The first day, Monday, he picked fourteen boxes, and less each succeeding day to the second Saturday. The second Sunday he rested. Monday he picked as much as the first day, and in the first three days of the third week he had picked as much as in the first four days of the second week, that is, the seventh, eighth, ninth and tenth days which he had worked without a rest. I would be interested to know if some of your readers have any facts and figures to show that men can do more work in six-day weeks than in seven-day weeks, and would like to use in my school work any information which might come through your paper. **Harry F. Stone.**

Berkeley, 2327 Bancroft Way.

[Who has figures from actual records on this point from any kind of farm work?—Eds.]

A SUGGESTION ABOUT LIME.

It is very interesting to learn of the great benefits being realized from the use of lime in our California soils.

The idea has prevailed for many years that our soils did not require the addition of this element, that they were well supplied with it. This idea is being rapidly changed by the results from proper use of lime in some form—"The proof of the pudding is in the eating."

The beneficial use of lime has been fully demonstrated in most sections of the State, especially so in the citrus sections, the orchard, alfalfa and delta districts.

Many soils are rich in plant food, if it be put in available form as lime will do. Many soils require lime element that has been leached or farmed out of them.

The labor saving alone often pays for lime used on heavy clay and adobe soils—to loosen them, to say nothing of the greatly increased crop.

The table grape man reports that his yield is heavier, the berries better colored and more firm—the peach and prune man says his trees make better growth, produce more and better quality of fruit. In many cases the orange grower reports curing his trees of yellow leaf. There is no question as to getting better value out of fertilizers where lime is properly used.

It is astonishing the interest being shown and good being realized by use of lime among fruit growers of Placer, Napa and Sonoma county districts; also the alfalfa and fruit men of the San Joaquin Valley sections.

The ground limestone and agricultural hydrated limes are now being sold at prices that are readily within reach of the farmer and fruit grower, and if his soil is in need of lime, he cannot afford to not use it. If he cannot put on at one time all of the lime his place requires, lime part of it, make a beginning: learn what lime will do for you as soon as possible. If it will give you a better crop and soil conditions, the sooner you get at it the better.

Nursery exports as well as imports from Fresno county fell off 50 per cent during January as compared with the month of January, 1915, as a result of the heavy rains all over the State. There are 75 nurseries registered in Fresno county this year.





John Deere Plows for Light Tractors
For Orchard and Vineyard

Practical—work with any standard tractor. One-man outfits—controlled by man on the tractor.

No levers—one reason why these plows work so successfully. Plows leveled and depth regulated by screw device. Can be run close to trees and vines without injuring branches.

High and Level Lift—Pull the rope and all bottoms raise high and level. Another pull lets them down.

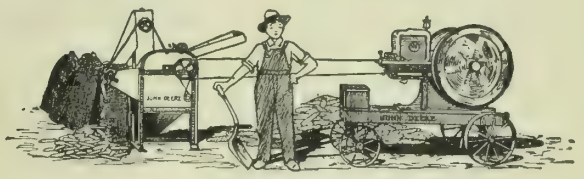
Plows raised in fourteen inches ground travel. Make square headlands.

All bottoms raise high like a double bail, high lift horse plow. You know from experience what this means. Plows do not clog or gather trash on the turn.

Extra wide and semi-floating front truck.

Equipped with either three or four famous John Deere 12-inch bottoms with Quick Detachable Shares—the shares that can be taken off and put on in one-fifth the time it takes to change bolted shares.

Write us for free booklets telling all about John Deere Light Tractor Plows for orchard and vineyard work, or Light Tractor Plows for regular field work—the plows with Quick Detachable Shares, high and level lift.

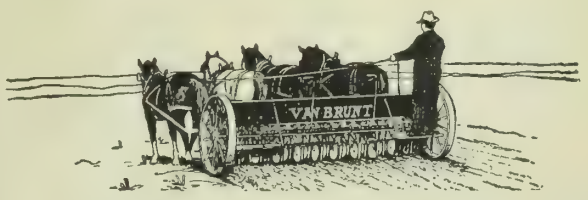


R. & V. Engines
Dependable Farm Power

"R & V" Triumph—always develops rated horse power—made in 1, 1½, 2½, 4, 6, 8,10, 12, 16 and 20 H. P. sizes, stationary and portable.

Easily started; perfect speed control (speed can be varied 40 per cent without stopping engine). Complies with insurance regulations. Hopper cooled—a simple, efficient system that does not require long pipes and numerous fittings.

High grade throughout. Inspect the extra guard ring over piston pin to prevent possibility of scoring cylinder. Ask about the "R & V" oscillating magneto. Write for free booklet.



Van Brunt Drills
With Adjustable Gate Force Feed

THEY plant any small seed, alfalfa to bearded oats, peas or beans. Quantity per acre easily regulated merely by shifting feed gauge levers.

All the ground planted without wasting seed. The Van Brunt adjustable gate force feed and special agitator in the hopper compel seed to leave hopper in even, continuous streams.

An even stand of grain is certain. Pressure springs compel discs to make furrows of equal depth and seed is protected until it reaches bottom of furrow. Single or double discs. Write for free booklets.



John Deere Disc Plows for Tractors
For Field or Orchard

MADE especially for use in the West. Work successfully in every soil where a disc plow should be used.

Plow anywhere from five to twelve inches deep.

One-man outfits—controlled by man on the tractor. Work with any standard tractor.

Can be used either for field or orchard work simply by changing the land axle.

All levers down close to plow when at work—plow can be operated close to trees and under limbs without injuring them.

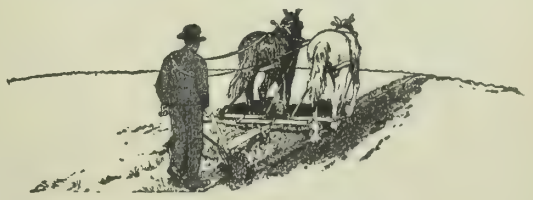
Easily transported—special lever at the rear for lifting discs high and level.

Over fifteen inches clearance under beam; twenty inches between discs.

Twenty-four or twenty-six-inch discs with chilled metal bearings—constructed so that bearings do not drag along wall of furrow when plowing deep.

Can be reduced to four discs by taking off one intermediate section and telescoping connecting rods.

Write for free booklets describing the John Deere Tractor Disc Plow No. 10 for field work and No. 11 for orchard and vineyard.



John Deere Syracuse Plows
The Plows with Perfect Fitting Parts

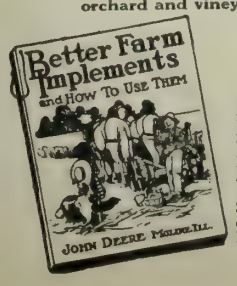
SYRACUSE chilled shares fit perfectly—extra shares go on easily. Share draws up snugly to its place—a smooth joint formed always.

Syracuse 601 Series, wood beam, sloping landside plows are superior for general purpose work in light soils—the 16 Series, wood beam, with side shifting clevis, for hillside work.

Syracuse J-gang plows, three bottoms, are especially satisfactory for vineyard and orchard work.

Write for free booklets. Also ask about Syracuse non-cloggable spring tooth harrows.

John Deere Dealers Everywhere



Better Farm Implements and How to Use Them

BOOK FREE—168 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars. Describes and illustrates: Plows for Light Tractors; Steel and Chilled Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Lister Plows and Cultivators; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain Wagons; Teaming Gears; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders, Stackers, Sweep Rakes, Mowers, Self-Dump Sulky and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills and Seeders; Grain Binders; Corn Binders; Gasoline Engines. This book sent free to every one who states what special implements he is interested in and asks for Package No. X-152.



John Deere, Moline, Illinois

General Agricultural Review.

DECIDUOUS FRUITS AND NUTS.

A dispatch from Capay valley says that the prospects for a good almond crop in that section are excellent at this time.

J. W. Hayes has purchased 12 acres of land near Windsor, Sonoma county, which he will plant to prunes this spring.

A tract of 135 acres near Stoney Creek, Glenn county, will be planted to almonds and alfalfa this year by Sacramento and Orland men.

The Garden Grove Walnut Growers' Ass'n has finished work on the 1915 crop, having sold 347,900 pounds of nuts the past season.

Nevada county pears will be known as "Blushing Bartletts" hereafter, the idea being to build a reputation for Nevada county pears similar to the Sunkist brand of oranges.

Careless methods by those owning apple trees in the city of Watsonville is said to be spreading disease among many of the orchards of that vicinity.

There are some 40,000 acres of deciduous fruits, bearing and non-bearing, in San Bernardino county, according to Horticultural Commissioner J. P. Coy.

Growers of deciduous fruits in the vicinity of Corona are agitating the erection of a co-operative cannery. It is not expected that the plant will be ready to handle this year's crop.

All of the Southern California locals of the Cal. Cured Fruit Exchange have withdrawn from the State organization according to Hugh Knight, Sec'y of the Lake Elsinore Cured Fruit Association.

At the annual meeting of the Sebastopol Apple Growers' Union last week it was decided to enlarge the packing house at Graton. All members of the board of directors who served last year were re-elected.

The success that has been attained by the California State Walnut Growers' Ass'n during the past few years is directly attributable to standardization, according to H. Zander, traveling representative of the association.

According to Horticultural Commissioner L. H. Day, there will be more than 1,000 acres of fruit planted in San Benito county this season. To date 25,760 prune trees, 12,625 pears and 12,175 apricot trees have been inspected.

According to advices from Oakdale, orders for the 1916 crop of almonds are already being received by the local branch of the California Almond Growers' Ass'n, although the price for the 1916 crop has not as yet been fixed.

The following shipments of fruit trees were received in Butte county during January, according to Horticultural Commissioner Earle Mills: Almond, 16,962; pear, 7,196; prune, 5,320; peach, 2,015; orange, 1,400; grape vines, 743; apple, 653; cherry, 102.

The general prosperity throughout the east, together with a lower rate on California fruit shipments to southern States, will make the coming year a prosperous one for fruit shippers, according to H. W. Adams of the California Fruit Distributors, who has just returned from a trip through eastern states.

CITRUS FRUITS.

The Pomona Fruit Growers' Exchange recently packed part of a car of lemons for shipment to Honolulu.

The six packing houses in the Pomona district have been shipping 20 to 25 carloads of oranges weekly recently.

Six carloads of oranges were shipped from the Orland project this year, which is the largest amount shipped from that section to date.

An average of nearly 40 cars of oranges and lemons were shipped from Riverside last week and the 1,000 mark for the season will soon be passed.

There is $250,000 invested in pre-cooling plants by members of the San Antonio District Fruit Growers' Exchange according to its manager, P. J. Dreher.

A $75,000 plant to furnish condensed ammonia for pre-cooling oranges as well as for ice making, is nearly finished at Redlands by the Union Ice Co.

A citrus grower marketing outside the Exchange is like a boy on a bicycle who hangs onto an automobile, says Wm. Bristol of Highlands. He gets there just as soon.

The Indian Hill Citrus Ass'n of North Pomona started testing ammonia pipes and machinery Feb. 11 for their newly completed pre-cooling plant, according to Manager F. W. Knight.

Individual tree records of production are being kept on 40,000 trees belonging to J. S. Edwards near East Highlands, according to his orchard manager, J. C. Perry. This is the second season's records.

N. Wilson of Ontario shows records of having cleared nearly $14 per day for the week ending Feb. 5, after all feed and expense bills were paid, by marketing the eggs of 850 Leghorn hens kept in his orange orchard.

Some 15 citrus orchards in the Upland-Ontario district are co-operating with the Riverside Experiment Station under supervision of Professor Vail in keeping cost accounts and furnishing complete details of orchard management.

"I haven't cultivated my orange orchard in three years, and won't if I can avoid it," says R. S. Thompson, manager of the Highlands Exchange Ass'n. He uses limestone, summer and winter cover crops, and commercial fertilizers, but no manure. His fruit is about the best in the valley.

P&O

Sunset Vineyard Plow

The P&O No. 4 Sunset Vineyard Gang Plow is a small three bottom plow adapted particularly to use in orchards and vineyards. It has a narrow wheel tread and the levers are arranged so that they do not interfere with the overhanging vines or branches. It's the Way We Build Them.



High carbon steel beams with ample clearance in throat, and rigidly braced to each other. Wide lateral and vertical range of hitch adjustment. 18-inch wheels with 3-inch tires, dust-proof boxes and large hub grease cups. One lever raises and lowers plow and the other regulates depth. A heavy spring assists in raising and lowering bottoms. When the plows are in the ground the levers lay down close to the beams out of the way. A steel handle is attached to rear beam for lifting rear end of plow. Bottoms are 8-inch with soft center steel mold, and steel or cast share. One extra share is furnished. Also a 3-horse steel evener.

Ask Your Dealer or Write to Nearest P & O House

Parlin & Orendorff Co.

Canton, Illinois.

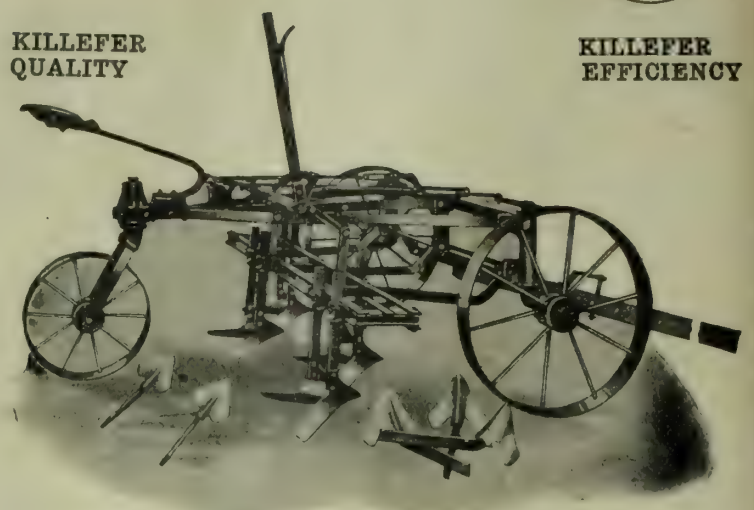
General Agents for California: Baker & Hamilton, San Francisco; Dixon & Griswold, Los Angeles.

P&O Light Draft Plows Are Backed By An Unqualified Guarantee

Beet Cultivator (K)

KILLEFER QUALITY

KILLEFER EFFICIENCY



The frame of this Cultivator is made of one continuous piece of high carbon steel with a truss connecting it to the main castings, supporting the two steering wheels. This construction makes a cultivator that is almost impossible to break down in the center and in consequence the wheels are always in line and under easy control.

The lower frame or tooth bar is from the same quality of steel with a strong arm at each end, which connects with the lifting rod, allowing no chance for the frame to dip or run deeper at the ends. The seat is set back far enough to give an unobstructed view of the rows. The foot control of the front wheel that holds it rigidly in line except on the turns. This is very easy on the operator. A lock is provided for the rear wheels that holds it rigidly in line except on the turns. This is the **strongest** and **best made** Beet Cultivator for sale on the Pacific Coast.

The Killefer Manufacturing Co.

2209-21 Santa Fe Ave. Los Angeles, Cal.



WON HIGHEST AWARD AT SAN FRANCISCO EXPOSITION

International Harvester Wagons—Weber—Columbus

THERE are a few points about the new **Columbus** and **Weber** wagons that every farmer ought to know. These points make the difference between **Columbus** and **Weber** wagons and others—a difference that means a good deal to you.

The fifth wheel, that prevents the pulling up and pitching of the bolster, makes it easier for your team to pull a **Columbus** or **Weber** wagon and does away with bent and broken king pins and circle irons. The patent folding endgate and the link end rods save much of your time in the busy season. The high-grade wood, iron, steel and paint used add years to the life of **Columbus** and **Weber** wagons. These things mean economy.

These points are explained in detail in our wagon folders and are pictured so plainly that it's almost like looking at the wagon itself. Some dealer near you handles these wagons and has samples set up for you to see. Drop us a line and we'll send you the booklets and folders. We'll also tell you where you can see a **Columbus** or **Weber** wagon so you won't have to waste any time looking for it. Write to us today.

International Harvester Company of America

(INCORPORATED)

Crawford, Neb. Denver, Col. Helena, Mont. Portland, Ore. San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

The lemon packing house of the Pomona Fruit Growers' Exchange is shipping lemons as fast as they can pack. They sold a carload Feb. 10 at $3.90 per box for the extra choice and $3.60 for choice, according to J. E. Adamson, who has charge. Last summer lemons wouldn't sell at half the price. The war has reduced shipments from Sicily and has made the East more able to buy lemons.

A machine is being perfected by a Redlands man which will stamp the brand on oranges with steel dies and ink. The machine is electrically operated, the electricity also being used to dry the ink. If successful it will do away with paper stamps.

Acreage of bearing oranges by districts in San Bernardino county according to Horticultural Commissioner J. P. Coy, is as follows: Redlands 8285, Rialto 4907, West Highlands 4100, Ontario 3392, Upland 3140, Colton 2707, Highland and East Highlands 2640, Cucamonga 1979, Crafton 1555, Etiwanda 300, Chino 85, plus small lots making a total of 33,390 acres bearing oranges. The 1915 production was 11,802 carloads.

VINES AND GRAPES.

All stores in Fresno and in several of the adjoining towns will be closed February 17 for the purpose of aiding in the securing of members to the California Raisin company.

According to James Madison, general manager of the raisin company, the government reports just issued show the December exports of raisins totaled 6,435 tons, a larger figure than ever before exported in one month from the United States. Ninety per cent of these exports went to Europe, according to Mr. Madison.

One of the largest packers in the State is reported to be buying the 1916 crops of raisins in the vicinity of Arbuckle on the following terms: Thompson Seedless, $150 a ton; Sultanas, $140 a ton and Muscats $100 a ton. This is almost fifty per cent more than was offered last year by the same buyers. It looks very much like the old system of fooling the grower with high prices one year in order to keep him from co-operating.

Eight of the most prominent farmers in the Fowler district headed by H. W. Wrightson were out canvassing for the California Raisin company last week and nearly 1,000 acres were signed up. The committee got 14 farmers to sign up who have never been members and Mr. Wrightson states that the committee expects to go over the territory again before long. It might also be said that the peach growers are also canvassing the Fowler district and are meeting with success in their efforts.

GENERAL FIELD CROPS.

By developing the springs on their ranch near Paso Robles the owners of the Fair Oaks Ranch expect to grow some alfalfa on low pieces of ground.

The Balfour Guthrie company are reported to be putting their 10,000-acre holding in Imperial valley in shape for the planting of long staple cotton this year.

State standardization of berry boxes is under consideration. The proposal comes as a result of competition in measurement instead of price at present.

Hay is being shipped from Chico and other Sacramento valley points to Oregon, Idaho and Nevada where the hay supply has failed, according to a dispatch from Chico.

EXHIBITORS AT NATIONAL ORANGE SHOW.

[Written for Pacific Rural Press.]

That an orange show should turn down exhibits for lack of space is as unusual as it is usual for them to have to pad the exhibits, even at world's fairs. Yet when the Santa Paula Chamber of Commerce wanted to send two carloads of fruit to the National Orange Show at San Bernardino Feb. 17-24, they had to be refused more than a very small proportion of that space, though this is their first exhibit at the show, according to Sec'y Miss G. V. Farmer.

All the space for feature exhibits had been taken Feb. 8 and only 20 feet of display space remained for the several communities who were still talking about it. Miss Farmer says there is a greater spirit of competition and more money being spent on exhibits than ever before.

Lindsay, which won sweepstakes last year on oranges and was slow about getting into the game this year, already had her 100-box exhibit space nearly ready for the fruit on the date above mentioned, and the feature nearly ready.

Carpinteria, which took sweepstakes on lemons last year with "the finest lot ever displayed," is to have keen competition at this Show with Corona and Etiwanda.

Following is a list of the communities, etc., as given us by Manager Renfrew, which are exhibiting competitive fruit for quality: Orange County Associated Chambers of Commerce, Colton, Highland, Etiwanda, Rialto, Lindsay, Fontana, Riverside, Corona, Mutual Orange Distributors, Redlands Chamber of Commerce, Carpinteria, C. D. Hubbard Fruit Co., Santa Cruz county, Chas. Galletley.

Feature displays are by the San Bernardino Water Commission, Redlands, San Gabriel Valley, Mutual Orange Distributors, Santa Fe Railway, Pacific Electric Railway, Colton Chamber of Commerce, Lindsay, Fontana Chamber of Commerce, San Bernardino county, and Riverside Chamber of Commerce.

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444 Market St., San Francisco. CHEMICAL and BACTERIOLOGICAL ANALYSES, SOILS, WATERS, FEEDS, DAIRY PRODUCTS.

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GROUND CARBONATE
AIR-SLACKED.
HYDRATED LIME.

One Ton Hydrated Lime Equals 2 Tons Gr. Carbonate.

BOOKLET FREE.

Pacific Lime & Plaster Co.
Monadnock Bldg., San Francisco

JAPANESE ROSE BUSHES



Five for 10cts.

The Wonder of the World

Rose Bushes with roses on them in 8 weeks from the time the seed was planted. It may not seem possible but we Guarantee it to be so. They will BLOOM EVERY TEN WEEKS Winter or Summer, and when 3 years old will have 5 or 6 hundred roses on each bush. Will grow in the house in the winter as well as in the ground in summer. Roses All The Year Around. Package of seed with our guarantee by mail, only Ten Cents.
Japan Seed Co. Box 267 South Norwalk, Conn.

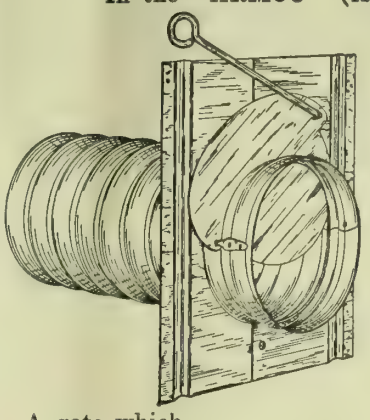
Cheap, Temporary Irrigation Gates are the DEAREST Kind You Can Install

The irrigation season is about to commence.

So are the troubles of the irrigationists who install temporary, inefficent gates in their work.

DO YOU KNOW that for a comparatively small outlay you can eliminate all annoyance and expense formerly caused by leaky, clumsy gates?

In the "ARMCO" (American Ingot) IRON



4-C Irrigation Gate

you are offered an **ECONOMICAL** and **PERMANENT** solution.

A gate which

IS FOR ALL PRACTICAL PURPOSES WATER-TIGHT.

CAN BE USED SEASON AFTER SEASON WITHOUT REPAIRS OR REPLACEMENTS.

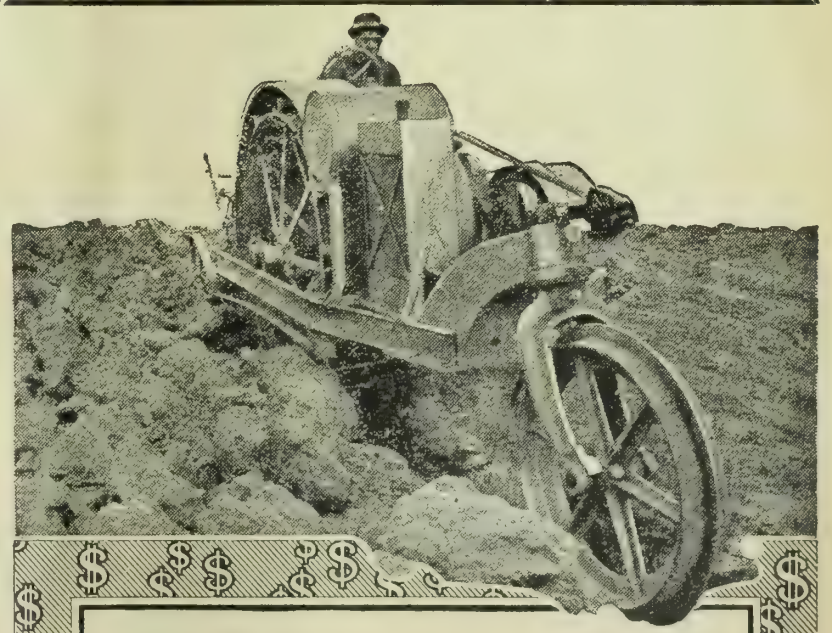
DOES NOT WASH OUT.

WILL GREATLY DECREASE THE LABOR OF IRRIGATING. Write us for further particulars.

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From Sun-up to Sun-up

BIG BULL works all the time, will plow 8 to 9 acres in 10 hours at half the cost of horse-flesh; doesn't have to rest; not affected by the heat or cold. The moment you stop, the expense quits. **BIG BULL** has power to run a 7-inch centrifugal pump.

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THE BULL WITH THE PULL

Mechanical Power on the Farm.

FIGURING TRACTOR POWER.

To the Editor: In the issue of the Pacific Rural Press dated January 8th, 1916, there appears upon page 37 an article entitled "How to Figure Tractor Horse Power." The diagram shown in connection with the article is a very good and useful one, being apparently correct to within ½ of 1 per cent which is quite accurate enough for the purpose intended.

The article, however, as it is written, is not only misleading but contains statements which are manifestly unfair. First, at the bottom of the diagram appears the legend: "Horse Power of Tractor." This should read: "Drawbar Horse Power of Tractor."

Second, the formula appearing in the second column is evidently through a misprint given wrongly. It is not necessary to point out to you that it should read as follows:

$$\frac{PxSx5280}{33{,}000x60}$$ equals Drawbar H. P.

Third, throughout the article there is evident confusion between the horse power of the tractor and the horse power of the motor. These are two quantities which are entirely separate and distinct, as the horsepower of the tractor, or drawbar horsepower, is usually from 50 to 70 per cent of the brake horse power of the motor, the difference being due to the power absorbed by the transmission and in moving the tractor over the ground. The chart should not be used in connection with the rated horsepower of the tractor, for in most all cases tractors are rated according to the brake horsepower of their motors, though sometimes both brake horsepower and drawbar horsepower are indicated in the rating, as, for instance, when a tractor is rated at 75/40, where the first figure refers to the brake horsepower and the second to the drawbar. That the article in question has confused these horsepowers is shown by the example given in the second column, in which one is directed: "Find the vertical line which corresponds to the horsepower rating of the engine or motor."

This should read: "Find the vertical line which corresponds to the drawbar horse power of the tractor."

Fourth, another serious and self-evident misprint is in the latter part of this example, where the instructions continue:

"Then follow the intersecting horizontal line to the left, obtaining the drawbar horsepower delivered."

This should read:

"Then follow the intersecting horizontal line to the left, obtaining the drawbar pull of the tractor."

Fifth. The editor's note at the end of the article is misleading indeed to a tractor user. The part of the note we have reference to is as follows: "If one has a tractor of known horsepower and wants to pull a load four miles per hour on a level road, he could figure how much of a load is possible."

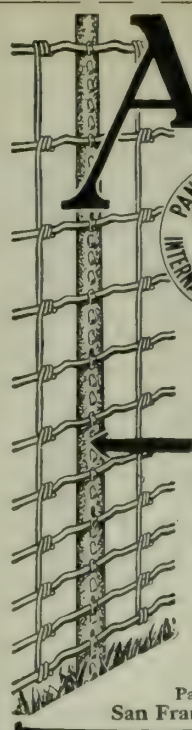
This statement is very apt to be misleading unless the tractor owner can distinguish between the actual tonnage drawn and the pull in pounds required to handle the tonnage. For instance, a tractor of 40-drawbar horsepower will easily haul under favorable conditions about 20 tons, although the drawbar pull while handling that load would be only about 6500 pounds.

The chart is such a good and useful one that the writer is very anxious to see it again published with the article re-written so as to enable a tractor operator to handle the chart intelligently and to avoid falling into the errors which have been pointed out in this letter.

I want to assure you that this letter is written, not for the mere sake of criticism, but because of the very excellence of the chart and also because we feel quite certain that you would want us to point these things out to you. C. Parker Holt.

COMMENTS BY THE AUTHOR, WM. KRITZER, SAN FRANCISCO.

When a farmer purchases a tractor he is not concerned in the stationery engine or motor horse power, but



American Fence and Steel Fence Posts

AWARDED PANAMA PACIFIC GRAND PRIZE INTERNATIONAL EXPOSITION

Big, full gauge wires—full weight—full length rolls woven with a mechanically hinged joint. Superior quality galvanizing—proof against hot sun, sleet and snow. American Steel Fence Posts, cheaper than wood and more durable. Last a lifetime. Hold fence secure against all conditions.

Sent Free Write for booklet on how to set posts and erect fence. Every farmer should have it.

Dealers Everywhere

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SPRAY PUMPS OF ALL KINDS, SPRAY NOZZLES, HOSE, and SPRAY GOODS.

Pumps for Every Service and Use, Gasoline Engines, Wind Mills, Tanks, Pipe, Pipe Fittings, Brass Goods.

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They do more thorough cultivation, quicker, cheaper, with less labor and bigger results than any similar tools. Fully guaranteed.
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Describes over 70 tools, including 12 entirely new ones, and many improvements.
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ONE MAN DOES IT ALL. OPERATES FROM PLOW.

To be Sure of Getting your crops in you must have a "Steel Mule."



PULLS the Load of more than 12 horses, operating any belt machinery requiring from 1 to 30 H. P.

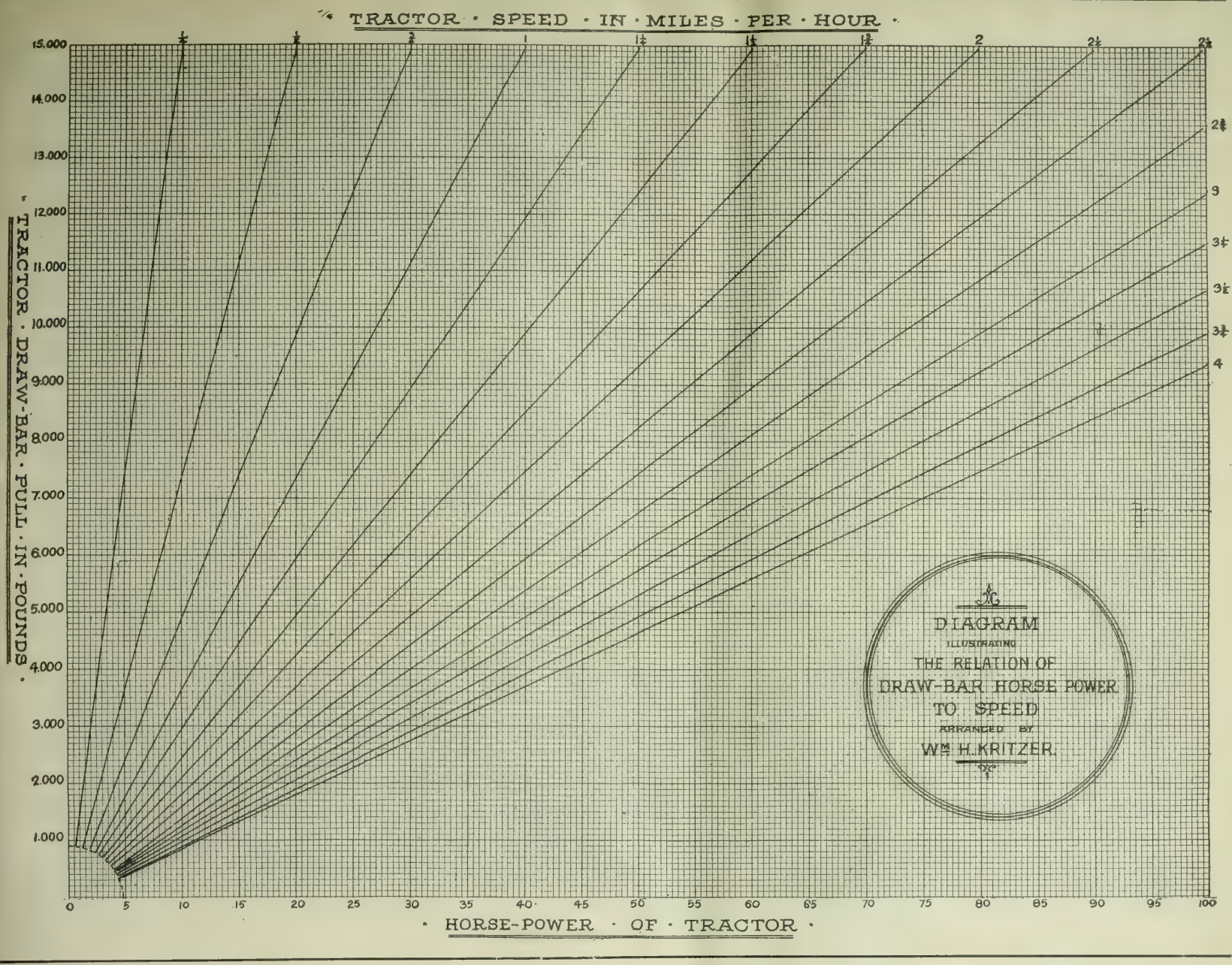
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The Most Wonderful Tractor that Money Can Buy - - - $1150 f. o. b.

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in what it will do on the drawbar pull, the other being a secondary consideration.

The paragraph under chart "Horse Power of Tractor" is merely to designate and make clear the horse-power-rating figures that appear just above it, as it is self-evident the information in circle on chart corner should give the reader a plain understanding of what it is to be used for.

The second criticism was taken care of in your issue of January 22 and was a typographical error in my article.

Regarding the third criticism, would say that the article could have been more specific and have stated the drawbar horse power rating of traction engines. Quite often a tractor is only mentioned as an engine, or farm engine, and appears in manufacturers' catalogs that way.

Mr. Holt is correct in his fourth criticism, but on left side of chart in large letters it states what the result obtained will be—"Tractor Drawbar Pull in Pounds."

VERTICAL PIPE NOT JUSTIFIED.

To the Editor: We are lifting water to a height of 37 feet, through pipe 160 feet long laid on an incline. Would there be anything gained by having a 37-foot vertical pipe instead and would it be worth the expense to make the change?—H. B., Santa Ynez.

[Answered by J. B. Davidson, Prof. of Agr. Engineering, Univ. Farm, Davis.]

In pumping water through a pipe to some distance, there is not only the vertical head due to lifting the water to be overcome, but also the friction head due to forcing the water through the piping. It would not make any material difference whether the pipe was raised at the pump or not. The friction head varies not only with the size of the pipe but also the length and rate of flow.

Under the circumstances the change suggested would not justify the expense.

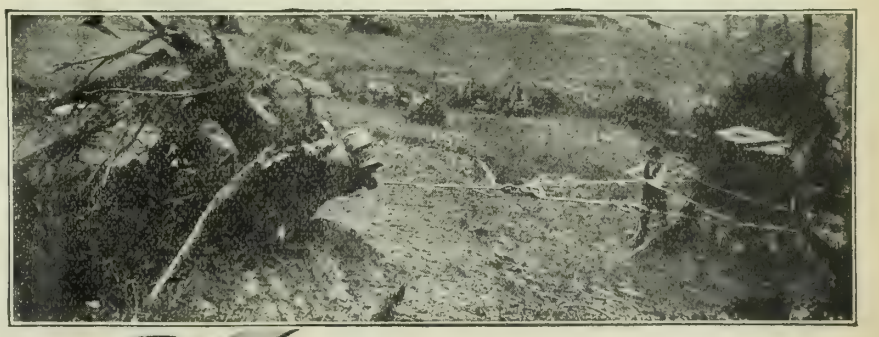
FERTILIZING VALUE OF BEAN WASTES.

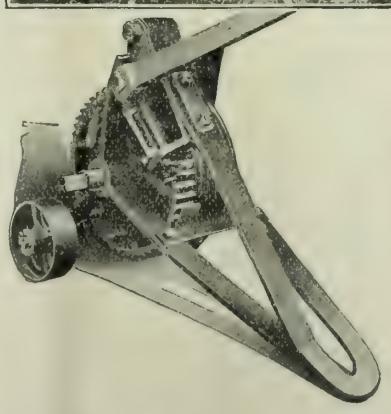
The Ventura Farm Bureau remarks that although the greatest value of either the lima or the blackeye straw as a fertilizer comes from the resulting humus the fertilizing ingredients are of interest to many farmers.

Per 100 pounds:	Total phosphoric acid	Total nitrogen	Total potash
Lima bean straw	0.30 lbs.	1.37 lbs.	1.57 lbs.
Blackeye straw	1.20 lbs.	0.94 lbs.	3.71 lbs.
Cull lima beans	0.80 lbs.	3.07 lbs.	1.94 lbs.

The value of the above materials in terms of commercial fertilizer can be obtained by reference to the following data: Nitrogen, 18c; Phosphoric acid, 4c; Potash, 4½c per pound.

Be sure to turn the switch onto the magneto after the motor starts and advance the spark (unless your motor is equipped with a Sevison Automatic Spark Advance Magneto).





Any Stump

that any horse power machine can pull, you can pull with the K **Hand Power** Stump Puller—without digging, and without the expense of teams and powder. I guarantee it. I refer you to U. S. Gov. officials. I give highest banking references. If you have stump land, the cheapest way of clearing it is with the

HAND POWER
K Stump Puller

A mechanical wonder. Works on the leverage principle. 100 lbs. on the lever develops a 96,000 lb. pull on the cable. Pulls biggest stumps—all an inch steel cable will hold. Made of Krupp steel—weighs only 171 lbs.—two speeds.

Endorsed by U. S. Government experts. Works equally well on hillsides and marshes where horses cannot operate. Owners report clearing from 50 to 100 stumps per day. Lasts a lifetime—guaranteed against breakage.

Write for special offer and free booklet on Land Clearing.

Walter J. Fitzpatrick

Box 32, 182 Fifth Street, San Francisco, Calif.

RAISING GOOD CROPS OF ALFALFA.

[Written for Pacific Rural Press.]

L. T. Van Slyke, who has a dairy near Ripon, San Joaquin county, and who sells most of his milk there, averaged nearly nine tons of alfalfa per acre last year on his 15 acres.

He accounts for this large yield to the fact that he has his checks perfectly graded so that the entire 15 acres are irrigated just the same. He gets plenty of water on the ground when it needs it, and as soon as it is thoroughly soaked he gets it off again. No high spots or low places, where the water will stand for a day or two, are to be found in his fields.

Mr. Van Slyke believes in thoroughly renovating his alfalfa every year, but says it should be done before February 1, as after that there are a large number of new shoots coming out that get torn off and do not get started again in time for the first crop.

In cutting he starts just as soon as the plants are well budded out, and if the weather is warm and dry, he follows the mower with the rake by about three swaths. By getting it into the shock in this manner he saves practically all the leaves and the hay is not so woody and dry. Some that was being fed in February looked as if it had just been hauled out of the field.

Mr. Van Slyke expects to build a hay barn shortly and will chop and blow his alfalfa into the barn. He believes that there is 20 per cent less waste in feeding this way than when fed loose, as the cows eat the coarse stems as well as the leaves and finer stems.

SILAGE VERSUS PASTURE.

[Written for Pacific Rural Press.]

"I used to pasture my cows a great deal, but I can't see that it pays," says F. H. Vander Poel of El Centro, who is milking 18 Jersey cows, and has a large bunch of young stock. His cows are kept in the corral and fed cut green stuff, such as alfalfa and grain during summer, and silage in winter with beet pulp and hay. He gets 4 tons of oat hay per acre in one cutting, but 8 or 10 tons of alfalfa; and the milk stock does better on the latter.

However, cutting and hauling the green stuff daily involves too much work. He has tried out a 40-ton De Laval silo with one crop of feterita; already plans to have another bigger one, so he can feed only silage and alfalfa hay with perhaps some beet pulp.

"I wish the silo were at least a size larger."

So have many others wished, after learning from experience the value of this feed.

He was feeding in January about 25 pounds of silage to each of the milking stock every evening. In the mornings he would feed about five pounds beet pulp with alfalfa or oat hay. Though some of them were heifers and others six months along, the herd was averaging better than a pound of fat per day. This is due partly to the purebred sire of all of them and the purebred dams of some, and partly to the constant supply of succulent, appetizing feed without having to rustle for it.

THE "BOSS" TREE PROTECTOR



Made of Yucca Palm. Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frosts, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

Prices:

			Per 1000
10 in.	long	7 in. wide	$10.00
12 in.	long,	7 in. wide	11.00
14 in.	long,	7 in. wide	12.00
16 in.	long,	7 in. wide	13.50
18 in.	long,	7 in. wide	15.00
24 in.	long,	7 in. wide	18.00
30 in.	long,	7 in. wide	21.00

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1380 Willow St., Los Angeles, Cal.



KUTTEMSLICK Improved PRUNING SHEARS

Will not bruise the bark, mash the timber, or broom the stick and retard the healing and growth of the tree as with old-style shears.

Blades 3-16 x 1⅛ in., forged from Firth Sterling Steel.

Absolutely guaranteed.

Manufactured and for sale by BARR BROS.,
231 GROVE ST., OAKLAND



Heavy foliage to resist sunburn. Strong, vigorous grower. Those who advertise it otherwise haven't it.

Write for illustrated circular with prices to the originator, F. C. Willson, Prop., Encinal Nurseries, Sunnyvale, Santa Clara County, Cal.

The safest way "to find out."

ACAMPO NURSERY CO.

Guarantees its stock. Get our prices on Deciduous Trees before purchasing elsewhere.

Wilder & Ferguson, Props.
Acampo, Cal. Phone, Lodi 39F 31

Established 1878. Incorporated 1906.

Leonard Coates Nursery Co.

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"We Grow Everything Worth While"

Send for Catalogue.

CHOICE Rice Land

320 ACRES (Tulare County).

2 Good Artesian Wells, with good flow of water. Pumping plant installed at one well which will supply over 100 inches of water.

There is a big bargain in this for cash. Will sell all or divide it.

Also 580 acres in same section. One fine artesian well, with good flow; also a pumping plant that furnishes over 100 inches of water, good 5-acre reservoir.

Will sell one-half or all at bargain.

ADDRESS OWNER,
E. ALBERTSON,
Whittier, Calif.

DOUBLE the EFFICIENCY OF YOUR AUTOMOBILE.

Hitch on a Jackson

AUTO-TRAILER

MODEL 22 $60.00

Other models up to $125.00
Write for catalogue.

Marteco

332 Pine Street, S. F.

"Word of Honor"

WHEN a man puts his name on a product he gives a pledge to the public which only Quality can make good. The value in a well-established name, therefore, is in the honor and good faith for which it stands.

On every Firestone tire there is stamped the name of the founder of the world's largest exclusive tire company—H. S. Firestone, the president of the Firestone Tire and Rubber Co.

On the roughest roads, in the worst weather, you can rely on the extra toughness and thickness of the Firestone tread and side wall. The built-in values mean most miles per dollar.

Tube Bag Free

Fine rubberized tube bag free for your dealer's name and make of your tires. Also Free Book, "Care and Repair of Tires," No. 64

Firestone Tire and Rubber Company

"America's Largest Exclusive Tire and Rim Makers"

Akron, O., Branches and Dealers Everywhere

Red Side Wall—Black Tread

The Distinctive Firestone Trade-Mark

Firestone

NON-SKID TIRES



What Does It Cost YOU to Feed Him?

In 1914, according to government reports, 497 California farmers saved on an average $220 each, by ridding their land of common ground squirrels.

What toll are these little rascals levying against you? Do you realize what damage even a few squirrels or gophers can do in a year's time?

Get rid of them. It's easily and quickly done with

KILMOL
SQUIRLGOPHENE
Will Kill 'Em All

In each burrow put one waste ball saturated with Kilmol. After a few minutes, ignite. The deadly fumes instantly reach every nook and cranny of Mr. Squirrel's or Mr. Gopher's burrow. Kilmol gets him every time—poisons as well as asphyxiates. Kilmol costs you less than one cent per burrow, and one application does the business. Any other method requires from two to six times over at a much higher cost. Government, State and County officers use Kilmol and get 100% efficiency. Results absolutely guaranteed or money refunded.

Your local dealer can furnish waste balls better and cheaper than home-made. Ask him about Kilmol, and about new U. S. Government formula of poisoned barley.

Write for full information about squirrel and gopher eradication.



Herbert F. Dugan
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1170 Sutter St. San Francisco

The United States Destructor, invented by U. S. officials and used with Kilmol. A machine that pumps the gas into the burrow.

Ames-Irvin
IRRIGATION
PIPE

SIMPLE
SOLID
STRONG
IRRIGATE WITH
LESS WATER
LESS WORK
LESS EXPENSE



SEND FOR BOOKLET P.
It gives full information.
WRITE TODAY.

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8th & Irwin Sts., San Francisco

Can High Priced Feed Be Porked Off?

To the Editor: During the past year alfalfa hay has varied in price from $10 to $18 a ton, averaging about $14 per ton in this section. Barley has averaged about $1.25 per hundred and corn $1.50. Hogs during this time have averaged 7½ cents a pound. Under such conditions do you think it profitable to raise hogs on alfalfa pasture and barley or corn? Could you give any suggestions as to feeding under such conditions? What would you consider the maximum value which alfalfa hay, corn and barley could have, if hogs are sold at 7½ cents per pound?—J. M. F., Spadra.

[Answered by Prof. R. L. Adams, Farm Management Dept., University of California, Berkeley.]

In estimating the amount which can be paid for feed in the production of any animal or animal products, deductions from the prices obtainable must first be made to cover the items of:

(a) Interest and depreciation on stock animals.

(b) Interest and depreciation on land, buildings, equipment suitable and necessary for the carrying on of the business.

(c) Operating expenses, including such things as taxes and labor.

(d) Materials other than feed, as charcoal, salt, sulphur, whitewash, and the like.

The first step in answering the accompanying query would therefore consist in determining the figure necessary to cover these items.

Assuming for the sake of the illustration (and it can only be an assumption since the actual conditions are not stated) that the hogs are handled intensively, sold at seven months old, weighing 175 to 200 pounds, and that careful computations indicate that 2½c per pound must go to offset these charges, there is then left available for the purchase of feed, the sum of 5c—if 7½c net is received for the pork.

Hogs should be pastured on alfalfa only during dry weather if the greatest returns are to be secured from the alfalfa. This means that other feed, or run-out alfalfa fields not really fit for hay purposes, should be available for the period between November or December 1, and March or April 1.

In this illustration we will assume that the alfalfa is pastured throughout and is capable of supporting only 1,000 pounds of pork per acre. It is to be understood that this is low, as good alfalfa should support as high as 2,000 pounds of live weight regularly.

If the hogs are fed intensively upon barley, 325 pounds of grain will be required to bring a hog to the weights indicated above at 6½ to 7 months of age. At $1.25 per cwt. grain will therefore cost a few cents over $4.00. If the hogs average 190 pounds, the sum available for feed is $9,50, less the grain, thus about $5.50 is available for alfalfa.

Of the two feeds mentioned to be fed with alfalfa, at the prices given, barley will prove to be slightly cheaper, although the advantage is slight.

From the acreage 12 head of pork will be available annually for sale, in addition to sufficient feed to maintain the herd. Twelve head will therefore pay $66.00 for the use of the alfalfa, even at the low limit of 1,000 pounds, which is assumed in this case. This is an exceptionally low figure when alfalfa is properly supplemented with winter pasture. Some hay will also be secured in addition to the pasture.

In comparison with $66.00 obtained in this way, is the returns on a hay basis. Figuring a 5-ton crop, the receipts at $14.00, less cost of harvesting, leave a gross profit of about $50.00.

In the above the aim has been to indicate the line of reasoning needed to formulate an answer, rather than to give a direct answer to the question asked. The data is insufficient to permit the latter.

In answering the request for information concerning feeding, the best hog men expect alfalfa to make up 50 per cent of the food ration, feeding the balance as grain, or its equivalent in skim milk or concentrated feed stuffs. The grain ration fed is based upon the live weight of the hog, 4 per cent being figured a full ration. Hence for hogs averaging 100 pounds, the grain ration will be two pounds per day. The ration is gradually increased to conform to the increase in the growing hogs—being at all times equivalent to 2 per cent of the live weight.

TEMPERATURE OF CHURNING CREAM.

To the Editor: What temperature should cream be before churning, to make good butter?—J. B. F., Hanford.

[As near 62 degrees Fahrenheit as possible.—Editors.]



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Holsteins for Southern California.

McAlister and Sons of Chino write of their recent importation of Holsteins as follows: "The 104 head of Holsteins which we have just received from the east are, we believe, the largest and finest herd of the breed ever brought to the Pacific coast.

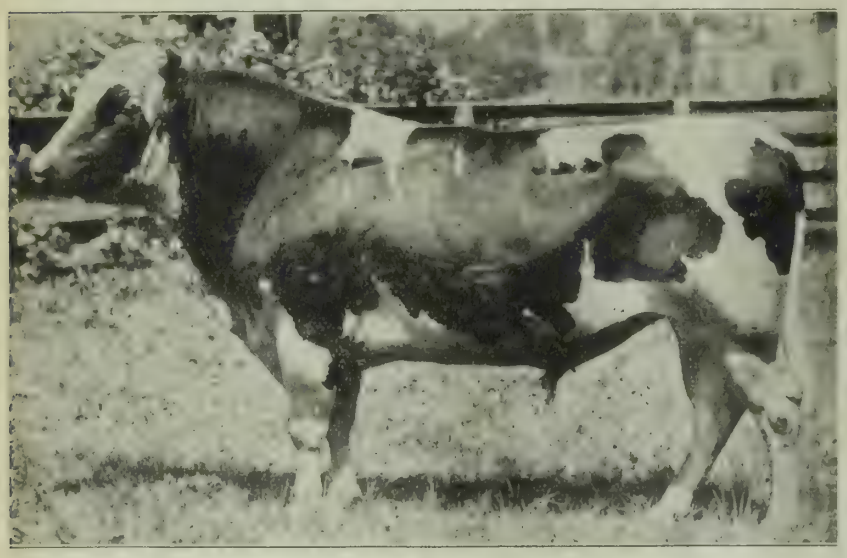
"Among them is the bull, King Segis De Kol Korndyke, that we have selected as our senior herd sire. He is the sire of the world's champion junior four-year-old cow, Mable Segis Korndyke, whose 30 day record was the second largest ever reported, regardless of age. He is also the sire of a 33 pound and a 30 pound daughter, and the sire of King Korndyke Sadie Vale, whose daughters have made sensational records.

"We also bought three sons of this bull. One of these young bulls, out of a 30-pound daughter of King Wayne Pietertje 2nd, who is the highest record cow in the State having a seven-day record of 34.35 pounds of butter and 639.6 pounds of milk as a three-year-old. She also made over 26 pounds as a two-year-old. Her two-year-old daughter is in the lot, she being sired by King Segis De Kol Korndyke and in calf to King Korndyke Sadie Vale. The above were purchased from the McAdam herd in New York.

"From Stevens Brps. we secured 13 head, one being May Korndyke. Other animals are daughters of Spring Farm King Pontiac, Rag Apple Korndyke 8th, King Segis De Kol Korndyke and eight daughters of King of the Pontiacs.

"We also purchased 31 head from H. M. Dunham and Sons, including 20 animals with records from 18 pounds as yearlings to over 30 pounds at full age.

"We think that with over 150 females to be bred to him every year, our senior herd sire will have a better opportunity than any bull in the West has ever had."



King Segis De Kol Korndyke.

Segis De Kol Korndyke, we intend to keep as our junior herd sire.

"Nine of the females in the lot are in calf to King Korndyke Sadie Vale, including four 30 pound cows. Chief among these is Star Rena

One Way of Obtaining a Purebred Herd.

[Written by Prof. E. L. Westover, Dept. Dairy Husbandry, California Polytechnic School, San Luis Obispo.]

Good cows are the basis of profitable dairying. To become a breeder of pure-bred dairy cattle does not require a lot of capital, provided a person can be satisfied to grow into the business rather than go into it. If you already have a dairy herd then the use of the Babcock tester and a spring balance scale is the only certain way of determining just how much milk and butter fat each cow is producing. If you have not a herd then the first thing to decide is what breed meets with your approval and is best adapted to the natural conditions of your section. Before deciding upon this point, study carefully your climate and country, deciding whether you want producers of butter fat or market milk. When this point is decided, then is the time to make your purchases or begin weeding out those cows which the Babcock tester indicates as the poorer members of the herd. The next step is to secure a bull of good breeding and breed him to the herd as also to the calves raised from the best cows.

Must Raise Calves.—More and more, thoughtful dairymen are coming to realize that in order to have profitable herds they must raise and develop their own cows. Men who have good cows are not anxious to part with them, and the dairyman who depends upon the purchase of mature cows to keep up his herd is forced to pay some one a handsome profit for raising them or else be content with the culls of other herds. It is a fact that most of the best-producing herds in the country have been bred and raised by the men who own them.

The first step in increasing the standard of the herd is the determining of the herd boarders. This can be easily done by means of the Babcock tester and a daily record of the weight of each cow's milk. Secure a good spring balance scale which can be adjusted to read zero with the pail on the hook. Rule up a sheet similar to that which the creameries and cheese factories use, using a sheet for each cow. It is best to

REMCO
REDWOOD PIPE

All diameters from 2 inches to 12 feet. Much cheaper than any metal pipe. Will carry 30 per cent more water than metal or cement pipe of same diameter. Will outlast any metal pipe except cast iron. Cannot be injured by roots or displacement. Furnished for any pressure from 0 to 400 feet, and guaranteed for 100 per cent overload.

Write for further information, prices, etc.

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Cheaper than metal tanks. Last longer. Cannot rust. Not affected by chemicals in water. Thousands in use in the West.

We make them in all shapes and sizes, from 200 gallons to 500,000 gallons.

Redwood Manufacturers Co.

1608 HOBART BLDG., SAN FRANCISCO.

HILLCREST STOCK FARM

Thornton S. Glide, Prop.

Davis, Cal.

SHORTHORN CATTLE

Shropshire and Merino Sheep

FOR SALE, SINGLE OR CARLOAD LOTS



KING LANCASTER,

Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.

THEY HAVE GRAND CHAMPIONS BEHIND THEM.

40 Shorthorn Bulls and Heifers

REGISTERED AND TUBERCULIN TESTED.

NOW, at my farm at Perkins, 6 miles East of Sacramento. This stock was purchased from the best herds in Nebraska for my California trade, and are as fine a lot of one and two-year-olds as I could secure. Inspection invited. Call and see them before purchasing elsewhere.

Also have a few registered **BERKSHIRE GILTS** for sale.

I will leave shortly for the East to fill orders for Shorthorns and Herefords. Write me at once of your wants so that I may fill your order on this trip.

H. L. MURPHY

PERKINS, SACRAMENTO CO., CAL.

Brighton Herd of Shorthorns, Established 1880.

BIG TYPE POLAND CHINAS

Gilts from Weanlings to one year old. Bred or open. Boars from weanlings to 8 months.

THE BROWNING STOCK FARM,

W. H. BROWNING, PROP. WOODLAND, CAL.

rule the sheets for seven day records as they do not get soiled so badly and are added without as great chance of error as the larger sheets. These record sheets should be placed with the scales in a convenient position in the barn or near the place of milking, the milk of each cow weighed at each milking, and the weight recorded on the sheet. The testing of the milk for butter fat can be done weekly or monthly. The practice of making the test once each month meets most requirements. By keeping careful tab on these tests the dairyman is enabled to determine which cows in his herd are producing enough butter fat to make it worth while to keep them. Nothing less than 200 pounds of butter fat per year will do this. By careful selection you can increase this 50 pounds, but the dairyman should not be satisfied until he has reached at least 400 pounds per year. To be of value, this test must not only extend through several weeks or months, because several milkings do not demonstrate a cow's value, but the cow must receive proper care and good feed, otherwise a good cow will not show satisfactory results when subjected to this test.



Star Rena Wayne Pietertze, seven day record, 34.35 pounds of butter.

How Many to Raise.—After the herd boarders are weeded out, the data obtained should be used in guarding against the raising of those calves which are not from the best cows in the herd. It is estimated that, on an average, one-sixth of the cows in a herd each year reach an age when it is no longer profitable to keep them. Therefore, there should be raised each year not fewer than one-sixth as many heifer calves as there are cows in the herd, to replace those cows which must be disposed of. The knowledge and experience gained by raising and developing the grades is not only useful and profitable but becomes exceedingly interesting when it is possible to purchase a pure-bred heifer or two as a foundation for new stock. While the experience acquired in the selection of a pure-bred heifer is important, yet it cannot be compared to that gained only through the selection of a pure bred bull. This step of selecting the bull places the dairy farmer in touch with the breeds of dairy cattle and awakens him to the fact that there is a great difference in bulls. To the dairyman the pure-bred bull is an educator, for if the proper thought and importance is attached to his selection, he leads men to study.

Selecting Purebreds.—With the selection of a pure bred bull and two heifers, coupled with the weeding out of the herd boarders, it requires but a few years to build up a good herd of pure-bred cattle. In the selection of pure-bred heifers, care should be taken to select good animals, but in the selection of the bull, greater care should be exercised for it is through the bull that the herd as a whole is improved. In other words, the bull has an influence on every calf born in the herd, while the cow influences but one calf each year.

The Missouri Station has followed the history of two bulls as shown by the production of thirty daughters of each. One of these bull's daughters produced $18,000 more dairy products than did the daughters of the other. Yet we hear plenty of dairy farmers (?) say every day they cannot afford a good bull. The question is can they afford not to have a good bull.

Before selecting that sire, take time to look around. There are good sires and poor sires, and the same in pure-breds as in scrubs, only some may not be quite so poor, but so poor that you cannot afford to have them at the head of your herd.

Be sure that the sire you select has a good butter record behind him, and do not buy anything undersized that the breeder says is just a little backward in development.

When you begin using a good bull do not allow him to run with the herd, as he injures not only himself but the cows also. By setting down the date of services you will know when to expect the different cows to calve and thus lose fewer calves.

Very often aged bulls that are good breeders are offered at prices little above their value for beef. They are harder and more dangerous to handle than a yearling, but this should not prevent a person from purchasing the aged bull, especially if he has proven himself a getter of good stock just as a cow must prove hers at the pail.

To summarize briefly the steps to be taken by a dairy farmer who desires to become a breeder of pure-bred cattle:

First, decide on the breed that is preferred and meets conditions best.

Second, begin to weed out the boarders by the use of the Babcock Tester and scales.

Third, select a well-bred bull and when possible, one that has proven himself a getter of good stock.

Fourth, when finances and experience will permit, buy a pure-bred heifer or two; from these animals, grow pure-bred herds.

At the annual meeting of the Madera Co-operative creamery, the stockholders decided to change the institution from a co-operative to a stock company.

"Corn Silage Worth 1/3 More Than Hay"!

Bishop, Cal., Jan. 21, 1916.
The Chas. K. Spaulding Logging Co., Salem, Ore.
Gentlemen:
I wish to say that the Indiana Silo purchased from you last summer has been filled with corn. THE SILAGE HAS KEPT IN PERFECT CONDITION and the CATTLE EAT IT WITH GREAT RELISH.
The plans of construction sent with the silo are so complete and simple that no trouble is experienced in erecting the silo.
My short experience teaches me that the silo is going to give the dairy interests of Owens Valley a great boost.
Yours very truly,
WM. ROWAN.



"Indiana Silo" on Wm. Rowan's Ranch Bishop, Calif.

"Silage kept in perfect condition," says Wm. Rowen, prominent California dairyman and stock raiser, and booster for Indiana Silos.

In one way or another, men who bought Indiana silos last year are enthusiastically telling us of the good results obtained. Isn't it time you investigated?

A little preparation on your part now, will do away with a lot of cold, wet, muddy work in next winter's feeding; it will cut down your feed bills, and it will give you cream checks of a size that will give your bank account new life.

Reserve some ground for silage crops this year. Then complete your preparations by ordering your

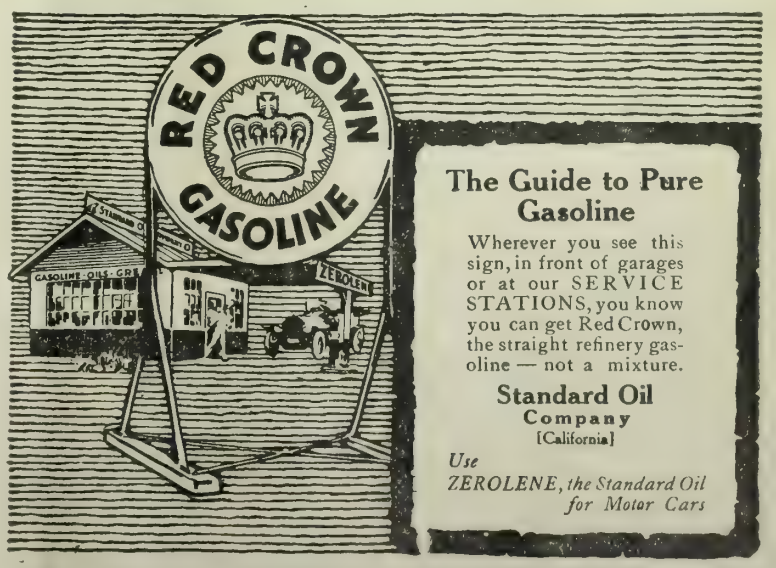
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with delivery to suit your convenience.. Order early. Get your silo up ahead of the rush of spring work. Be prepared to save your grain and hay crops, regardless of rain at harvest time. Be prepared to furnish your stock with a rich succulent feed during the dry summer months. Be prepared to get 100% feed value from your corn crop next fall. Join the great army of Indiana Silo users—almost 60,000 SUCCESSFUL farmers, dairymen and stock raisers.

Mail the coupon now for our New Free Silo Book—a valuable addition to any farmer's library. No obligation, whatever.

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I believe in preparedness for my next season's feeding. Show me how to avoid high feed costs.
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Wherever you see this sign, in front of garages or at our SERVICE STATIONS, you know you can get Red Crown, the straight refinery gasoline — not a mixture.

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Use ZEROLENE, the Standard Oil for Motor Cars

With the Live Stock Men.

DAIRYING.

The Harwood and Williams Ranch Co., of Poplar, Tulare county, have just received a fine young Holstein bull to be used on their dairy herd.

Silage fed the present season to dairy cows by E. Hertrich of Pomona is reported to have noticeably increased the fat test, though not the milk flow.

H. H. Ford, a large orange grower of Redlands, is establishing a purebred Holstein herd for his alfalfa ranch near Highlands. He is buying young stock to raise.

Only the intradermal test for tuberculosis is used practically in California according to Dr. Tyler of Pomona, though in Oregon only the thermal test is officially recognized.

Mr. A. W. Longley has sold his interest in the Aberlour Purebred Holstein Co., located in Inyo county, to Chas. F. Mohnike of San Diego. This is probably the finest breeding establishment in the mountain sections of California.

A report from Stanislaus county states that A. L. Pedalty has purchased a 40-acre ranch near Hughson which he is checking and seeding to alfalfa and on which he expects to establish a modern set of buildings and a fine dairy herd.

F. H. Vander Poel of El Centro has 10 registered female Je rseys and a registered bull. He also has more than that many grades. "I konw the purebreds pay better. There is no doubt about that. I am getting all the purebreds I can," says he.

Probably the only purebred Guernsey herd in the neighborhood of Pomona is to be dispersed at private sale by I. J. Scott who expects to work entirely in his orange orchard near Whittier. They have all passed the tuberculin test.

Seventy-three pounds of milk per day for three months with her second calf is the record of a purebred unregistered Holstein cow which recently gave 65 pounds with her fourth calf two weeks old. D. W. Anderson of Pomona, who owns her, says her milk flow was still increasing then.

In order to furnish Alaska settlers with a breed of dairy cattle suitable to the needs of the country the government now has a herd of 50 Galloway cattle on the Kodiak Island Experimental Farm. Careful record is being kept of their milk production and only those with the largest milk records are being kept for breeding purposes.

Farm Adviser Niles Searles of Yolo county reports that another movement is under way by farmers of that county to organize a cow-testing association. He recently visited Williams, Colusa county, to interest dairymen there in the association, his plan being to take in dairymen from counties adjacent to Yolo. There have already been about 750 cows signed up.

The Riverdale Co-operative Creamery Association manufactured 827,136 pounds of butter during 1915, a gain of 77 per cent over the previous year. The total income for the year was $234,276.03. The same officers and directors were elected that served last year. An attempt will be made in the immediate future to organize a cow-testing association in the district by the creamery manager.

As an indication of the producing ability of the cows being tested by the San Joaquin County Dairymen's Ass'n, H. J. Culbertson, tester for that association, sends us a list of 22 cows which made more than 45 pounds of fat during January. Four Jersey cows owned by the N. H. Locke Co., of Lockeford, head the list, Empress Lass giving 1649 pounds of milk containing 82.4 pounds of fat; Dereen's Lassie of L., giving 1265 pounds of milk with 64.7 pounds of fat; L. of L. Midget giving 1195 pounds of milk with 59.9 pounds of fat and Gerties Foxy Alene giving 1035 pounds of milk and 55 pounds of fat. Other owners of cows in the list were Mrs. E. C. Clowes, E. B. Goodwin, L. Moreing, County Farm, J. E. Thorpe, R. T. Wilkerson and J. A. Aggeler.

SWINE HAPPENINGS.

J. E. Brumel of Ceres is developing a Berkshire herd. He has found that breed a good paying side line of the fruit business.

According to E. Wiglesworth, president of a large hog cholera serum plant of Kansas City, Imperial county, and especially that section around Holtville, is the greatest hog-raising country he has seen.

Ed. E. Johnson, the veteran Duroc Jersey breeder of Turlock, writes that he has sold 47 head of registered Durocs in the last three months, which indicates that Stanislaus Durocs are in demand.

Dr. Cady, of the U. S. Dept. of Agr., is at present in Imperial county where he is giving lectures on hog cholera and its control. Dr. Cady has done an immense lot of good work in both of the large valleys of the State along this line.

Swine breeders are to hold a show of their own in the east this year as a result of the efforts of the National Swine Growers' Ass'n. Cash prizes aggregating $10,000 will be offered. The first show will be held at Omaha, Nebraska, October 2 to 7.

G. D. Willoughby and Sons of Calexico use 13 purebred Duroc boars. One is B. Commander Chief out of Commander Chief; another is a son of Slocum's Crimson Wonder, which was the sire of the World's Fair Champion California's Defender.

At a special meeting of the directors of the Standard Poland-China Record association and the American Poland-China Record association at Kansas City, Feb. 8, it was unanimously agreed to consolidate the two records. This is the most important piece of breed news that has gone out in a good while.

In line with their endeavor to obtain the best breeding animals available for their purebred herds of livestock the University of Nevada have recently purchased a young son of Laurel Champion and out of Miss L. 2nd, which they will use as herd sire on their Berkshire herd. They have also secured a son of Nevada Volunteer out of Rena Dewdrop to head their herd of Duroc Jerseys.

Carruthers Farms reports the sale of one boar to the Timpkin Ranch Co., at Brawley; one sow to Sam Wright, Santa Rosa; three sows and a boar to Dr. Robertson, Yreka, and

TUBERCULOSIS TESTING MUST BE OFFICIALLY DONE.

[Written for Pacific Rural Press by Charles Keane, State Veterinarian.]

Many letters are received at this office from dairymen, as well as from veterinarians, asking if certificates issued by practicing veterinarians showing that a dairy herd has been tested for tuberculosis will be recognized by this department when the new dairy law becomes effective October 1, 1916.

I understand that many dairies are being tuberculin tested under the misapprehension that such certificates will be so recognized.

In order that this may be clearly understood, I wish to advise that under no circumstances will such certificates be recognized, for the law does not become effective until October 1, 1916, and it clearly contemplates that all tuberculin testing shall be officially done by official veterinary inspectors.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

HORSES AND MULES.

8 JACKS FOR SALE from 1 to 6 years, or will trade for fillies or heifers. We took all prizes for mules at State Fair, 1913. Kelley & Son, R. D. 3, Box 93, Lodi, Cal.

FOR SALE—Large-boned, purebred mammoth Jacks. Best of breeding. Prices and terms reasonable. Satisfaction guaranteed. J. A. Dickinson, Fresno, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H Stenzel, San Lorenzo, Cal

VANADERA HERD OF JERSEYS is now offering fine heifer calves from register of merit cows with official yearly records. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs butter as two-year-olds. A. A. Jenkins, Tulare.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

HOLSTEIN BULLS—Purebred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

FRANK MEACHAM, Petaluma, California.—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

WANTED—About 25 good dairy cows to be paid for in 12 equal monthly installments. Payment secured by mortgage on stock. Party reliable. Box 205, Pacific Rural Press.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

FOR SALE—7 High-Grade Holstein cows; 1 2-year reg. Bull; all young and heavy milkers; tuberculin tested. P. J. Traud, Concord, Calif.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal—High-class, thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TWO REGISTERED HOLSTEIN BULLS out of A. R. O dams. Sired by King Mead. Ready for service. J. B Harlan Co., Woodland, Cal.

TWO REGISTERED HOLSTEIN BULLS old enough for service. Very light in color. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

FOR SALE—Two fine two-year-old registered Guernsey bulls from imported stock. T. W. Powell, Route 2, Lodi, Cal.

REGISTERED HOLSTEIN BULLS — Serviceable age. From finest strains. Panama-Pacific Dairy, Sutter Creek, Cal.

ELEVEN REGISTERED HOLSTEIN COWS—Priced to sell as a bunch at very low figure. K. W. Abbott, Milpitas, Cal.

HOLSTEIN-FREISIAN CATTLE and Berkshire Hogs. H. B. Goecken, Breeder, Goecken Heights, Livermore, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy 300 head in herd. J. W. Clise, Redmond, Washington.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

PALENDALE HERD of Registered Holsteins. Young bulls for sale. J. A. Pelanda, Modesto, Cal.

REGISTERED JERSEY BULLS from register of merit cows. D. F. Conant, R. "B," Modesto.

BREEDERS OF A. R. O. Holstein Friesian cattle exclusively. Dirk Dairy Farm Lemoore.

CREAM CUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls from tested cows for sale.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Son, Chino, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

BREEDER of Registered Holstein Cattle. Ernest Otto McClure, R. 2, Modesto, Cal.

BREEDER OF REGISTERED HOLSTEINS—E. B. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd. D. & H. Rowles, Modesto.

JERSEY BULL—8 months old. A bargain. O. J. Ames, Oakdale, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

SWINE.

BIG TYPE POLAND CHINAS—One to a carload. Any age, either sex. 600 on hand. They have plenty of size, extra good hams and shoulders, strong arched backs, great length, depth and thickness of body, with good looks as well. Many are sired by IOWA WONDER, a 1000-pounder in show condition. I believe his pigs are the best in California. Visitors say they are the best they have ever seen. He sires the kind that grow faster and larger, have more, better and stronger pigs, and are more practicable and profitable—the kind that are highly satisfactory. Extra special prices on account of being overstocked. I have hogs galore. Prices will surprise you. Satisfaction guaranteed. Write Geo. A. Smith, Corcoran, Cal.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—Everything registered and Cholera Immune. Have two young boars of service size and a few bred gilts to offer. These are extras in every way. Price very reasonable. Have recently received some bred sows from the East that are from Grand Champions and are bred to Grand Champions, from the best and most popular blood lines. Will have an attractive lot of pigs to offer from the coming spring farrows. These will be the equal of any raised in this country. Am booking orders now for same. Write for prices and catalogue. C. B. Cunningham, Mills, Sacramento County, Cal.

YOUNG'S POLAND CHINAS—Large type boar, "I. B. A. Wonder" won first in class and Reserve Champion P. P. I. E. 730 lbs. under two years in breeding condition. Sows bred and sired by "I. B. A. Wonder." Also weanling pigs, either sex. Trios unrelated. None bigger. None better. $15 and up. Will please you or money refunded. W. A. Young, Lodi, Cal.

BLUE RIBBON HERD OF DUROC JERSEY HOGS—With 125 head of choice gilts and boars sold in year of 1915, I am going to sell 150 head in 1916. They sell because they are choice, and people are given a Square Deal on good ones. I have no $10 and $15 kind I don't have to auction them off. John P. Daggs for prices, Modesto, Cal.

REGISTERED DUROC-JERSEYS—Prize-winning stock from Iowa, Nebraska and Wisconsin. 75 head—bred sows and gilts. Also weanlings in groups of from one to five and boar unrelated of Crimson Wonder, Golden Model, Alvancer, Golden Hero, Orion, Chief and Colonel blood. Price $10 and up. Haden Smith, Route 1, Box 97A, Woodland, Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

REGISTERED BERKSHIRE WEANLINGS, both sexes, unrelated, $10 each. Also older boars and open gilts, or bred to a fine son of Grand Leader 2nd. J. M. Bomberger, Modesto, Cal.

BLATCHFORD'S PIG MEAL weans easily and safely; no trouble; no milk. Write for free folder, "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

CHESTER WHITES (O. I. C.'s)—Bred gilts, $30. Bred sows, $45. Weaned pigs, $10. Also a fine herd boar 20 months old. D. Bache, Hollister, Cal

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

ROSELAWN STOCK FARM—Registered Poland Chinas and Shorthorn cattle. Young stock, both sexes, for sale. T. R. Gibson Estate, Woodland, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen A. Day, Box 1140, Sacramento.

RANCHO RUBIUS—Durocs all sold except one service boar and a few October pigs. Spring litters will be "best ever." Elmer Lamb, Ceres, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Price and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

PLAINFIELD STOCK FARM—Registered Berkshires and Durocs. Young stock for sale, both sexes. H. M. Bullard, Woodland, Cal.

REGISTERED DUROCS—Fall farrowing. Choice boars and gilts. Crimson Wonder and Model strains. Felton & Hoyt, Hanford, Cal.

POLAND-CHINAS — While the advertisement is short the hogs are long—of the big-boned type. C. A. Cooley, Durham, Cal.

DUROC JERSEY HOGS—For sale, boar and 4 sows. Boar not related. All thoroughbred. Address Box 208, Pacific Rural Press.

15 sows and a boar to C. C. Moore of San Francisco. This company has also purchased three Rival's Champion Best sows and one Rival's Champion Best boar, for their herd at Mayfield.

Elmer Lamb of Ceres purchased two bred Duroc gilts at the Watt and Foust Duroc Jersey sale held at Xenia, Ohio, recently. Their dam is also the dam of the famous boar Mortgage Lifter and other show ring winners and will greatly add to the strength of Mr. Lamb's herd. The boar received from the east recently to head this herd is looking well and should sire some fine pigs.

BEEF CATTLE.

Hayes and Devaney have begun the moving of their cattle from the valley lands to their hill ranges back of Livermore.

Eight cars of cattle and four of sheep, having a total valuation of $25,620, were recently shipped from Carson Valley, Nevada, to the San Francisco market.

The annual cattlemen's meeting was held in Glennville, Kern county, recently, at which time permits for government grazing lands were allotted them by the government officials.

Stockmen of San Benito county are being urged to keep a careful watch for rabies among the coyotes, as it is strongly suspected that rabies exists in certain sections of that county.

A report from Hollister states that while weather conditions in the cattle ranges adjacent to that town have been exceptionally severe the past month, scarcely any loss is reported, although many stockmen were forced to feed hay. The cattle were in good condition before the snowstorms and were better able to stand the cold for that reason.

Carruthers Farms report the sale of five Crookshank cows and a bull to the Fair Oaks Ranch at Willits. Three of these cows are Orange Blossoms, one a Goldendrop and the other a Victoria. Mr. Thayer, owner, of the Fair Oaks Ranch, has been breeding Shorthorns for several years and these Scotch cows will be a valuable addition to his herd. Mr. Carruthers also reports the sale of four Shorthorn bulls to Mr. Orvis of San Joaquin county; two Shorthorn bulls to C. C. Moore, San Francisco; two Shorthorn bulls to the Hearst Estate; two Herefords to the Newhall Land and Cattle Co.; 20 Hereford cows to W. T. Sessnon and four Shorthorn bulls to Fred Wadsworth, Yreka.

SHEEP.

Sheep men report having a difficult time saving the lamb crop on their ranches near Willows, owing to the bad weather the past few weeks.

The well-known Rambouillet sheep breeder, Chas. Kimble of Hanford, has just given the University of California six of his finest purebred Rambouillets, which will be added to the Rambouillet flock at the University Farm at Davis. The University Farm has been badly in need of more sheep of this character and Mr. Kimble's gift was most appropriate.

A report from Winnemucca, Nevada, says that several wool buyers have been there recently, lining up the spring clip and while announcement has not been officially made it is understood that John G. Taylor and the Golconda Cattle Co. have contracted their wool at right around 20 cents.

SWINE.

REGISTERED BERKSHIRES—For sale bred sows. Boars ready for service and weanling pigs C. H. Thompson, Novato, Cal.

GLENVIEW POLAND-CHINAS—Baby Pigs from best families for sale. From $15 up. Chas. R. Hanna, R. 3, Riverside, Cal.

REGISTERED POLAND CHINAS—The big litter, half-ton kind that have quality. Prize winners. Hale I. Marsh, Modesto.

BIG TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

REGISTERED DUROCS of guaranteed breeding. Bred gilts, service boars and fall pigs. H. E. Boudier & Son, Napa.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

REGISTERED HAMPSHIRES—Winners at P. P. I. E. Stock of all ages. W. T. Gatton, Box 231, Gardena, Cal.

REGISTERED DUROC-JERSEYS from choice Eastern sows. Spring boars and gilts. S. S. Southworth, Napa, Cal.

ROSS' DUROCS—A tip-top lot of weaned pigs. Also 27 bred sows and gilts. R. J. Ross, Route A, Modesto.

REGISTERED POLAND CHINAS—Stock from champion herd at Exposition. Dimmick Bros., Livermore, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED BERKSHIRES—Big-boned. Cholera immune. Riccomi Bros., Mountain View.

REGISTERED BERKSHIRES — Weanling pigs, $10 each. G. A. Casey, R. 7, San Jose.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES — Prize-winning stock. Sunnyside Stock Farm, Perkins, Cal.

REGISTERED BERKSHIRES—Young boars for sale. Alexander and Kellogg, Suisun, Cal.

REGISTERED POLAND-CHINA HOGS—Cholera immune. W. D. Trewhitt, Hanford.

PURE-BRED BERKSHIRES—Stock of all ages. Brae Bourne Ranch, Route 3, Box 172, Santa Rosa, Cal.

REGISTERED POLAND CHINAS of the big-bone type. For prices write James D. Twohey, Livermore, Cal.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

REGISTERED DUROC-JERSEY SWINE—Las Paderas Ranch, El Cajon, Cal. M. S. Allen, Manager.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. T. D.. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRE PIGS—Write or call. Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

DUROC-JERSEYS—Registered boars and gilts. John Decker & Sons, Turlock.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REGISTERED BERKSHRES—Young stock for sale. F. W. White, Elk Grove, Cal.

FAIR OAKS RANCH, WILLITS, CAL.—Registered Duroc and Berkshire Swine.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

CHAS. GOODMAN — Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED BERKSHIRES—All ages. Choicely bred. U. Hartman, Ripon, Cal.

REGISTERED POLAND-CHINAS—Bred sows. Roy J. Turner, Trowbridge, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Lakeport, Cal.

DUROC-JERSEYS—Write or call. R. R. Houston, Byron, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

BEEF CATTLE

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco, or H. J. Macomber, Paicines, Cal.

FAIR OAKS RANCH, Willits, Cal.—Registered yearling Shorthorn bulls for sale. Sired by Landseer 373218, grandson of imported Villager 295884.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON-NEWMAN CO., Breeders of registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

HEREFORD BULLS—H. H. Gable, Diamond G. Ranch, Esparto, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHEEP.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers, Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

MISCELLANEOUS.

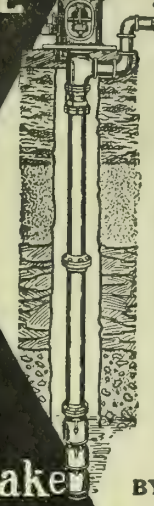
FOR SALE, SURPLUS STOCK—2 dark grey Percheron Stallions, 3 and 5 years, respectively. Grand individuals. Price, $400 each and down. Three Shorthorn bulls, $150 each and down. All registered. Wm. Bond, Moury Station, near Newark.

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

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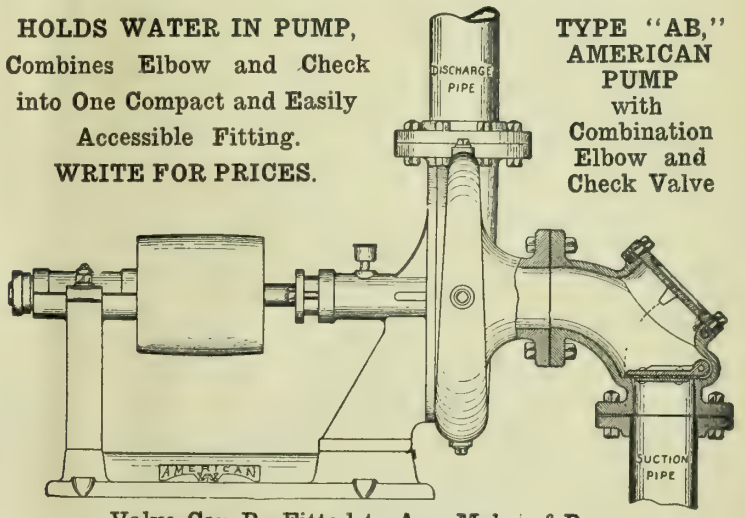
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$250.

I am now offering a very fine bull out of a high-testing dam, who was sired by King Pontiac Premier, one of the best sons of King of the Pontiacs, 165 A. R. O. daughters. Her present record is 21.09, made at four years old, but she can make around 25 lbs. with next calf. On the sire's side the bull has the blood of Pietertje Hengerveld Count De Kol, 99 A. R. O. daughters; and dam Deutschland Creamelle, is out of Creamelle Vale, the former world's championship milk cow. This young bull is almost white in color and is ready for service.

Write or come and see him.

F. H. STENZEL,

San Lorenzo, Calif.

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Veterinary Queries and Replies.

[Answered by Dr. H. B. Wintringham, Petaluma.]

Correspondents desiring a reply by mail should send money order for $1.00. No charge is made when questions are answered through this department.

NO REMEDY FOR FOUNDERED HORSE.

To the Editor: Is there anything that can be done for a horse that has been foundered? This is of several years' standing. He travels bad on hard road, also seems to have rheumatism in cold bad weather when he has to stand in the stable.—W. L. K., Florin.

[There is no remedy. Shoe with a wide web concave shoe.]

CHOLERA.

To the Editor: I have a sow that had five pigs, two of which have died. They shook continually as if in chill unless lying close against the mother's body. The three that are left are about three weeks old, eat well and doing fine but continue to shake about the same. They are in dry pen with plenty of dry straw. What is the cause and the remedy?—J. B. F., Turlock.

[This is cholera. They will probably outgrow it.]

SHOULD KEEP BREEDING DATES.

To the Editor: I have a young heifer with second calf that is supposed to come fresh in June but looks like she would come fresh much sooner. She gives very little milk lately and that is stringy. What can be the matter with her?—L. F. P., Sacramento.

[Keep better track of your breeding dates and you will know better when your cows are to freshen. This animal has garget, which has been fully prescribed for in past issues of the Press.]

ULCERATED TOOTH.

To the Editor: One of my cows seems very eager to eat her feed, eating very fast, but only about half the amount she should. I feed grass and alfalfa hay and some carrots and grain. She will freshen in April. I have not milked her for two months. She is dropping off in flesh every day and her dung is loose and very coarse. What can I do for her?—J.H. H.

[This cow has an ulcerated tooth. Have it removed.]

HORSE WITH GROWTH ON LEG.

To the Editor: I have a horse that while playing in the lot when a colt fell, turning the hind leg under him in such a way to cause the joint to swell and become inflamed. I treated it with hot applications, liniment, etc., and while it does not lame him it has left a soft ball about the size of an egg on the inside of his leg that appears to be filled with water. What can I do to remove it?—A Reader, Manteca.

[Rub iodine on this enlargement daily for two months. If it becomes very sore discontinue treatment for a time and then begin again.

HORSES CHEW LINES.

To the Editor: I have four head of horses that have all had their teeth floated but chew their lines. I have tried pepper and grease on lines but it did no good. They have plenty of salt. What will break them of this habit?—E. E. R., Lemoore.

[Have short chains attached to the ends of the lines to lengthen them.]

TREATMENT FOR HORSE WITH SORE LEG.

To the Editor: I have a horse whose heel has been sore for several months with what I think is a thrush. Also have a three-year-old horse that has a hard bunch on the hind leg about the size of a walnut, which has been there since the horse was a few months old. It is about six inches above the ankle joint. What can I do for them?—Subscriber, Le Grande.

[Pack the sore place with cerate of cantharides and repeat in four days. Rub tincture of iodine on the enlargement once daily for a considerable period. Stop if it becomes very sore and then begin again.]

SOW WITH PNEUMONIA.

To the Editor: I have a young sow that has a slight cough, runs at the nose, won't eat much, lies down a great deal and tonight seems to have trouble breathing, her breath coming short and quick. She has not eaten much for several days. Is there anything I can do for her?—J. L. C., Turlock.

[This is pneumonia and the animal is prabably dead by now. Clean, warm, dry sleeping quarters, free from drafts, is the best preventive for this trouble.]

LEAKY TEATS AND ABORTION.

To the Editor: I have a heifer that leaks her milk badly. This is the second calf; is there a remedy? Would it be possible for a veterinarian to take the skin from around the opening and sew the muscle together more closely? Have contagious abortion, but while the cows clean up quite easily, my bull has lately gotten infected and seems to be hard to clean up. I run a rubber tube about 8 or 10 inches up the sheath and force a potassium manganate solution through the tube, but he seems to have a sticky discharge from the sheath and when he serves cows some of the semen seems to have yellow spots in it and the cows start discharging again. I think some of the cows are getting with calf and have been douching them with the above solution till discharge ceases. What is the chance of these cows carrying their calves?—Subscriber, Merced.

[A good operator could fix the teats, but there would be danger of mammitis and it would be considered a serious operation. You are using too strong a solution to inject the bull with. Cows usually carry their calves after they have aborted twice.]

Jersey Bulls

EMPRESS LASS, Grand Champion Jersey Cow at Alaska-Yukon Exposition, and several times at California State Fair, gave 82.32 pounds fat during December, 1915, under dairy conditions.

Her Grandsons and other Bulls from good-producing cows for sale.

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Shire Stallions

If you are in the market for a Shire Stallion, and wish to take advantage of the fact that I am closing out, you had better do so at once, for they are selling fast. All the young stock is sold, but I still have a few **first-class Stallions** for sale. These stallions are some of the best I ever imported, and include first-prize winners and champions.

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The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle, SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish* Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

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Percheron Stallion

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Black. Six years old, sound, well-broken, and good foal getter. Price, $400. Or will exchange for Span No. 1 work mules.

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PORK IS GOING UP

Now is the time to buy

REGISTERED BERKSHIRES.

I have a number of extra choice Bred Sows and Gilts, bred to or daughters of the First Prize Aged Boar at the P. P. I. E.

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Model Herd of BERKSHIRES

Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 180837 and Breed's Model 165859, both winners of blue ribbons at State Fair.

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Tamworths and Duroc-Jerseys

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SWINELAND FARM,

W. O. PEARSON, Prop.

Woodland, California.

Care of the Brood Mare.

[Written by Henry Wheatley, Napa.]

The care of the brood mare commences whenever she is foaled, that is in the care of the dam; but we will commence with the filly when she is weaned. From this time on the essentials are, good feed and enough of it and plenty of exercise.

The two must go together, for with feed and no exercise the filly will probably go wrong and if not it will not get the muscular development so necessary in a good mare, and if given exercise without liberal feeding the mare will be undersized.

The age at which a mare should be bred is one on which opinions differ, but I think most breeders agree that if the two-year-old mare is to be bred she must have quite liberal feed or she is liable to be stunted.

While the mare is carrying her foal she is better at work than lying idle; but again, a work mare that is in foal requires more feed than a barren, mare and while she is better at work than idle, it is advisable to let the barren mares or the geldings do the very heavy work. If this is done most mares can work right up to foaling time and be better for it.

But after foaling give her a month's rest. After that the mare can resume her work, leaving the foals in a box stall, preferably with the run of a yard, and let them have some bran and oats to eat. At night, after the mare has had her feed, turn her and the foal on grass. In this way the mare can be used and at the same time raise a good colt.

Handled in this manner the brood mares can work for eleven months in the year and also raise a foal. I certainly believe horses raised as above are the cheapest power for the farm.

Rice Middlings for Sows and Pigs.

To the Editor: Will you kindly give me the feed value of rice middlings as compared with wheat middlings for sows and little pigs? Give me your estimate by weight and I can figure the difference in price myself.—E. A. P., Vacaville.

[Answered by Professor F. W. Woll, University Farm, Davis.]

[Rice bran and rice polish are the two common by-products of rice mills, that are used for stock-feeding purposes. It is possible that rice middlings, so-called, is nothing but fine-ground rice bran or a low-grade rice polish. When pure and unadulterated, both these feeds are valuable for swine feeding, rice bran being somewhat less valuable than wheat middlings, and rice polish somewhat more valuable. The polish makes an excellent fattening feed when it makes up not more than one-half of the grain ration, and is one of the richest starchy feeds available. It contains about 8 per cent digestible protein and 74 per cent digestible carbohydrates and fat, against 7.9 per cent and 57.9 per cent for a good grade of rice bran, and 15.7 per cent and 62.5 per cent for wheat middlings. A mixture of rice bran and wheat middlings, equal parts by weight, would give more satisfactory results for feeding sows and little pigs than either of the rice feeds given. Unless a first-class quality of rice middlings were available, it would not be advisable to feed it, even in a mixture with other concentrates. If the bran (middlings) contains more ground hulls than is unavoidable with present methods of milling, it makes a very undesirable and even dangerous feed, especially for little pigs; e. g., the Pacific Rural Press for February 5, 1916, page 162, Rice Hulls Dangerous.]

NOT AFFECTED BY PASTEURIZATION LAW.

To the Editor: I understand that after October 1, cows have to be tested for tuberculosis if one sells his cream to a creamery. If one uses the milk themselves they would not have to test, would they? Does the State send some one around to do it? If not, who does it, and does the owner of the cows have to pay for it, and about what would be the cost of having the testing done? It would seem to me that the State ought to pay at least half of the value of the cow condemned. One might say that it would make butter a little higher in price, thus returning some of the loss, but I can't figure how a man with one or two cows can get enough extra for his butter to repay him for the expense. It would seem to me that, as it is done for the benefit of all milk or butter users, the loss through testing should be stood by all.—E. L. Winton.

[As we have previously stated in these columns, the dairy cow owner who uses his own product exclusively and the one who sells to a creamery or milk distributor will not be affected by this law. We are advised that dairymen selling direct to the retail trade, who do not wish to pasteurize, and who are not in a district where any of the cities maintain inspection, should put in an application to the State Veterinarian, Sacramento. This allows them to continue selling milk till such time as the State Veterinarian or his deputy is able to do the testing. In such instances there is no charge made for the testing. Dairymen in districts where city milk inspection is done by any of the various cities, may have to pay for the testing, providing their inspectors demand testing before the State Veterinarian can get around to do it.

There is undoubtedly much merit in your suggestion as to the State standing a portion of the loss from tuberculosis testing. Such a law has been in effect in Wisconsin for several years and has been a big influence in cleaning up this disease in that State. Such a law has been advocated in this State before, but apparently the demand for it has not as yet become great enough to break into the State Treasury for funds with which to finance it.—Editors.]

HOW MUCH SILAGE FOR 10 COWS?

To the Editor: How large a silo would it take to feed ten cows for five months? About how many acres of good corn would it take to fill a silo of that size?—Subscriber, Tehama County.

[Assuming that you feed 30 pounds of silage per day per head, your 10 cows will require 22½ tons of silage for five months' feeding For such a herd a silo not smaller than 10 feet in diameter and 20 feet high, with a capacity of 26 tons, would serve the purpose. Just what a good crop of corn would be in your section is a question we cannot answer. In general over the State we have always thought 10 tons to be a good average, but this varies with soil and climate. As a rule the largest yields are obtained on river bottom lands, while lighter yields are customary on high dry land where the crop has to be dry farmed. We should plant three or four acres for the size silo above mentioned so as to be sure and have enough silage. Any surplus left after filling the silo can either be fed green to the stock, or left to ripen and harvested for grain in the fall, if your climate allows of that practice.—Editors.]

The Fox Tail in the Alfalfa

makes that first cutting worthless as hay, but it makes

Excellent Silage

when put into an

Ideal Green Feed Silo

and you can harvest it in the rain if necessary



THE SAVING by putting the first cutting of alfalfa into the silo is TWO FOLD.

FIRST YOU MAKE GOOD FEED out of a crop that as hay is not worth handling, besides getting rid of the most of the weed seed.

SECOND BY FEEDING GOOD ENSILAGE you can almost if not altogether cut out the mill feed bill and thus increase your profits.

YOU CAN FILL TWICE A YEAR, in the spring with the first cutting of alfalfa, which will be fed out in time to fill with the corn planted in July.

YOU WOULD HAVE YOUR SILO PAID for now if you had installed it last year. The profit from any one filling being usually enough to do this.

RESOLVE RIGHT NOW to not go through another season without an Ideal Green Feed Silo. We will sell you on terms.

Write for catalog and our special proposition.

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GRANDSONS OF TILLY ALCARTRA

At Prices within Reach of Every Breeder and Dairyman.



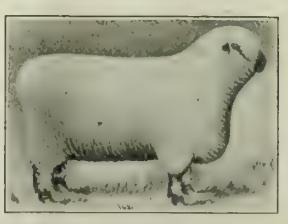
A Grandson of Tilly Alcartra.

We have several splendid grandsons of this now famous cow which we can deliver to you at prices which will suit the pocketbooks of every dairyman wishing to improve the quality of his herd, whether it be a grade or pure-bred herd. These bulls are sired by our herd bull, Prince Alcartra Korndyke and out of A. R. O. cows, and are the only living grandsons of a cow having a record of over 30,000 pounds of milk in a year. Such an opportunity for increasing production has never been offered **DAIRYMEN AND BREEDERS** in California, price and quality considered. Buy one of these bulls and solve your low production problem. Write

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BISHOP BROS, Agents. SAN RAMON
Contra Costa Co., California.

Poultry Questions Answered.

[By Geo. H. Croley, President Federated Poultry Association of California.]

SETTING TURKEY EGGS.

To the Editor: Please tell me if a turkey hen will lay more than two settings if she is not allowed to set. Have been told by some that they will only lay two settings even if broken from setting, and some say three.—J. W. S., Pond.

[Under favorable conditions vigorous turkey hens will lay three lots or clutches of eggs if the first two are carefully removed, but the last clutch—usually termed the fall laying—seldom produce satisfactory poults. Mrs. Swaysgood in her book, "California Poultry Practice," states: "I have seen turkey hens running around with broods at Christmas, and that as far north as Sonoma county."]

MORE HOGANIZING QUERIES.

To the Editor: Please inform me where I can learn the system of Hoganizing chickens; also who is the publisher and the price of the book?—Mrs. M. S., Stacy, and F. S., Smartsville.

[We answered a similar query in the issue of Jan. 29, 1916, in which we briefly described this system. The book which teaches this method of selecting breeding fowls and laying hens, is entitled the Call of the Hen; it was written by Walter Hogan, who began the study of selection for heavy egg production over forty years ago. Orders may be sent to the Pacific Rural Press. Price $2 postpaid. A new edition of this book, which has just been received, is nicely printed with large type on heavy paper and is handsomely bound. In the back of this edition there appears a list of forty questions for use of the reader in testing his ability to memorize the rules for making the proper selection of fowls for breeding purposes.]

POULTRY NEWS NOTES.

[By Geo. H. Croley.]

A brooder house 180 feet long with a capacity of 7000 chicks is under construction at Brooke Farm near Sacramento. The heating device, designed by Mr. Brooke, consists of a large oil-burning heater with over 700 feet of hot-water pipes. The house is divided into compartments so that not more than 150 chicks will be under one hover.

The Fair Oaks Land Company are installing a poultry ranch on their property adjacent to their ninety-two-acre almond orchard.

Under the local marketing system of the Pomona Valley Producers' Association, a steady and satisfactory price has been maintined during the winter notwithstanding the great advances and declines of egg prices in the large markets of the Coast.

The poultry show held at Victorville, San Bernardino county, during the last week of January was quite a success and, considering the newness of the settlement, was well attended. The fifteen exhibitors displayed a good variety of chickens, turkeys, pigeons, and rabbits. This show was intended to appeal especially to those who must find some means of getting money for the development of their land or of making a living until their trees begin to bear. There is a local market for many more eggs than are now produced in that section.

At the annual meeting of the Tulare Co-operative Poultry Association held on January 31 the lady members of the Association served a chicken pie dinner at noon.

At the annual meeting of the Coalinga Poultry Association, the following officers were elected: President, Jas Hutcheson; vice-president, V. R. Kinder; secretary, Chas. Miller; treasurer, Jas. Tennant; superintendent, Claude Walker; agent, E. J. McCrosky.

POULTRY TICKS SUCCESSFULLY DESTROYED.

To the Editor: In a recent number I saw a request for some way to kill poultry ticks. Having cleaned up a badly infested place and kept it clean for two years, I offer my remedy.

First clean the house thoroughly and burn everything removed; if the stuff won't burn, soak in oil and then burn to kill any eggs or ticks present.

Then paint all woodwork, not covered with tarred paper, with one pint of sheep dip in ten quarts of distillate or coal oil. Be especially careful about the under side of the roosts and dropping board. Repeat in about ten days. Then make a good whitewash and add one quart of crude carbolic acid to twenty of whitewash; cover all woodwork except roosts and top of dropping board with this wash. Paint dropping board and roosts twice a month with a good liquid lice killer and renew whitewash with the acid at least once a year—better twice.

If there are any ticks on the hens during the day, dip them in a solution of one part sheep dip to twenty of warm water, after which they must be dried or protected from the cold.

Buildings very badly infested to the point where the hens are dying had better be burned.

Riverbank. Frances Davis.

NO CATS NEEDED WITH GOPHER TRAP.

To the Editor: In the issue of January 15 appears an article on Experience in Trapping Gophers, by Mr. Brotherton.

I'm a firm believer in putting the best foot forward — in breeding stock or anything else—even catching gophers, and I'd like to suggest in the columns of your paper that Mr. Brotherton and others do not stop with a good enough trap called the "Macabee" or the like—with the aid of cats—but try a trap designed by my neighbor, Mr. J. Milo Wolfe, for the E. J. Chubbuck Co. of San Francisco.

This trap is called the "Ideal." It is a cylinder-shaped trap that fits into the holes of gophers and when they come out to feed, or carry out the dirt, or even see the trap and try to cover it up by pushing dirt on it, they are caught by claws which are on the end of the trap deepest in the hole.

A gopher cannot get past this trap and there is no missing him if he enters the trap, or just catching the skin as in cases with other traps. It is a sure catch, only when the gopher is so powerful that he can push about a foot of dirt before him, and that seldom happens.

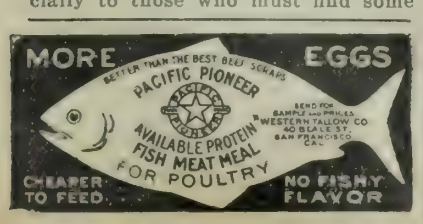
Your readers can find an advertisement of this trap in your paper and I am sure E. J. Chubbuck Co. will furnish all with literature describing this trap.

I have used this trap with remarkable success and I don't need the assistance of cats to get the gopher, and I would like to have Mr. Brotherton, especially, try one of these traps for he says, "It's a sure catch if set right." The "Ideal" is sure if set.

Stockton. J. E. Thorpe.

It has been found best to prune peaches and apricots right after the fruit is off in the Beaumont district, and then thin out excess brush in winter, but not cut back the new wood part way, as this induces too much waste wood growth.

Earl Henkings of Imperial county is erecting new quarters for his pure-bred herd of Duroc Jersey hogs.



Send For A Sample Of Calmade Graduated Poultry Fence



10 inches graduated in mesh from ½ inch to 1⅝ inches then 20 inches of 2¾ inch mesh, topped by 4½ inch mesh for the height of the fence.

The Fence Without a Sky Line

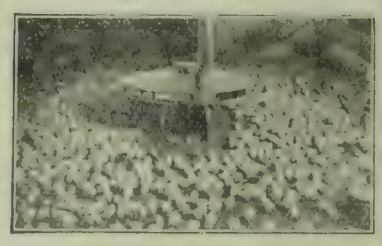
It is the most economical as well as the most practical of all poultry fences. It costs no more to buy than the old style poultry netting and costs much less to put up.

It is the only fence made with a bottom mesh smaller than one inch. It will turn the smallest chickens. Because of the straight line, continuous weave of "CALMADE GRADUATED" Fence, baby chicks won't hang in it, large fowls can't climb it.

"CALMADE GRADUATED" Fence will not slip at the joints nor unravel when cut. Uniform in weave and width. It unrolls flat as a board—it is easily put up and stretches without bulge, kink or bend on posts 16 feet apart. Learn all about these advantages and let your next fence be a "CALMADE GRADUATED." Write at once for free samples of wire used, free illustrated folder and name of nearest dealer.

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Pride of Petaluma, Fresh Air Brooder STOVES



This is our latest and best. It's self VENTILATING. Automatic in every respect.

MOIST FRESH AIR DIFFUSED from the base to chicks. It's the standard of reliability and economy. Don't fail to get our catalogue, or call and see us.

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Breeding Pens now mated with large-sized, healthy matured breeding birds. All open-air housed, thus promoting strong sturdy chicks.

STANDARD-BRED SINGLE-COMB WHITE LEGHORNS.

Hatching Eggs, $1.50 per setting	$5.00 per	100
Baby Chicks, February delivery	12.00 "	100
" " March "	10.50 "	100
" " April "	10.00 "	100

WHITE PLYMOUTH ROCKS.

Hatching Eggs, $2.00 per setting	$ 7.00 per	100
Baby Chicks, 20c each	15.00 "	100

In the Utility Class at the P. P. I. E. Poultry Show our Leghorns received 4 awards, and on Eggs 1st and 2nd.

Our White Plymouth Rocks received 7 awards, and on Eggs 1st and 3rd.

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Good Chicks should be Fed right by the Coulson Method

Full particulars in free book "Chickens from shell to Market"

Coulson Co., Petaluma Cal.

Farm Poultry for Profit.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

RAISING THE POULTS.

There are very few people who can raise turkeys with any measure of success in spite of the strenuous efforts they make. The reason for this is mainly because they fuss too much, feed too much and coddle too much. A turkey needs none of these things. What it needs and pines for is freedom, just to be left alone with Nature.

It is necessary to keep them in out of the rain and dew till the poults get strong, but they should not be driven around nor handled every time the feeder feels like it, neither should they be kept in hot, stifling brooders.

Give plenty of fresh air and moderate warmth, together with food that comes as close to Nature as you can get and there is no reason why you can't raise a fair proportion of either hen-hatched or incubator-hatched poults.

What to Feed.—This is the rock over which many stumble—what to feed and how to feed it. In the first place let the feed be soft and easy to digest. A bread made of one part middlings, one part corn meal, one part rolled or steel cut oats and one part fine flour, a little salt and a teaspoonful of red pepper mixed into a batter or dough with skim milk, then baked in a very moderate oven for two days, is very good.

Let the bread be baked several days before the chicks or poults hatch, then put it through a meat chopper or soak in skim milk, squeezing out the extra milk and feed a little every two hours the first few days.

This bread costs but little and is equal to Spratt's. If you don't want to go to the trouble of baking, better let turkeys alone. In addition to the bread, feed hard-boiled eggs, chopped fine with onion tops or fresh lettuce and a little rolled oats. Feed mash moistened with skim milk and a little charcoal, grit, etc., but don't feed hard grain.

It is feeding chick feed and all kinds of grain feed that causes indigestion in turkeys. The droppings get loose and yellow and then people think they have "black head." Give proper feed that the poults can digest and you will have no indigestion; feed grain and your troubles begin right away.

Let the poults have all the green feed they can eat, or sprouted oats if no other can be had, and as much freedom as is consistent. A little red pepper stimulates the digestive tract. It is not properly speaking a food, but a corminative, and is slightly stimulating in small doses; in large doses it would be harmful, so don't overdo it.

Keep the poults away from chickens, then they will not have many lice. But if they do get them be sure to get the dust box to work, for lice mean death to young turks.

GYPSUM FOR DROPPING BOARDS —BITTER KALE.

To the Editor: Is there any objection to using air-slacked lime on the dropping board after cleaning? It keeps them dryer and prevents bad odors. In the fall, kale that is not irrigated gets stale and bitter and fowls do not like it as well as corn stalks cut fine in the cutter; but some poultry keepers here think the corn decreased the egg yield. Can you give me some advice?—C. E. B., Petaluma.

[If the poultry manure is to be used as fertilizer, lime will drive out the nitrogen, thus destroying much of its value. We suggest the substitution of gypsum (land-plaster) for lime. It acts as a dryer and absorbs odors, besides indirectly it adds to the value of the fertilizer in nearly every instance. Green corn stalks are excellent green feed for fowls and usually should help to increase egg production. They run greatly to starch and sugar, and for that reason they will still further widen an already over-heating ration and thus bring about a decrease in egg production, while on the other hand if the hens are a little under condition because of a two narrow ration the cut stalks will bring them up rapidly and help to increase the egg yield. We have had no experience with bitter kale and can only guess at what might be the cause. A neighbor has raised more than an acre of giant kale each year for a number of seasons, without irrigation, and has not experienced this trouble. It may be due to some local peculiarity of the soil such as excessive subdrainage or to a hardpan that prevents the tap roots reaching a water supply. Can any reader who may have had similar trouble suggest a remedy?]

MISCELLANEOUS.

Dr. Griffith of Kings county reports that there is more livestock than usual there at this time but that there has been no scarcity of feed and very little disease, during the past month.

Those in charge of the Butte County Spring Exposition are planning on making the livestock show one of the features. It would seem as if there was room for a good livestock show in that end of the Sacramento valley at this time.

Members of the Napa County Livestock Ass'n held a meeting at St. Helena last week at which time a committee was apopinted to draft an ordinance providing for the protection of live stock in Napa county against contagious diseases which might be disseminated by indiscriminate shipping; another on coyote control, and a third to arrange for an exhibit at the next county fair.

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Poultry Breeders Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

GET YOUR DAY-OLD CHIX FROM ACTUAL PRODUCERS, who know what they have and who can stand back of their chicks. We are utility poultry raisers and our White Leghorn chicks this year are from pen of 635 that averaged 171.2 eggs each last year. Our Rhode Island Reds are also heavy winter producers. Owing to superior transportation facilities in Sacramento, quick delivery is assured. White Leghorn chicks, $12.50 per 100; Rhode Island Reds, $15 per 100. Book at once. Brooke Farm, 807 J St., Sacramento.

BABY CHICKS THAT PAY—Rhode Island Reds the best breed for the small ranch, when you consider their size, early maturity and winter laying qualities—the kind that pays to hatch early. We have them (any quantity) from A1 laying stock, hatched right; and know how to ship them for safe delivery. Write us for prices and circular—it will interest you. Roofden Poultry Ranch, Campbell, Cal.

LIVABLE BABY CHICKS—We are supplied by reliable Breeders and experienced hatchers. Better chicks cannot be had from any source. All varieties, any number. High quality birds, bargain prices, breeders, laying hens, pullets. **Free exhibit.** Everything in Poultry, Pigeons, Rabbits, Dogs, Cats, Canaries, Pets. Give us a call or write. **Fanciers' Exchange,** 642 S. Main St., Los Angeles, Cal.

ALL KINDS OF BREEDING and laying hens, roosters and pullets. Petaluma incubators, new annd used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minoreas, Buff, White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards. 2550 San Pablo Ave., Oakland, Cal. **Closed Sundays.**

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired **Heavy Winter Layers.** W. C. Smith, Prop., Corning, Cal.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. Lay most when prices highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for heavy laying. Eggs, chicks, stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

THE SANTA CLARA VALLEY HATCHERY can supply you with many different varieties of chicks. We stand by the chick and the chick speaks for us. Have four second-hand Jubilee Incubators for sale, 500 egg capacity. 500 growing White Leghorn chicks for sale now. Jos. A. Bihn, San Jose, Cal., Route 6.

WELL HATCHED AND STRONG day-old chicks from healthy vigorous breeders. White and Brown Leghorns per 100 February, $11, March $10, April $9. Reduction in quantities. Let us send you our announcement. San Jose Hatchery, 373 Meridian Road, San Jose, Cal. **Chicks well hatched are half-raised.**

WHITE PLUMAGE POULTRY FARM and Hatchery. Sells day-old chicks from healthy, vigorous breeders. White Leghorns at $10 per 100, $90 per 1000. Barred Rocks and Rhode Island Reds at $15 per 100. We sell the Victor Incubator and Brooder. Circulars free. H. A. Schlotthauer, Exeter, Cal.

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WHITE PLYMOUTH ROCKS—If you are interested in high-class stock, and want to buy as good as there are anywhere, write Mahajo Farm, P. O. Box 597, Sacramento, Cal., for catalogue Chicks. Eggs or Breeding Stock. Awarded all first prizes at California State Show, 1916

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BABY CHICKS AND EGGS—Hoganized Black Minorca, White Leghorn stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

S. C. W. LEGHORN EGGS for hatching from selected, strong and vigorous hens. All 200 egg type. 15, $1.50; 100, $6. Jay Maxwell, Madera, Cal.

WHITE ORPINGTONS AND BUTTERCUPS—Hoganized and Tested—220 egg strain breeders. Chicks and eggs for sale. M. S. Woodhams, San Mateo, Cal.

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FOR SALE—Thoroughbred Rouen Duck Eggs, $1.50 per dozen. Mrs. Emma V. Miller, Farmington, Cal.

PHEASANTS—Golden and Ringneck. Eggs from April on. T. D. Morris, Agua Caliente, Cal.

MAMMOTH BRONZE TURKEYS—Breeding stock. L. Riedel, Patterson, Cal.

The Home Circle Page of the Pacific Rural Press

TISSUE PAPER ROPE ART.

Imagine ninety women of all years and conditions seated at long tables in a department store, fashioning things of long, vari-colored strands of thick cord, almost too absorbed to cease for luncheon. Imagine cries of delight as this one gives shape to a hanging basket and that one to a lamp cover, or the exclamations of petulance as one discovers that she has made a mistake in the weaving and must undo half that she has wrought. Imagine with it all a certain atmosphere of fascination.

Do so, and you have an idea of a public demonstration of the tissue paper rope art work. It is a late fad that has struck the Pacific coast with extreme fervor.

The task entailed is much like basket weaving. The thick but light cord is made of tissue paper. It is braided into ornamental devices and then shellaced to make it waterproof and to enhance its appearance. The work is very simple but there is a knack about it that had best be learned from an instructor. The firm that manufactures the cord provides the instructors, one to each table. Needed are wire cutting pliers, paste and a supply of fairly stiff iron wire, tissue paper and the cord. The wires, to form the ribs of whatever is being fashioned, are first covered with tissue paper of the shade of the cord to be used, the paper being gummed onto the wire as it is twisted. Then these wires are cut into lengths suitable for the ribs of an article of the design chosen, and the weaving begins. The article is shaped by bending and the addition of more wires or the removal of some of them as the work progresses. Some very tasteful and quite often useful things can be made. The work is well adapted to invalids and the blind, a blind girl being one of the most successful and enthusiastic pupils at a recent demonstration.

The total cost of articles that can be made with this cord runs from fifty cents to $10, according to the nature of the article and the accessories needed. For instance, a cover for a parlor lamp on a tall stand needs the purchase of a plain lamp of that kind to be covered with the cord. But hanging baskets for flowers require little but the cord and a taste for the art.

SEWING LIKE DRAWING.

To cook a stew or to cut and sew a dress have a psychological value in the education of a young person, according to Mrs. Dona De Luce. It is not alone the practical knowledge gained that is of worth, according to this sewing instructor in the Berkeley High School, but there is also the spur to initiative given by the study of cooking or sewing. In a recent address she compared such study to the study of drawing as far as inspiration is concerned.

"This work is creative," she said, "and mistakes when made are soon and easily seen." In such studies she found therefore a great aid to the development of character through a properly guided will.

THE FIVE LITTLE FOX TERRIERS.



(Posed by little May Boesch of Glen Ellen, Cal., feeding her pets.)

Five little fox terriers hungry for more; one really got enough and that left four.
Four little fox terriers busy at their tea; one stopped to pick his teeth and that left three.
Three little fox terriers with an appetite for stew; one had to scratch himself, and that left two.
Two little fox terriers who've "only just begun"—one found he'd dined before and that left one.
One little fox terrier seemed never to get done, until he got the hiccoughs, and that left none.

COOK PORK WELL.

Pork, more than any other meat, should be cooked thoroughly before eaten. This is as a protection from trichinosis, which is communicated to mankind only through raw or rare pork. Trichinosis is a disease of the hog and is sometimes fatal. The hog becomes infested with trichina, microscopic worms. The federal inspection of livestock has developed that about one hog out of seventy-one suffers from it.

The one thing trichina can not stand is heat. A temperature of 140 degrees throughout will kill them if present and not impair the food value of the meat. A lower degree of heat for a very much longer time will also kill them, but the safe rule is not to eat pork in any form until it has been cooked. so that no part of it looks red.

A RHYMED RECIPE.

Here is a part of an old favorite corn bread recipe in rhyme, as it appeared in a cook book of the last decade:

Two cups of Indian, one of wheat;
One cup sour milk, one cup sweet;
One good egg that well you beat;
Half a cup molasses, too;
Half cup sugar add thereto;
With one spoon of butter new;
Salt and soda each a spoon;
Mix up quickly and bake it soon;
Then you'll have corn bread complete;
Best of all corn bread you'll meet.

EXPERIENCE EXCHANGE.

N. H. B., of Lodi, Cal., sends a plan of his kitchen that has proven the most convenient he has ever tried. The outstanding feature is that three sides of the room are lined with cupboards and closets; and starting both ways from the range is an ingenious continuation of the drain board along most of the walls as a handy aid to work.

We have to thank a reader, M. A., for the following recipe for a mulligan stew: 2 lbs. round steak, 2 good-sized onions, 4 medium potatoes, 1 pint canned tomatoes, 1 chili pepper, two or three celery stalks, and a few carrots or turnips if liked; salt to taste. The meat and vegetables are cut into small pieces. The meat is floured and browned in butter in a granite or aluminum kettle. Then pour boiling water over the meat slowly until well covered, and let it boil one-half hour. Then add vegetables, etc., and cook slowly until done, about one hour. The reader recommends round steak as most economical, and advises boiled rice as a side dish.

THIS WEEK'S BEST HOUSE-HELP.

To have an attractive suit for a boy under 6—buy navy blue serge and make him knee pants and a Russian blouse. He will be fixed until it is time to get him into store clothes.

SPANISH CREAM, A DELIGHTFUL DESSERT.

(This Week's Preferred Recipe.)

This is a kind of custard stiffened with gelatine, to be served cold. It requires 3 eggs, 3 cups milk, 1 tablesp. gelatine, ½ cup sugar. The gelatine is soaked for 15 minutes in a half cup of milk. The remaining milk is heated to the boiling point and the gelatine added and stirred until dissolved. The yokes of the eggs are beaten, and the hot milk gradually poured over them as they are being beaten until all the milk has been absorbed. This is put on the fire, preferably in a double boiler, until it thickens, stirring all the while. Stiffly whipped whites of the eggs are then stirred in, along with 1 teasp. vanilla flavor and a pinch of salt. The mixture is then poured into individual cups or molds and set away to cool. If the molds are wetted in cold water before filling, the cream may be turned out of the molds after it hardens.

MRS. BEST'S BULLETIN.

My Dear Friends:

I saw a throng of women in front of a show window, and joined the group expecting to see something extremely novel and thrilling from the fashion centers. But I was a little disappointed at finding only a display of marked-down costumes at clearance prices. My feelings reminded me of the little boy who was called posthaste to see the baby of the family which had just cut a new tooth. After inspecting it a moment Bobby turned away downcast, and said:

"Huh! From all the fuss you made over it, I thought it must be a gold tooth!"

However, scores and scores of women made "gold teeth" out of the January clearance sales, and picked up some wonderful bargains not alone in cloaks and suits, but in fabrics and all sorts of household necessities. For one who has money reserved for such a chance, last month, and even this month, came as a profitable feast.

The novelties are coming out, though. Saw a magenta-and-black checked walking suit with tan leather collar and cuffs. A black and white checked suit had white kid collars and cuffs. As I stated some time ago, the black and white check promises to be popular. The stores are showing cloth in that pattern in bolts for suitings, which proves that a great deal of confidence is felt in its popularity.

I hear, and I believe, that black silk for dresses will be very much favored. Black silk, however, is ALWAYS in the best of taste. Some ready-made designs are already appearing.

There was almost a riot of inquisitiveness in one store over a striking display of Milanese sport color silks at $2.50 a yard. The colors, with their exceedingly Frenchy names, are several shades removed from any familiar colors. Every woman paused to fondle the goods, and to admire or criticise. The whole display was made effective by draping the half dozen or so shades alongside of each other. One peculiar thing about them was that none of them seemed to clash with any of the others.

Japanese crepe paper Valentine lunch sets I saw at 50 cents, including a lunch cloth, 1 dozen decorated paper plates, 1 dozen doilies and 1 dozen napkins. A large cloth by itself I saw at 15 cents. Then there was a set of 2 dozen doilies at 10 cents. Plates separately could be bought at 35 cents a set in an elaborate finish.

There was some 27-inch velvet corduroy in the newest spring shades selling at 88 cents a yard.

A new bath room rug, 3x6, was in solid tints, woven in rag carpet fashion with bars of big white and black checks smothered in a vari-colored flower design. This was $4.75.

And then there was—but the other things I will leave until next week.

Devotedly, **Rosabella Best.**

(Note—Readers wishing information from Mrs Best, care of the Rural Press, will receive a reply if they enclose a stamped addressed envelope.)

FIRST DROPS OF RAIN.

By Sunbonnet Sue.

There is one delight none can deny me.

It is to listen to the first drops of rain.

The rain comes ever so softly. It seems to come as by stealth. Most often its coming is shyly by night.

It does not come brusquely, the rain. Its approach is not swift. The winds and the clouds are lingering heralds of its coming.

I speak of the gentle rain that I await like a friend, the rain that returns after a season of drouth, like an old friend to see if I'm angry.

Scenting the fresh incense of its coming, I await it. I may sleep, but 'tis the light sleep of the listener. For it steals up with the velvet tread of the mist. It may be already here though lost in the hush.

For such is the diffidence of my long absent rain that it seems to tremble ere it grows bolder. It does not awake me until the drops have fallen for minutes, and the roof is agleam with its moisture.

And then the long tin spout from the eaves rings once—PLING! 'Tis the very first drop that has rolled from the roof. Then PLING! again. I am fully awake.

'Tis as if the rain roguishly tinkled a little bell and drew its shy finger away; and then more confidently rang it again.

Now the tin spout goes ringing more gaily—P L I N G!-P L I N G!-PLING!-ING-ING-ING! It mounts to a drone as the roof sheds its burden of moisture to roll down the spout in a smooth stream without echoes. And the rain romps all about until the gutters go brimming with grateful applause.

"Bless you, good old rain!" say I and drop back on my pillow to sleep the more soundly.

For my soul has been soothed by greeting the first drops of the rain.

ALFONSO'S SILENCER.

Few of those who recently read in the papers that King Alfonso of Spain had celebrated his twenty-ninth birthday remembered that this young monarch has reigned longer than any other European sovereign except the King of Montenegro and the Emperor of Austria. Alfonso was born a king, and has reigned all the twenty-nine years of his life. Pearson's Weekly tells an amusing story of a visit he once paid, when he was little more than a boy, to a small Spanish town that is noted for a certain delicious kind of candy that is as sticky as it is palatable.

When the young King arrived, a deputation of the townsfolk waited on him and presented him with a huge box of the famous candy. At the same time a pompous man stepped forward with a large roll of paper in his hand, which he began to open. It was a loyal address, and evidently a very long one.

Now, King Alfonso loathes listening to addresses, so as the big man advanced, he handed round the box of candy among the deputation and made the would-be reader take a particularly large piece. Of course etiquette forbade him to refuse. As he worked his jaws up and down, his teeth stuck in the candy, and he could no more have read the address than he could have flown into the air!

BOYS OF BOSTON COMMON.

In the days of the American Revolution none of the colonists were more patriotic to their new land or more proud of their quest for liberty than those living in Boston. But in consequence of this they suffered most at the hands of the British soldiers. Even the children were mistreated by the Red Coats, and could not have their usual freedom, although they could not harm the king or his army.

The boys of Boston were fired with the spirit of their fathers. General Gage was the commander of the military forces of New England, and his headquarters were at Boston. During the winter, when the common was a camp, the British soldiers destroyed the boys' coasting grounds. The larger boys called a meeting and resolved to wait upon General Haldimand, General Gage's subordinate, and report to him the conduct of the soldiers.

When they presented themselves before him he asked with surprise:

"Why have you come to me?"

"We have come, sir," said the leader, "to ask punishment of those who wrong us."

"Why, my boy, have your fathers made rebels of you and sent you here to talk rebellion?"

"Nobody sent us, sir; we have never insulted your soldiers, but they have spoiled our skating ground, and trodden down our snow hills. We complained; they laughed at us; we told the captain; he sent us away. Yesterday our works were again destroyed. We can bear it no longer."

"Good heavens!" said General Gage, on hearing the story; "the very children draw in the love of freedom with the air they breathe!"

Turning to the boys he said:

"You may go; if any of my soldiers disturb you in the future they shall be punished."

Evidently.—A man traveling in Maine met a middle-aged farmer, who said his father, ninety years old, was still on the farm where he was born. "Ninety years old, eh?" "Yep, Pop is close to ninety." "Is his health good?" "Taint much now. He's been complain' for a few months back." "What's the matter with him?" "I dunno, sometimes I think farmin' don't agree with him."

Safer Not.—"I want to see your beauty editor," said the caller at the sanctum of a popular magazine.

"Are you following her advice?"

"I am."

"Got confidence in it?"

"I have."

"Then you don't want to see her."—Louisville Courier-Journal.

Super Patriot.—"Would you go to war for your country?"

"Would I go to war for my country? I'd do more than that. I'd lick any man that tried to get my country into a war."—Detroit Free Press.

Urgent. — The Doctor — "Mrs. Brown has sent for me to go and see her boy, and I must go at once." His Wife—"What is the matter with the boy?" The Doctor—"I do not know, but Mrs. Brown has a book on what to do before the doctor comes, and I must hurry up before she does it."

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The Chinese Woolflower

introduced by us last year has proved a great success everywhere and a most wonderful floral novelty. It is a Celosia of new form and easy growth Plants throw out scores of branches bearing balls of crimson wool nearly a foot thick. Also many laterals with smaller heads, and fresh green foliage. Flowers form in June but none fade before frost, continuing to expand and glow with its wonderful crimson-scarlet color, very showy and succeeds anywhere.

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Figures given are Independent and Reliable.

Pacific Rural Press Market Report

Prices quoted as paid to producers.

San Francisco, Feb. 16, 1916.

WHEAT.

The local market is steady and without much feature, the principal demand being for lower grades for feed, as the milling interests have made fairly good provisions for their requirements. The Eastern market shows some fluctuation on export conditions, but no definite new tendency has developed.

Cal. Club, ctl.	$1.80 @1.85
Northern Bluestem	1.97½ @2.02½
Northern Club	1.85 @1.87½
Northern Red	1.85 @2.05

BARLEY.

The speculative market is rather weak with little demand and spot feed is a little lower in sympathy, buyers being disposed to hold off. There is enough shipping inquiry, however, to hold the top grade steady.

Shipping, ctl.	$1.40@1.45
Choice Feed, ctl.	1.35@1.37½

OATS.

No further change is noted, the local demand being limited, with ample supplies for all nearby needs, while conditions in the north do not show any great strength.

Red Feed	$1.35@1.37½
Red Seed	1.45@1.65
White	1.50@1.55

CORN.

All grades are steady as before. Egyptians, kaffir, etc., are offered but are in good demand and attractive lots find ready sale. There is a good deal, however, that is in poor shape and will not bring full values.

Eastern yellow, ctl.	$1.80@1.85
Milo Maize	1.40@1.45
Kaffir	1.65@1.70
Egyptian	1.50@1.55

BEANS.

Prices continue on the down-grade, though there has been no very sharp drop in any line. Buyers have been taking very little interest since the holidays, and a good many holders are getting anxious to clean up, causing occasional slight reductions on the various kinds, though in a general way the market is fairly steady. The top figure on limas is a little lower this week, and small whites, which were extremely firm for a time, are now easing off, bayos also showing a slight decline. This appearance of easiness does not encourage buyers to get into the market, but the movement is sure to increase as stocks in consuming markets are reduced.

(On wharf, San Francisco.)

Bayos, per ctl.	$4.80@4.90
Blackeyes	3.50@3.60
Cranberry Beans	4.75@4.85
Horse Beans	3.25@3.50
Small Whites (south)	5.50@5.60
Large Whites	5.75@5.90
Pinks	4.30@4.40
Limas (south)	4.50@4.55
Red Kidney	6.50@6.75
Mexican Reds	4.50@4.65
Tepary Beans	4.00

SEEDS.

Alfalfa is getting a little more attention, as conditions are getting more favorable for spring planting, but the other lines quoted are quiet. The general trade in garden seeds is very active.

Alfalfa, per lb.	.19 @20 c
Melilotus Alba	6 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	4¼ @ 4½c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Sudan Grass	40 c

HAY.

Hay has been moving a little more freely for the last week, as traffic has been less interrupted by weather conditions, while the demand continues strong in many quarters The local demand is picking up a little, and considerable feeding is still necessary around the country, though with fair weather this demand will diminish from now on. Shipments to nearby states are also heavy, and the stock remaining at either storage or producing points has been greatly reduced Prices are accordingly very firmly held, with some prospect of further advance before new hay comes into the market.

No. 1 Wheat	$13.00@15.00
No. 2	11.00@13.00
Tame Oats	11.00@16.50
Wild Oats	12.00@14.00
Alfalfa	13.00@16.50
Stock Hay	10.00@12.00
Straw, per bale	.25@ .40

FEEDSTUFFS.

All descriptions are firm, under an active demand from all parts of the country, but values show no further change this week.

(Wholesale prices per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$22.50@23.00
Alfalfa Meal, per ton.	20.00@21.00
Alfalfa Molasses Meal per ton	21.00@22.00
Bran, per ton	26.50@27.50
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00@25.00
Cracked Corn	39.50@40.50
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Tankage	45.00
Rolled Oats	29.50@31.00

VEGETABLES.

The sudden arrival of spring weather has brought in the first asparagus of the season, which sells at a rather wide range of prices, according to quality. Offerings have been light so far, but are expected to increase rapidly, as the plants, held back by the long spell of cold, are making rapid growth. Other vegetables are easing off a little, though arrivals in many lines are still light, and some, such as tomatoes and eggplant, are coming from Mexico and Cuba. Rhubarb is somewhat easier, with liberal supplies. String beans are coming in again, while peas are high. Celery is lower, and still tends downward, as the supply is increasing. A good deal of very poor stock in various lines is appearing, and sells at low and irregular prices.

Cabbage, ctl.	50@60 c
Cauliflower, doz.	50@75 c
Sprouts, lb	5½ @6½c
String Beans	10@15 c
Peppers, bell, lb.	15@25 c
Rhubarb, box	1.00@2.00
Peas, southern, lb.	10@12 c
Tomatoes, L. A., crate	1.75@2.00
Eggplant, lb	20@25 c
Celery, crate	3.00@4.00
Artichokes, doz.	.65@1.00
Lettuce, small, crate	1.00@1.50
Asparagus, lb.	12½ @40 c

POTATOES AND ONIONS.

There is no quotable change in prices, except that there are a good many low-grade onions offered at 50 to 75c. per sack. Good stock is scarce and high, the demand being met largely with Oregon and Bermuda stock. Potatoes are very firm, and growers look for considerable loss to stock still in the ground from the long rain.

(On Wharf.)

Oregon Burbanks	$1.60@2.00
Salinas Burbanks	2.00@2.15
Delta Burbanks	1.10@1.65
Sweet Potatoes, ctl.	2.25@2.50
Onions, Delta, ctl.	1.85@2.25
Oregon	2.00@2.50
River Bermudas, crate	2.00@2.15
Garlic, per lb.	10@12½c

POULTRY.

Good young chickens are rather scarce at present, and as there is a good demand locally, prices are quite firm, broilers in particular bringing stiff prices. Old stock is easy, as there is quite a bit coming from the East, and hens are lower. Turkeys are lower, with little demand and most offerings unattractive.

Turkeys, dressed	25@27c
Live Turkeys, lb.	22@23c
Broilers, 15 lbs. to doz. and less, lb.	38@40c
do, over 15 lbs. to doz.	30@35c
Fryers	24@26c
Hens, extra, per lb.	17@18c
Small	17@18c
Smooth Young Roosters, per lb.	20@21c
Squabs, per doz.	2.00@4.00
Geese, per pair	2.25@3.00
Ducks, young, lb.	18@19c
Old	14@15c
Belgian Hares	9@11c

BUTTER.

Prices have not changed for the last week, the general range being a little higher than before, and considerably above last year's level. The tone is quite firm, as there is not much coming in, and some is being taken for outside markets.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32	32	—	32	32	32
Prime Firsts	29½	29½	—	30	30	30½
Firsts	28½	28½	—	29	29	29

EGGS.

Cold weather in the north has caused a strong demand in that quarter, and heavy shipments were made from this market Saturday, on account of which an advance was expected. Production in California, however, increased enormously in a few days, and the price has dropped to the usual low level of this season. The northern demand is dropping off now, and the market shows very little strength.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	26½	23	—	23	22	21½
Sel. Pullets	25	22	—	22	21	20½

CHEESE.

Arrivals of all descriptions continue rather light, and with a fair demand values are firmly held. Monterey cheese holds up to the former high price, and both Y. A.'s and flats are higher.

Y. A.'s, fancy	18 c
Fancy Calif. flats, per lb.	17½c
Monterey Cheese	18@19c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	34	33½	34	32	32	32
Eggs	29	29	25	25	24	21

DECIDUOUS FRUITS.

Apples have been moving off in good shape for the last few days, both locally and for shipment to interior points. The supply in storage is getting down to comfortable proportions, and prices in some lines have been marked up a little. A few boxes of pears are offered from cold storage, but not enough to be worth quoting.

Apples:

Pearmain	.85@1.25
Baldwin	.75@1.25
Oregon Spitzenbergs	1.50@2.50
Jonathan	1.25@1.75

DRIED FRUITS.

Local packers still report nothing doing in dried fruits, giving as the principal reason that there is nothing of any consequence left here. Interest at the buying end, however, is still very light. The larger packers do not appear to be taking any interest in the small lots that now constitute most of the country offerings, and it is difficult to place such lots to advantage, especially if there is a desire to realize on them quickly. There are occasional inquiries, however, and it should be possible to clean up everything at good prices. Prunes are in more demand than anything else in the East, as a good many shipments are going to Europe; and there is also a good shipping business in raisins. A slight concessionary feeling has been noted among some holders of prunes, of which buyers are naturally taking full advantage. Peaches so far receive hardly any attention, and apricots are little more than nominal. The New York Journal of Commerce says

"California Prunes for future shipment from the Coast continue to be ruled by an irregular feeling and easier tendencies appears to be developing in some quarters. Quotations however, show no material change. The weakening tendency is attributed by New York brokers to the fact that some of the smaller Coast operators are finding themselves forced to sell limited stocks to meet financial obligations, and in order to attract a demand are offering small supplies at low prices. From advices received by New York operators the statistical position occupied by the 1915 crop Californias is very strong and with the first signs of an increased demand prices are expected to advance.

"Exports continue to be made for Europe almost daily. The shipments are going forward to France and England principally. Shipments for one day last week consisted of 153,600 pounds for England alone.

"California Raisins are held firmly. Stocks are only available in moderate quantity, and, with a fair demand in progress and a good inquiry said to be in evidence both from buyers in the local trade and from foreign sources, holders are maintaining prices on a firm basis.

"Large packers of California Figs

WOOL SELLING AT HIGH PRICES.

There is decided activity in wool circles, both in California and Nevada. At least two large spring clips were contracted for in Nevada during the week, one at 21 cents and another at 21⅛ cents, and 4500 pelts were contracted for in the Bakersfield district at 21 cents. Whether these prices will be maintained later in the season, remains to be seen, but they will at least curtail selling at a lower figure for the present, or till such time as buyers can better size up the market situation. The general prosperity all over the country is keeping all of the textile mills of the East busy which, together with the European orders, has caused a strong feeling in all quarters. The Australian market is high and is expected to go higher and there is a possibility of dollar wool during the year. The old crop is about cleaned up, and there is not much doing in that respect.

Special Live Stock Market Report.

Live cattle prices have been marked up some this week, Nevada offerings being light as the hay shortage there has forced most holders to market earlier than usual, and with the exception of those held by packers there is practically nothing left. All of the feed lots will be cleaned out by the middle of March.

The change of weather has started feed in good shape and some grass cattle are expected by April I. The dressed beef market is firmer on choice light cattle.

The sheep market is somewhat stronger, supplies being almost exclusively from Nevada and Idaho. The situation here as regards wethers has not changed and no spring lambs have arrived as yet.

The hog market is still stronger and good grain fed stock will probably bring a trifle over our quotation. The situation is getting to a point where there is very little profit in hogs from a buyer's standpoint, but the keen demand will sustain the present quotations and may even cause some advance. Fresh pork consumption has naturally been curtailed with the rise in price, but the feeling is strong nevertheless. Growers are getting a little better than 6½ cents net and we look to see confidence restored among farmers as a result of this factor.

report that prices for all times have been temporarily withdrawn. Stocks are very light both on the Coast and on spot, with a moderate demand in progress.

"California Peaches and Apricots were extremely dull, practically no business being done in either line."

Apples	6 @6½c
Apricots, per lb.	9 @12 c
Figs, white	4 @4½c
Black	2 @2½c
Calimyrna	6 @7 c
Prunes, 4-size basis	5 @5½c
Peaches	4 @4½c
Pears	4 @7 c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6¾c
London Layers, 3-crown, 20-lb. box	1.25
Imperial Clusters, 6-crown, 20-lb. box	2.50
Bulk, layers, 50-lb. box	2.75

CITRUS FRUITS.

Grapefruit shows a considerably wider range on the San Francisco market as the offerings from different sections show considerable variation in quality. Lemonettes are slightly easier. Oranges and grapefruit are moving well locally, but the situation presents nothing of special interest.

The intense cold prevailing in the East together with the heavy shipments of oranges from California during the past few weeks have caused lower prices on the eastern auctions. At New York on Monday, Feb. 14th, navel oranges averaged from $1.80 to $2.70 per box, and lemons averaged from $2.40 to $3.50. At Chicago the same day, oranges averaged from $2.50 to $3.50, and lemons $3.75 to $4.25 per box.

Shipments from southern California last week were very heavy, averaging nearly 300 cars daily. Total shipments from that section for the season to Feb. 14th, were 6,128 cars of oranges and 1,573 cars of lemons; as against 5,489 cars of oranges and 938 of lemons to same date last year.

(Wholesale prices, San Francisco.)

Oranges, Navels	$1.50@2.75
Tangerines	1.50@2.00
Grapefruit	1.25@2.50
Lemons, box	1.75@3.00
Lemonettes, box	1.25@1.75

HONEY.

Values are quite steadily held, as stocks in the retail trade are getting pretty well cleaned up, and there is not much coming in. Anything of attractive quality should find fairly ready sale at the range quoted.

Water White, comb	13@15 c
Amber	8@12 c
Water White, extracted	7@ 8 c
Light Amber	3@ 4 c
Dark	2@ 2½c

NUTS.

Values are almost entirely nominal for California nuts. There are still a few offerings of almonds, but they are closely held, and are expected to clean up in the near future, the Exchange having been sold out for some time. Walnuts also are very closely sold out, and the trade is now running mainly on Manchurian nuts.

(Prices f. o. b. San Francisco.)

Almonds (1915)	Nominal
Walnuts (1915):	
Budded, per lb.	17½c
No. 1	14 c
No. 2	11 c
Jumbo	17 c

LIVE STOCK.

Lambs are coming in a little more freely from various directions, but prices so far are pretty well maintained. The only quotable change in the last week was a slight advance on light dressed steers; but live cattle are fairly firm, with no great pressure to sell. Hogs are still coming in rather slowly, and packers are taking all the good, heavy stock they can get at the figures.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, S. F.)

Steers, No. 1	7 @7¼c
No. 2	6½ @6¾c
Cows and Heifers, No. 1	6 @6¼c
No. 2	5½ @5¾c
Bulls and stags	4 @5½c
Calves, light	8½ @9 c
Medium	7½ @8 c
Heavy	6½ @7½c
Hogs, grain-fed:	
100 to 150 lbs.	7 c
150 to 175 lbs.	7½c
175 to 250 lbs.	7¾c
250 to 325 lbs.	7½c
Prime Wethers	7¼ @7½c
Full Wool Lambs	9 @9½c

DRESSED MEATS.

Steers	10½ @11 c
Veals, large	12½ @13 c
Small	13 @14 c
Prime Wethers	11½ @13 c
Lambs	15 c
Hogs	10½ @11 c

WOOL.

The recent buying movement has cleaned up the remaining California fall clips fairly well, and with a rather firm market in the East the outlook is favorable for the spring wool.

(Prices paid in the country.)

Sacramento Valley, lb. 18	@19 c
Southern, year's staple 15	@16 c
Six months	13 @15 c
San Joaquin (defective)	10½ @11½c
Northern, free	12 @15 c
S'thern Mountain, free	13 @14 c
Tehama Co., free	13 @14 c

HOPS.

The slight activity of a fortnight ago seems to have subsided, with no marked change in prices, the market being fairly steady.

HORSES.

No offerings of special interest have appeared in this market for the last fortnight, but it is understood that a number of local buyers are looking around the country for good stock. Good, sound drafters and chunks are in considerably demand here, and there is some call for stock as light as 1200 pounds, though anything much lighter is hard to sell. Values remain at the old range.

(Approximate values at San Francisco, based on auction sales.)

Drafters, 1700 lbs. and up	$250@300
Drafters, 1550 to 1650	150@225
Chunks, 1350 to 1500 lbs.	150@175
Wagon horses, 1050 to 1350 lbs.	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@ 75
Farm Workers	50@100

WEEKLY BUTTER AVERAGES.
Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	18.60	28.00		28.20
" 9	25.33	26.66	26.00	28.10
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	26.66	30.66	28.00	36.66
Feb. 6	26.68	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25

WEEKLY EGG AVERAGES.
Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 30	28.16	28.83	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50
Feb. 13	23.00	28.90	25.10	28.00

Publisher's Department

Volume III of "Etcheverry's Irrigation Practice and Engineering," has just been received. This book is the third of a set written by Prof. Etcheverry of the University of California and published by McGraw-Hill Company, 239 West 39th St., New York. It contains 431 pages and over 200 illustrations, covering fully the building of diversion works, canals, laterals, siphons, flumes, gates and distribution systems. Price $4 net.

A very handsome booklet has just been issued by the Department of Horticulture, University of Illinois, entitled "Prairie Spirit in Landscape Gardening," written by Wm. Miller. It sells for 25c. per copy and to any farm owner who wishes to learn about landscape gardening for the country, it will be invaluable.

A very heavy demand from the trade developed this week for our new book "2d Thousand Answered Questions in California Agriculture." We feel confident that this new book will create for itself a heavy sale as it becomes better known.

The weather for the past week has been fine for all kinds of farm activities. Tree planters have made the nurserymen feel fine through heavy orders. It looks now as though many more large plantings will be made than thought possible early in the season. Almond stock is running short and there are heavy demands for prunes and pears.

TRACTOR ADVERTISING THAT PULLS.

Pacific Rural Press: We have been using your advertising columns quite extensively in the last few months, advertising the Ideal Farm Tractor, and thought no doubt it would interest you to learn what results we have been obtaining from your advertising columns. From one issue of your paper in which we had an advertisement we counted over sixty inquiries, and they have been coming into the office in a steady stream ever since.

It is certainly very gratifying to us to know that there is a rural paper that is so widely read and which reaches so many ranchers throughout the state of California. A large majority of the inquiries we have received have been from the State, but we have also received replies from our advertisements in your paper from Honolulu, and from the states of Washington, Oregon and Arizona, and from several of the middle western states.

Pacific Metal Products Company.
Los Angeles, Jan. 26, 1916.

C. W. Hahn of Florida has just shipped the fifth car of cactus slabs from the Timm ranch at Dixon. Mr. Hahn states that cactus does equally as well in Florida as in California and does not have to compete in popularity with alfalfa.

Classified Advertisements.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

SUDAN GRASS SEED for sale by the rower, direct to farmer at a saving of 60 per cent—less than Seed dealer's prices! Choice seeds; none better. Send in your orders now while it lasts. Greatest forage crop known for dry or irrigated land. Better and finer hay than Timothy. **Wm. P. Spalding, R. F. D., No. 1, Box 64, Los Molinos, Cal.** 30c. lb. small lots; 50 lbs. and over at 25c, delivered.

SAVE MONEY ON YOUR PUMPING PLANT—We are reducing our stock of Gas Engines, Oil Engines, Centrifugal Pumps, Friction Clutch Pulleys, etc., and can name you very low prices indeed. Write us at once. Commercial Iron Works, 481-497 Fifth St., San Francisco, Cal.

MOGUL TRACTOR, 45 H. P.; used one season; fine condition; will demonstrate; have no use for it; will sell for half cost and give terms, or exchange for horses or mules Drills, discs and other farm machinery for sale. Address W. H. Hord, 704 Market St., S. F

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds $3.00 delivered. Order with remittance, WM. J. SCHROTH CO., 112-B Market St., San Francisco.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

APPLES!—Buy direct from producer. Newtowns, 90c; Bulk pack, 4 and 4½ tiers, equal proportion. No 2 grade for cooking, 65c. Edwd. A. Hall, Watsonville, Cal.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.

ASK FOR SNOW'S GRAFTING WAX—If your grocer does not have it, send to D. A. Snow, R. 3, Box 255, San Jose, Cal.

TREES AND NURSERY STOCK.

TRIBBLE NURSERIES, ELK GROVE, CAL.—Grafted walnuts and grafted paper-shell pecans. Exclusive propagators of Tribble, Mayette, Kerr Parisienne, Glady and Improved Franquette. 19 other varieties. Fine stock of almonds, prunes, Bartlett pear on resistant roots, and other fruit trees and plants. New list ready.

CALIFORNIA GROWN SUDAN GRASS SEED—Absolutely free from Johnson Grass or other Weed seed. Plant all you can of it; for Broody Chicks and laying Hens or stock of any kind you can't beat it. 30 cents per lb. Write for prices on large lots. Lasher's Hatchery, Petaluma, Calif.

CITRUS TREES—40,000 assorted—25c in tree row; 25c balled; subject to advance. All big, two-year-old stock. Choicest ever produced by anybody, anywhere, at any price. Lem A. Brunson, Santa Fe Springs Nursery. Office, 1120 Haas Building, Los Angeles, Cal.

BURBANK'S Spineless Cactus—Direct from the home of the originator, Santa Rosa, Cal. We are now offering the new improved varieties of forage and fruiting cactus for cattle, hogs and poultry. Write for our pamphlets and price list. J. I. Jewell, Santa Rosa.

WALNUT TREES — Late blight-resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California black root; as the California Black root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

BUY PURE CALIFORNIA DESERT GROWN SUDAN GRASS SEED (and avoid Southern States Johnson Grass). Send $1.00 for sample 3-lb. package, postpaid; special price on larger quantities. Send for circular. Eich & L. Ranch, Lancaster, Calif.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

WALNUT TREES—Eureka and El Monte varieties a specialty; also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

FRANQUETTE AND MAYETTE grafted on California Black. Sizes 3 to 10 feet. Prices reasonable. Special discount on large orders. Sunset Nursery, 525 W. San Carlos St., San Jose, Cal.

MELILOTUS ALBA OR SWEET CLOVER—Recleaned and good seed 20c f. o. b. Any quantity up to 2000 lbs. Samples sent on request. V. M. Shuey, Manzanar, Inyo Co., Cal.

FOR SALE OR EXCHANGE—1500 San Jose Mayette Grafted Walnuts. Six to ten feet. Price low or will exchange on light auto or good heavy team. Chas. Story, Rivera, Cal.

FRUIT AND ORNAMENTAL TREES—Almond, Prunes and Pears. Berry plants. We contract to plant and care for orchards. Panama Nursery Co., Concord, Cal.

WALNUT TREES—Grafted and Seedling. Also fine field-grown Ganter and Harman Avocado trees. Write for prices. Magnolia Nursery, Whittier, Cal.

SOUDAN GRASS SEED—California grown and pure. For prices write undersigned and state quantity wanted. George Boock, Los Molinos, Cal.

TEPARY SEED BEANS—1915 grown. Fancy recleaned, 7c lb. Order now; limited supply. Dean H. Potter, Shafter, Kern Co., Cal.

WAGNER'S CRIMSON GIANT WINTER RHUBARB—Subdivided plants. $15 per 1000; $2 per 100. G. E. Shelford. Healdsburg.

SELECT LOCKEFORD BURBANK—Rural and American Wonder Seed Potatoes. $1.50 per 100. N. H. Locke Co., Lockeford, Cal.

ETTERSBURG STRAWBERRIES—Plants: dozen, 25c; 100, $1.50; 1000, $10. Delivered. E. Welty, Ripon, Cal.

FOR SALE—Spineless Cactus, 1½c per leaf. Inquire Mrs. E. J. Gallagher, Brown's Valley, Cal.

TEPARY BEANS FOR SALE—Eight cents per pound. Robert Paulsen, Lockwood, Cal.

FOR SALE—Spineless Cactus Plants. Prices right. B. C. Engbert, Byron, Cal.

PRUNE TREES—12 cents. Walnuts, 30c. Cash Nurseries, Sebastopol, Cal.

FOR SALE—Asparagus roots. R. F. D., Box 30, Walnut Grove, Cal.

APPLES, PEACHES—10 cents. Gage Nursery, Corning, Cal.

WANTED.

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. R. Humphreys, Principal, Stockton, Cal., Box 704.

WANTED—Position as foreman or superintendent large orchard or vineyard. Middle-aged married man. No children Fifteen years' California experience one place. Best references. Box 206, Rural Press.

WANTED—Position as manager of large orchard, vineyard, dairy. Alfalfa and grain farming. By a man with many years of practical California experience. Reference. Room 336, Hotel Alpine, San Francisco.

WANTED—Party with some capital to take one-half interest in one or more crops nursery stock. Best location on coast. $1000 or more required. T. J. True, Lancaster, Cal.

NURSERYMAN WANTS WORK—Pruning, grafting in orchard or nursery. Greenhouse work if required. Address Robert C Morrison, care Box K, Auburn, Cal

WANTED PROFESSIONAL BUDDER to bud 10,000 seedling peach trees. Apply H. F. Pixley, Corte Madera, Marin county, Cal.

LAND FOR SALE.

NEW OPENINGS—Enlarged Homesteads. Nearly TWO MILLION acres GOVERNMENT LAND, different counties, plainly marked on COUNTY SECTIONAL Maps, $2.50, any County. Booklet, map circular FREE. STATE MAP, showing 600,000 acres of SCHOOL land opening over State, $2.50. Order TODAY. Checks taken. JOSEPH CLARK, Sacramento.

I OWN AND OFFER FOR SALE 475 acres of land situated in Solano Co. between Dixon and Winters. Good house and barns. About 80 acres graded for alfalfa. Food wells and irrigating pump. Adjoins the successful rice fields of this county. Price, $60.00 per acre. $10,500 cash and balance on easy terms. J. H. Petersen, Dixon, Cal.

IN THE HEART OF SANTA CLARA VALLEY one mile from Mountain View. 36 acres—6 acres prunes; also some cots. Small family orchard. 6-roomed house and necessary outbuildings. Fine water. Excellent soil. Owner desires to retire. Price, $18,000; one-half cash, balance time. Mrs. Thomas Hayes, Mountain View, Cal.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

WANTED TO HEAR FROM OWNER of good farm for sale. Send description and cash price. B. G. List, Minneapolis, Minn.

ORCHARD, ALFALFA, STOCK OR RICE RANCHES for sale or exchange. Alex. T. Gibson, P. O. Box 361, Chico, Cal.

WANTED GOOD FARM, or unimproved land from owner. H. L. Downing, 145 Palace Bldg., Minneapolis, Minn.

Willys KNIGHT
Sleeve-Valve Motor

For Better, More Constant, Longer Service

Let the city man have his poppet-valve motor if he wants one.

His garage around the corner will take care of it for him—"tune it up" frequently and remove the carbon and re-seat the valves every few thousand miles!

But you probably have no such nearby facilities.

You have to be without your car for days—maybe weeks—when engine repairs are necessary.

The great Daimler—England's best known motor car builder,—says: "if there is no repair shop within miles, own a Knight Motored Car."

It will give you far the most constant service—far the greatest total mileage.

For instead of getting noisy and losing power and flexibility, as all other types of motor must, from the very nature of their construction,—

The sleeve-valve motor will steadily improve with use without any attention beyond oiling.

Carbon in the sleeve-valve motor only makes it run the smoother and quieter—only gives it greater power and flexibility.

And it will serve you more and more efficiently for literally thousands of miles beyond the life of any other type of motor.

We believe the Willys-Knight is the most economical car, in the long run, which a farmer can buy.

It will give him better, more constant, longer service than any other car at anywhere near the price.

See the Overland dealer now and talk it over with him.

Catalog on request. Please address Dept. 503.

The Willys-Overland Company, Toledo, Ohic

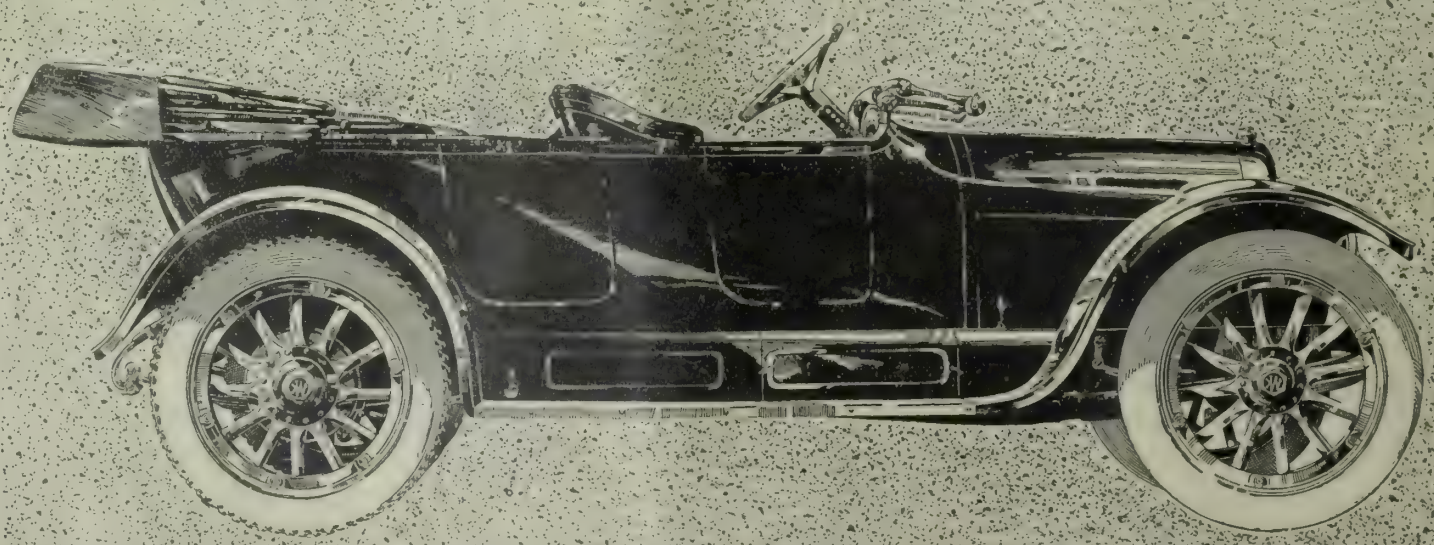
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Vol. XCI—No. 9. Forty-sixth Year.

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CALIFORNIA STATE

California State Library 7-1-

Imperial County's Dairy Opportunity.

Complete rations grown at home, year around succulence, cheap shelter, improving standards of dairymen, progressive creamerymen, who advertise their brands, by-product factories, and better bred stock, constitute Imperial County's dairy opportunity.

[Written for Pacific Rural Press.]

IN A COUNTRY which was a burning desert fifteen years ago, still isolated from all civilization by more desert, and by an almost complete circle of mountains, some 300,000 acres are today supporting thousands of homes for some 50,000 people. Around these homes are eucalyptus and pepper trees, some of them a foot in diameter, at six or seven years, and on these broad acres are growing alfalfa, grain, cotton, cantaloupes, fruits, vegetables and livestock, the last named being the principal source of cash income.

Many more than 100,000 cattle graze the grain and alfalfa fields, eat the meal of the cotton seeds and the corn of the milo maize, making quick profits for the wiry men of endurance and vision, who are unafraid of a thermometer which registers oftimes 125 in the shade.

They almost always have plenty of water from the Colorado river, which rises slowly to its highest flood of the year during the hot months when it is most needed. They get two to four inches of rain per year, which is about that much more than they want. "Absolutely the only use we have for rain here," we are assured, "is to refresh the atmosphere."

Winter Succulence. — It frosts sometimes in Imperial Valley, but not enough to prevent growth of alfalfa and barley well over knee high in the dead of winter. What does usually prevent such tall growth is the pasturing of hogs and cattle.

In this fifteen-year-old country of conditions unlike those that prevail in any other section of the world, there is much for the wisest to learn; and there is much already learned that has not come into general practice, because many of those who live on the land are still struggling to pay for it and for equipment and livestock, and because in other cases, absentee landlords do not understand needs and conditions.

Cattle Injure Wet Fields.—Because there are so many rainless months, but little provision is made for rain protection. Thus we see cattle humped up during the rains on green or muddy grain and alfalfa fields, tramping out perhaps two-thirds of the next season's possible yield, and using most of their feed and energy to exist, without profitable production of either meat or milk.

Signs of Improvement.—Here and there the wiser ones with capital are dotting the level landscape with huge silos, and these are protecting their fields from cattle in wet weather, while others pasture only the milo cornstalks when alfalfa would be damaged. A very few are providing effective shelter. On many of the farms, wind and water piled up the sand through the flood-and-desert ages which preceded irrigation, leaving knolls higher and drier than the surrounding fields. Most of the thoughtful ones have built their houses, barns and corrals on these knolls. Located elsewhere, even the light rains would produce almost intolerable inconvenience, for nowhere else on earth, we believe, does a little mud contain more stickiness. Yet, this same mud, smiled on a few hours by the sun and fanned by the wind, becomes mellow and workable.





Here and There the Wiser Ones with Capital Are Dotting the Level Landscape with Huge Silos, and These Are Protecting Their Fields from Cattle in Wet Weather, While Others Pasture Only the Milo Cornstalks When Alfalfa Would Be Damaged.

Dairy Production. — Of all the cattle in Imperial Valley, nearly a third are dairy cows, which produce nearly six and three-quarter million pounds of butter per year. This butter has, until recently, carried a more or less undeserved reputation for poor quality. The original reason for such a reputation was the poor and sometimes rotten cream delivered by the dairymen. Many herds were located ten, fifteen, or twenty miles from the creameries, and frequent deliveries were impossible. Colorado river water only was available even for drinking purposes, and this is muddy at all seasons. Wood, coal and oil were expensive delivered at the ranches, and very likely the milk and cream cans did not get much scalding even with the pond-settled water. Perhaps the creamery people also were careless; and hot weather did the rest. The butter was acknowledged to be poor. So, when poor butter from anywhere reached the market it was often sold as Imperial Valley butter, without improving an already bad reputation.

Butter Quality High.—"But things ain't like they used to be." The local manager of the largest creamery corporation in the Valley recently showed us the receipt for the large daily shipment to Los Angeles, in which every lot scored 93.

"That is not hard to do now, in this cool weather," said he. "We are getting frequent deliveries now; and while we expect to

(Continued on page 267.)

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California Weather Record.

The following rainfall and temperataure record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., February 22, 1916.

STATIONS	Rainfall Data: Past Week	Rainfall Data: Seasonal To Date	Rainfall Data: Normal To Date	Temperature Data: Max'm	Temperature Data: Min'm
Eureka	.17	29.01	30.06	68	46
Red Bluff	.40	17.70	16.35	78	46
Sacramento	.20	15.82	13.42	70	48
San Francisco	.29	24.38	15.69	72	48
San Jose	.04	14.59	11.24	74	44
Fresno	.22	9.16	6.21	74	44
Independence	.32	9.56	6.10	50	—
San Luis Obispo	.34	23.52	13.23	84	44
Los Angeles	.10	17.35	10.48	82	48
San Diego	.20	11.09	6.78	76	50

THE WEEK

THE week has surely been one of great action and interest. Two great citrus fruit displays have attracted thousands daily to Cloverdale and San Bernardino, and the point for the distant reader to consider is that these towns are about six hundred miles apart, and neither of them is in danger of falling off the edge of California. The next impressive point is that citrus fruits grow successfully in proper places throughout all this distance—which would carry you from South Carolina to Pennsylvania on the Atlantic coast. And all this is only one attribute of imperial California!

And while this single item may be taken as an exponent of the activity, achievement and capacity of the State at large, a token of metropolitan energy and alertness must be added to fitly represent the commonwealth of California. This week the San Francisco Convention League reports that during the five years preceding 1915 it secured for the city 118 conventions with an estimated attendanee of 140,000. For 1915 a total of 822 conventions was secured with an estimated attendance of 650,000 and an expenditure, at $70 each a week, of $45,500,000. Thus the league estimates that since its organization $55,300,000 has been spent in San Francisco by convention visitors. No wonder San Francisco is in the ears and eyes of the world; no wonder that achievements in the world's art, literature and industry hasten to claim attention in the Pacific Coast metropolis and count it as one of the world's great starting points for the conquest of fame. The other day Ex-governor Walsh of Massachusetts said: "San Francisco is really a city set apart, and destined for a most brilliant future. You let your city speak for itself, and it has a most eloquent way of saying things to all visitors, of your lively, thrifty, energetic people, your courage and enterprise, and, in short, your marvelous combinations of all these qualities."

And we count all this as gladness from the point of view of human progress and demonstration of possession of civilization and culture, which cannot be impeached for ambition which forgets humanity. For all these things add to the joys of living and promote the satisfaction in work which yields a living and the right to live well. Therefore, it matters little what your line of work may be, if it is honorable and useful to mankind, it gives you a right to resolutely claim your share in the unique growth and prosperity of California.

THE SPRING FLIGHT TO CALIFORNIA.

DURING the next two months we shall have a chance to see what effect the Expositions of 1915 will manifest upon those who, throughout this great country, are apt to choose the spring as the time to seek better places to live. Home-seekers in California will have the advantage of "colonists rates," which will bring people over the transcontinental railroads from March 25th to April 14th inclusive, at a rate, from Missouri river points, of $32.50 and from Chicago, $40.50. A tremendous influx of settlers to California is expected by railroad men this year. These are the people whom we most need and desire. The flood of European immigrants which we feared has been held back by the war—for a time, at least, and perhaps for a long time. The favoring rates from the Eastern States will add to our American population, and will help us to prepare for the larger influx of foreigners which will doubtless come later. Not that we are anti-foreign in our feelings, for we appreciate the throngs of good citizens of foreign birth who have done and are doing nobly in building up our industries and our citizenship, and they can learn Americanism as their predecessors from European countries have learned it. For this reason we take particular interest in this spring's increase in our population, and hope that it will be helpful to this State in building up its citizenship in ways to minister to the upholding of the best American standards of thought and action.

CAN MR. HAGGARD HOLD HIS BRITISH?

SPEAKING of emigration an interesting question is precipitated by the sailing from England of Sir Rider Haggard on a trip around the world, with a mission from the Royal Colonial Institute to investigate the chances for empire building after the war. His plan is to prevent the emigration to foreign countries of British soldiers and their families after the war, and to direct steady streams of these war veterans to the British colonies — South Africa, Australia, New Zealand and Canada, and the many insular colonies—"thus recruiting the population with a sturdy and intelligent class, and holding them within the British empire." It is plainly stated from London that the effect of Mr. Haggard's mission "would, of course, be to keep war emigrants from going to the United States or South American countries, where their status as imperial citizens would eventually be lost."

It is, of course, none of our business, whether the British take Britain, as the Dutch are said to have once taken Holland, or not. They have a right to build up their empire with their own people, or with any other people they, including Yankees, can get, for that matter, to 'ave and to 'old for good and all—and we wish them joy in doing it, for the British possessions are mighty good neighbors of ours. We can not, however, restrain our curiosity to see, a generation hence, how these assisted colonists will measure up with the self-willed British who will stem the imperial tide and come to the United States, against the current which Mr. Haggard will generate. And it is just that kind of self-willed British which we most desire. This country started with break-away British and break-away British can still help to keep it humming.

MOBILIZING FARMING WOMEN.

BUT the British are surely a long-headed lot and they have contributed a considerable amount of calculating coolness to the composite national trait of ours known as the American habit of mind. It may not be a part of Mr. Haggard's plan, but it will surely work in well with it—besides, it meets a situation now existing in the home country. It is cabled this week from London that the government has decided to organize a recruiting campaign for women to till the soil. Every village will be canvassed, and all who volunteer will be registered and given a uniform which consists of a coat, skirt, stout boots and gaiters. Already 250,000 men have been withdrawn from agriculture, and it is expected that 100,000 more will be lost to this occupation. It is essential that an army of at least 400,000 women be mobilized for field work, and the American traveler will not longer feel relieved as he crosses the channel to find that he has escaped from the rather distressing sight of women grubbing in the fields on the continent. Consolation must come from the thought that field-working by British women is only a passing experience born of necessity—and from the other thought that when Tommy Atkins comes marching home, there will be waiting for him a lot of farming "wenuses," one of whom he can clasp to his bosom, "stout boots" and all, and fly with her to "recruit the population" of the overseas empire under the pilotage of Mr. Haggard. We hope the government will not allow intimation of its long headed dream to penetrate the trenches, for Tommy might take to watching for Mr. Ford and forget to shoot.

PHASES OF PATERNALISM.

THE beauty of this great principle of paternalism, for and against which our people are so keen these days, is the illimitability of it. According to your point of view, you can neither get too much nor too little of it—therefore, it is a mighty good thing to fight about. Up the State, over a month ago, a mosquito bit the ear of a laborer on a country road. It does not matter whether he scratched his ear, or whether it was unclean, or not, because the doctrine of contributory negligence has gone by the board. And now the man thinks he ought to have pay from the county, under employer's liability, for loss of time, cost of treatment and recompense for pain. Well, why not? The bite of the mosquito is not an act of God, like a stroke of lightning, because we now have a law providing a way by which a geographical division of the State may kill mosquitoes, and if it can and does not, why is it not liable for damages to any

one who gets bitten? We cannot answer that question.

Again, we read about a Turlock cantaloupe grower who has invoked the aid of the Secretary of State to protect him from being sold cucumber seed for cantaloupe seed. The story, as printed, is that "the grower had between sixty and seventy acres under cultivation last season and that the cantaloupe seed he purchased under guarantee that they were Rocky Ford cantaloupes, turned out to be mongrel cucumbers. He says he contracted in advance of the season to sell his entire crop of cantaloupes"—and was no doubt badly hurt in mind and purse. We doubt the accuracy of the statement, because if he had legal guarantee from the seller, his line of effort for compensation would be plain enough. Probably he did not have guarantee, for it is not customary in the seed trade to give guarantees, but, rather, to publicly disclaim liability. If thus is this case, does the question go back to the old common law principle that the buyer must look out for his own interests, or is the grower right that the State should protect him from such hardship—and having failed thus to do, should the State compensate him for his loss and distress? We cannot answer that question either. This seems clear: that paternalism in the family, aside from the affection in it, is legally dissolved when the dependent becomes of age, and then in a way it is replaced by filialism, which has certain legal liabilities. But what about paternalism in a State? How does it ever get release? At a certain time or place, does it shift its burden upon fraternalism? Oh, well, we cannot answer that either. Until some of these things are settled we shall wear a bee-veil against mosquitoes, and watch the man while he takes our cantaloupe seed out of a muskmelon. There is the old maxim, God helps the man who helps himself, and we must admit that that seems to us a pretty good kind of paternalism.

OUR FIGHTING COLONELS.

WE ARE really sorry we joshed our colonels so hard last week, for they did not deserve it. They were really fighting valiantly, but we did not know it. Our idea of fighting is too old-fashioned, and we had an idea that, to fight, men had to go at each other. It has been explained to us that such is no longer the fact: that the way to capture the cliffs of Dover is to march off for Constantinople, and that to capture Berlin from Petrograd one has to go by the way of Bagdad. So you see our Colonels have been advancing all the time according to the principles of modern warfare and we did not know it—and we really ought to be shot for distrusting them.

To illustrate: Col. Weinstock has been fighting on several fronts during the week, as other columns of this issue show. He equipped and sent out from San Bernardino his southern expedition against the lost tribes of citrus growers—that 38 per cent which has been shooting carloads of oranges helter-skelter over the Eastern markets and making proper distribution impossible. The prospect is that he will route them inside of a week. On the east front he has proposed terms to the disgruntled almond growers and intimated to them that if they do not nestle soon he will flap them good and hard with the wing of the State. On the west front we understand he will reconnoitre the prune situation, and see how paternal uniforms will set on their rather knobby figures. So really, it has been a very active week along the line of letting the State do it, and results will be reported later, no doubt.

On the other hand, Col. Irish has been fortifying and trenching, and naturally has not consumed so much geography. He has been, however, practically just as busy. All last week he was moving for a central position in the Delta district, arranging to defend that country against political wind, which endangers the excellent work now going on for the improvement of the Sacramento river, and incidentally getting ready to put in several hundred acres of corn—which he will sell himself. He is acting on the conviction that if the State cannot sell onions, which advertise themselves so well, men must surely get nerve enough to sell for themselves other things which do not have that natural advantage. And so the war goes hopefully on. At first we thought we could stop it when we wished, but we are beginning to doubt it. You may find much about it in this issue.

Queries and Replies.

Querists must give name and address.

Which Alfalfa?

To the Editor: I am going to seed six acres to alfalfa next month. Seeing how they praise up the Peruvian alfalfa in the south made me wonder if it will do equally well here. I have never heard of anyone here using it. Does inoculation help to get a good stand?—J. A. A., Atwater.

Peruvian seems to be the best of the newer alfalfas, but we are not yet convinced that it is in all ways better than the common. If any one has clear convictions that it is, we would like to know it. In some places it seems to be a better winter grower. Inoculation will surely help alfalfa to grow, if the soil lacks the needful bacteria.

Transplanting Old Apples.

To the Editor: Will it make apple trees short-lived if they grow in the nursery until four years old and are then planted in the orchard? I set some out three years ago that were four years old; they all grew and have done better than one and two-year-old trees with the same care.—A Subscriber, Dunlap.

We see no reason why they should be short-lived as you have them well established and growing thriftily. You have done better than ordinary people would with four-year-olds, but you may live to see the younger trees outstrip them. They certainly will do it generally.

The Alder Flea-Beetle.

To the Editor: Can you tell me what kind of bug these are? I find them in dry grass. Where they are not disturbed they form in bunches. Are they a destructive bug? I have never seen any before to my knowledge.—W. J. B., Soulsbyville.

These are metallic blue-green beetles, nearly a quarter of an inch long, with a disposition to jump freely, which gives them their common name. Their scientific name is Haltica bimarginata. They are apt to occur in masses as you find them. They are waiting for the leaves to appear on the alders and willows, which they sometimes defoliate. These trees can be protected by spraying with lead arsenate. These lively little chaps are not charged with crop injury, although they might take to some garden plants.

When to Cut Back After Planting.

To the Editor: Some one-year trees just set out as received from the nursery have not been pruned. I am advised to wait until sap rises, as a preventive of sour sap. What think you? Is there any evidence as to the correctness of that theory?—J. J. C., San Francisco.

Your advice is given on the theory that sour sap is caused by engorgement. The fact is that probably it is caused by too little sap in the tissues, because the sap-receivers are destroyed either by rotting or drying, as soil conditions happen to be. Cutting after the sap rises promotes healing of the wound and may prevent dying back a bud or two—but you run the chance of the sap not rising at all because the loss of moisture through the whole remaining top may kill the tree before the growth of new root hairs can take more moisture from the soil. Therefore cut back immediately after planting as is the common practice. Carrying the whole dormant top is more apt to cause sour sap than to prevent it.

Painting over Fresh Cuts.

To the Editor: Can there be any harmful effect from painting fresh-cut wounds, over one inch in diameter, on apple trees, after disinfecting the cuts with corrosive sublimate? I have been told lately that the sap will collect under the paint and be held there, causing souring and decay, and that the wound should be left three to six months to dry before being painted. But will it not crack and become liable to infection from fungus, if not painted till fall?—R. B. P., Devore.

We have occasionally seen sap-pockets under paint-skins over amputations. It is better to allow the cut surface to dry and harden, but a few days or weeks is as good as the same number of months—in fact much better. There is not so much danger of crack-infection as you suppose. Besides the corrosive sublimate will protect the surface for some time. Go on with your pruning and do the painting at odd times next summer. In fact if you should forget to do it it would not matter much—except on cuts made by removal of large limbs.

Alfalfa and Sudan Grass.

To the Editor: Please find enclosed some alfalfa and inform me whether the seed is good enough to sow. What kind of alfalfa is it? Would it do to sow some sudan grass with it instead of oats?—Subscriber, Wheatland.

The way to get a test of the life, purity and, where possible, the identification of seed is to apply to Prof. J. W. Gilmore, University of California, Berkeley, in whose laboratory Miss Lute, an expert seed-tester of the U. S. Dept. of Agriculture, is constantly employed in this branch of the public service. It is best to write first for circulars stating character of sample to be submitted, etc.

As for Sudan grass as a nurse it is our notion that it would be worse than oats (if it grew from such early seeding as is usually best for alfalfa) because it would choke the alfalfa all summer, while oats will get ripe early and give the alfalfa a chance to grow. But it is pretty well settled that no grain crop should be sown with alfalfa. It is better, except perhaps at elevations where spring frosts are fierce, to give the alfalfa the whole ground and use no nurse-crop at all.

ACREAGE OF FRUITS, BEARING AND NON-BEARING, IN CALIFORNIA, 1915.

County	APPLES		APRICOTS		BERRIES		CHERRIES		FIGS		LEMONS		OLIVES		ORANGES		PEACHES		PEARS		PLUMS		PRUNES		WALNUTS		ALMONDS	
	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.
Alameda	130	.....	5333	980	95	...	1000	160	.....	.....	4	.....	50	.....	10	.....	40	.....	437	250	125	20	1704	250	100	.....	385	.....
Butte	500	400	85	20	80	...	85	35	155	80	25	30	1900	2100	2000	240	3000	775	400	.....	100	125	2000	2000	20	40	2000	900
Colusa	.....	.....	30	15	.....	...	.....	.....	20	.....	.....	.....	.....	.....	40	300	300	200	30	20	.....	20	1000	3000	40	50	300	2500
Contra Costa	160	96	500	250	20	20	200	88	20	8	5	6	143	5	13	5	600	290	800	917	100	51	1100	330	30	1300	1750	1000
El Dorado	350	225	.....	.....	.....	...	80	40	.....	.....	.....	.....	18	15	.....	.....	300	25	500	1000	300	550	.....	.....	10	30	.....	.....
Fresno	250	30	2137	613	.....	...	.....	.....	2919	.....	75	.....	502	.....	1788	.....	35000	.....	.....	.....	343	.....	981	.....	159	.....	.....	.....
Glenn	78	145	200	270	.....	...	.....	.....	15	355	58	320	42	230	75	2830	150	2750	25	593	.....	.....	210	820	5	170	200	1720
Humboldt	1100	450	.....	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30	450	.....	.....
Imperial	.....	.....	110	335	.....	...	.....	.....	52	113	13	9	52	143	73	198	32	198	37	103	18	25	.....	.....	.....	.....	.....	.....
Kern	100	1957	230	225	.....	...	.....	.....	14	57	.....	.....	40	525	450	1222	660	410	190	992	50	100	200	400	.....	100	.....	130
Kings	.....	.....	2118	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	360	.....	.....	7183	.....	.....	.....	.....	.....	1109	.....	.....	.....	.....	.....
Lake	242	10	31	2	20	...	10	.....	10	3	.....	.....	45	.....	2	.....	150	51	1460	1000	.....	.....	833	186	288	304	285	182
Los Angeles	927	650	1472	441	4296	...	.....	.....	84	69	3694	4965	1900	208	24407	8742	2922	3614	311	2388	491	295	229	21	8901	6240	437	.....
Madera	200	.....	2001	.....	15	...	.....	.....	150	125	.....	.....	175	690	10	.....	550	900	15	.....	.....	45	75	.....	.....	47	50	.....
Merced	70	37	230	110	60	...	7	10	500	540	14	10	10	7	.....	.....	37	145	255	725	35	.....	335	275	10	.....	430	410
Mendocino	450	665	25	45	.....	...	50	25	20	25	.....	.....	194	70	49	40	5000	1121	85	79	42	44	40	170	35	185	25	19
Modoc	265	325	.....	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Monterey	3000	1150	800	600	150	...	10	5	.....	.....	.....	.....	.....	.....	.....	.....	100	.....	80	100	.....	.....	40	25	5	15	10	35
Napa	400	120	160	90	59	12	350	125	50	6	12	28	200	.....	20	23	500	82	425	235	100	24	3000	1200	160	90	.....	.....
Nevada	1500	250	15	5	50	10	75	20	20	5	.....	.....	5	.....	10	.....	350	300	600	1200	110	240	110	.....	20	50	25	.....
Orange	150	220	1500	160	200	...	.....	.....	.....	.....	3000	1550	386	.....	9806	6500	50	1000	.....	.....	25	.....	.....	.....	12000	1900	.....	.....
Placer	450	.....	12	.....	500	...	350	.....	45	.....	.....	.....	320	.....	350	.....	7000	.....	1500	.....	5500	.....	.....	.....	.....	.....	250	.....
Riverside	817	2522	2688	3323	23	...	29	334	7	16	2586	2368	1559	503	16363	3112	1837	1057	310	639	30	39	490	125	410	1592	999	426
Sacramento	400	100	490	75	2000	...	370	200	10	.....	15	20	720	740	950	800	1880	950	3000	2000	1350	600	690	500	.....	150	1060	750
San Benito	400	25	2500	1000	300	...	100	25	.....	.....	.....	.....	.....	.....	.....	.....	700	200	350	100	.....	.....	3000	1000	30	150	200	100
San Bernardino	1278	6550	1652	830	.....	...	43	80	.....	.....	2602	2335	572	652	33390	7717	6703	2712	115	319	42	31	.....	85	649	1407	.....	.....
San Diego	1110	221	113	98	.....	...	8	10	10	10	3016	1664	1500	74	1262	114	503	255	118	67	17	37	48	56	116	216	85	21
San Joaquin	20	70	1000	.....	.....	...	1800	700	80	25	.....	20	600	300	20	50	7000	6000	800	1500	500	1000	600	1500	200	2000	2000	1000
Santa Barbara	400	100	150	170	.....	...	160	125	.....	.....	900	350	40	.....	7	.....	50	500	75	3285	.....	.....	50	279	106	60	.....	.....
Santa Clara	342	407	8434	388	.....	...	1876	986	46	26	20	15	450	105	5	2	.....	.....	20	.....	.....	.....	.....	.....	4800	800	238	75
Santa Cruz	15500	1100	1200	1000	500	...	150	200	.....	.....	15	60	135	52	18	11	5463	355	1400	185	3915	162	54280	4206	563	196	.....	.....
Shasta	228	114	10	7	110	...	6	7	10	5	.....	.....	.....	.....	1	1	100	100	50	325	.....	.....	300	.....	.....	.....	35	.....
Siskiyou	650	345	15	.....	80	...	45	30	.....	.....	.....	.....	140	250	5	3	324	454	100	15	25	150	760	130	37	40	5	1
Solano	.....	.....	1300	150	.....	...	700	300	.....	.....	.....	20	.....	.....	.....	.....	175	25	40	10	65	50	15	5	2	12	1000	415
Sonoma	5007	3771	582	23	1500	...	655	589	102	.....	8	2	20	.....	10	20	4200	600	1000	230	2521	1520	4345	1800	.....	.....	106	17
Stanislaus	119	5	388	217	85	...	33	27	246	37	7	2	700	.....	106	15	700	419	1097	554	102	45	7687	3004	328	278	912	1109
Sutter	157	20	20	.....	.....	...	42	27	179	.....	.....	.....	74	45	105	50	3754	399	138	65	14	75	52	146	20	379	1500	998
Tehama	500	50	600	50	.....	...	.....	.....	100	.....	.....	.....	50	25	.....	.....	2852	2756	221	109	80	3	787	888	15	239	500	400
Tulare	375	155	225	350	15	20	10	20	325	685	625	775	1500	450	225	75	3500	600	450	100	100	.....	1200	500	.....	.....	30	220
Ventura	.....	.....	2016	2421	.....	...	.....	.....	.....	.....	1713	2879	800	3050	19750	22550	7845	1500	45	30	450	250	2550	1450	10	250	.....	.....
Yolo	30	.....	1900	25	260	...	.....	.....	300	15	.....	.....	.....	.....	1386	862	.....	.....	.....	.....	.....	.....	.....	.....	5064	1412	3500	1100
Yuba	430	75	80	25	50	56	25	25	120	200	25	.....	450	75	60	15	1950	100	900	125	600	150	1450	225	40	10	135	50
San Luis Obispo	345	50	117	240	.....	...	.....	.....	.....	.....	10	.....	350	900	160	30	765	300	500	330	260	100	280	200	250	200	150	1895
Total	38410	22430	40898	14555	10468	112	8269	1193	5709	2113	18442	18228	15642	11574	112926	55527	113725	31183	17779	19649	16410	5751	91470	24774	34453	20362	18602	15475

Present Knowledge of Citrus Fertilizers.

[Summary of lecture by Dr. H. J. Webber, Citrus Experiment Station, Riverside, Cal., given at National Orange Show, San Bernardino, Cal., Feb. 19, 1916.]

The citrus grower in determining the methods of fertilization best to use in his grove is confronted by a maze of contradicting so-called facts and theories. It is at present impossible to decide on any particular system of fertilization that can be said to be the best or that can even be recommended unhesitatingly as good. The whole subject is being investigated through the combined efforts of growers and the scientists of the College of Agriculture and of the United States Department of Agriculture. Information is accumulating from which in a few years a more rational method of fertilization of citrus orchards can undoubtedly be formulated. In the meantime orchards must continue to be fertilized. Can any suggestions of value be derived from the various experiments at the present time? The following disconnected comments on the results of various experiments may be of some value as throwing light on certain problems.

The factor that seems to stand out most prominently in various experiments and in the experience of good growers is the great importance of adding organic matter to the soil. The great majority of our desert soils are apparently lacking in humus. The most satisfactory methods of increasing the organic matter in the soil is apaprently through the growth of leguminous cover crops, such as bitter clover (Melilotus indica) and purple vetch (Vicia atropurpurea), and the use of such materials for fertilizers as stable manure, alfalfa hay, bean straw, and the like. Our understanding of the reasons for this beneficial action of organic matter is as yet very imperfect. Organic matter is known to open up the soil, render it lighter, and better the tilth. Such soils are more porous and take the irrigation water better, and do not seem so prone to form a plow sole. An abundance of organic matter in the soil also favors the development of the bacterial flora of the soil that are known to be of such importance in breaking down and transforming the various manural elements into forms soluble and available to the plant.

The evidence available regarding the use of cover crops points strongly to the greater value of using leguminous plants instead of cereals or other non-legumes, primarily because the legume not only adds organic matter but also nitrogen, and furthermore because the experience in growing legumes in orchards and with other crops indicates that there is no detrimental effect produced by associating these plants together.

Of the various plant food elements that are usually applied as fertilizers, nitrogen in California soils is by far the most important. From what source the nitrogen should be taken at present would seem largely to be a question of economy only. The one exception to be made to this statement at present is in the use of nitrate of soda. The experiments at the Citrus Experiment Station that have been under way for nine years clearly show an accumulating injury from the continued use of this material. Plats fertilized with nitrate of soda for several years gave excellent results, but later became badly mottled and began to fail. After nine years their condition has become serious, no fruit of any value being produced. It may be that the use of certain other materials along with the nitrate of soda would have retarded this injury, but in a region where the soils are practically all in some degree alkaline, it would not seem a wise policy to add continually still larger quantities of sodium. As nitrate of soda contains a dangerous element, its use in the fertilization of citrus trees in California should be discouraged, particularly as many other sources of nitrogen are available at as reasonable cost. Dried blood, tankage, sulphate of ammonia, nitrate of lime, and many other sources of nitrogen are available at as reasonable cost, and no question of injury from their use has yet been found.

A factor of great practical importance is found in the possibility of using such home-grown products as alfalfa hay, bean straw, and the like. These materials are rich in nitrogen, and in using them the grower is also adding large quantities of organic matter as well as small quantities of phosphorus, potash, and other desirable elements in about the proportion usually needed by plants. When such materials can be obtained at a fairly reasonable price, the value of the nitrogen in them alone would justify their use. As an illustration, alfalfa hay contains usually about 2.25 per cent of nitrogen, so that at $8.00 per ton one would pay but $3.55 per unit of nitrogen, which is much cheaper than it can be obtained from most sources. The same is also true of bean straw. No special statement need be made regarding the use of all stable manure available. There is apparently no better material to use in an orange grove in California.

The general use of home-produced materials such as the above will add greatly to the wealth of California products, and where they give equally good results is certainly to be encouraged. Doubtless millions of dollars have been expended for imported materials that might more probably have been expended for home products and have assisted in building up our own industries.

Phosphoric acid, which is a principal ingredient in all of our fertilizers, has in some experiments given indication of increasing the yields slightly, but its importance is not so clearly evident as that of nitrogen. It would seem, however, that the application of some phosphorus will prove of practical value. The comparative value of raw rock phosphate and super-phosphate has not yet been fully determined.

In times past large quantities of potash have been used in fertilizing orange groves, the sulphate of potash being almost universally used. In the experiments at the Citrus Experiment Station three plats treated with potash for nine years have given an average yield little or no larger than three similar plats to which no fertilizer was added. The indications at present are that potash is a fertilizer of doubtful value.

CALIFORNIA'S FRUIT ACREAGE.

The above tabulation of the fruit acreage in California is furnished us by George W. Weldon, chief deputy of the California Horticultural Commissioner. While there may be inaccuracies in it in places, it is probably the most reliable set of figures of the kind ever compiled in this State. The table is of value as a basis for estimating fruit production.

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An Appeal to Almond Growers.

[By Col. Harris Weinstock, State Market Director.]

The attention of this Commission has been called to the fact that the effort of California Almond Growers' Exchange to market California almonds at prices remunerative to the producers is more or less hampered by the fact that the producers who are not members of the Exchange and who sell to the speculative buyers, afford such speculative buyers ammunition with which to demoralize and kill prices to the ultimate injury of the grower.

A letter received from the New York representative of the California Almond Growers' Exchange has been shown me which goes on to recite that certain California packers are offering to sell California almonds at ⅛ of a cent per pound less than any price which may be quoted by the Exchange. It can easily be seen how demoralizing this sort of competition must be.

There is a natural conflict of interest between the Growers' Exchange and the speculative buyers. The speculative buyers seem to feel it to their interest, if possible, to kill the Growers' Association and the method seemingly pursued is to endeavor to create dissatisfaction at both ends of the line. To the eastern buyer is offered a price a fraction under that of the growers' organization, while discontent is caused at this end of the line by paying to a few growers a little more than can be realized by the organized growers —the object being to cause talk—a proceeding perfectly safe and practical, as the net cost can easily be made good by averaging high buying against low buying—successful in the principle that the happy grower will shout aloud his advantage, while the farmer who receives but little will be silent. But this method, pursued to its logical end must mean that if it succeeds, in due course it must destroy the Exchange, and the producer at this end finds himself at the mercy of the speculative buyer and the consumer at the other end must pay a maximum price.

It must therefore be plain that the producer who does not stand by his organization and resist the temptation of a temporary better or equal price, is sacrificing tomorrow for today. The wise man would rather sacrifice today for tomorrow, because the present is brief and the future is long.

There is a natural struggle between the producer and the speculative buyer, each seeking as nearly as possible to control the output,—the producer, in order that he may get a remunerative price for his product and that it shall not needlessly be forced into competition with itself; and the speculative buyer, in order, if possible, to eliminate or curtail impertinent interference on the part of the producer.

In the interest of and for the welfare of the State, it is far more important that the great body of producers shall get remunerative prices for their crops than a comparatively few speculative buyers shall make big profits.

An appeal is therefore made by this Commission to the Almond growers of the State, who are not already members of their organization, to become members and to support its management in its earnest endeavor to insure for the Almond grower a fair price for his product not only this season, but every season. As can easily be understood, this can be done only if the supply is controlled and distributed by the producers collectively through their organization.

DARKENING OLIVES.

To the Editor: Please tell us if ripe olives that are cured for market have something put in to keep their color. I cure perfectly black olives when put into lye, but when done they are mottled and of greenish cast.—Subscriber, Oakley.

[Answered by Prof. Bioletti.]

[I know of no chemical which can be legitimately used for retaining the black color of ripe olives. The color is kept intensified by skillful handling of the lye treatment and exposure to the air at intervals during this treatment. The exact method used varies with the different producers who make more or less of a mystery of the matter. In a general way the process consists of a partial lye treatment with a fairly strong lye, one and one-half to two per cent, followed by aeration for 24 to 48 hours and a supplementary treatment with a weak lye, say from three-quarters to one per cent, until the lye treatment is complete, with supplementary aeration with the weak lye treatment if necessary.]

APPLE ROOTS PRUNED.

Apple trees six years old persisted in making standard trees though as persistently winter-pruned to make them dwarfs. At that stage their management was taken up by E. S. Malis, now of the California Polytechnic School at San Luis Obispo.

They stood beside a thoroughly fertilized asparagus bed. Their youth, winter pruning, and the fertilizer made them grow wood, but very few fruit buds. Malis cut off some of their main roots in late April, summer pruned the tops, did not winter prune any more, kept them thus to the dwarf size, and in the second season got "quite a crop" from them.

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State Will Aid Orange Shippers.

The following address by Col Weinstock at the 48th Fruit Growers' Convention held at San Bernardino, February 18 and 19, as well as the resolution that follows, is of interest to those who are desirous of state aid in marketing farm crops: "My message to the citrus fruit growers of California is that they must do two things to get the best results for their products in the eastern markets: They must pack their products in such shape that they will come up to standards. They must invite State inspection in order that in addition to their local shipping labels, the State label may be placed upon their product. In this wise they will be capitalizing the good name of the State to aid them in getting the confidence of the eastern buyers and consumers for their fruits, which to the grower ought to prove a most valuable asset.

"Then they must urge their shipping companies or their co-operative associations, through whom they ship, to join and co-operate in establishing the proposed State Bureau of Distribution so as to prevent the glutting of eastern markets which always has and always will mean a great waste at the expense of the producer. One of the things that has restrained producers and shippers from establishing a clearing house which might be regarded as a monoply was the fear of being prosecuted under the Sherman Anti-trust Act for activities in restraint of trade.

"Attorney General Webb, however, makes it clear in an opinion rendered by him to me that the State can engage in such activity without violation of the Sherman Act, since it would be done without any aim on the part of the State to make a profit for itself or to fix or control prices, but in the interest of the common good in the interest of the consumer as well as the interest of the producer.

"The consumer is as much a victim of gluts as is the producer. The glut means a feast today with possible prices to the consumer below cost of production. A glut today as a rule means frightening off the shipper tomorrow thus causing famine tomorrow with excessive prices charged to the consumer.

"What the consumer should have is a regular and steady supply which in turn means a regular and steady price, spelling for him in the long run a lower average price than when there are violent fluctuations in price."

After further discussion of the subject of marketing the convention adopted the following resolution: Resolved, That the chairman of this convetion be hereby instructed and authorized to appoint a committee of seven whose duty it will be to get all citrus fruit shippers, shipping companies, buyers and growers' associations to pledge themselves in writing on or before April 1st, 1916, to join in supporting the State Bureau of Distribution; that such committee, for the information of the growers, shall through the press apprise the growers on or about April 1, 1916, of the names of those who have so pledged themselves: That the following pledge shall be circulated by the committee among the shippers, buyers, shipping companies and growers associations for their signatures:

"We the undersigned, hereby agree to become adherents to the State Bureau of Distribution to be organized by the State Market Director for the purpose of routing and diverting the Eastern citrus fruit shipments in such manner as to prevent gluts and to get to each market its maximum supply, it being understood that the car dispatcher who is to perform the service of routing and diverting the cars shall be nominated in conference by the representatives of the adherents to the State Bureau of Distribution and appointed by the State Market Director, it being further understood that the Market Director will appoint as an Advisory Council to the car dispatcher, such representatives of the adherents as by them may be chosen, it being further understood that the adherents will continue to operate East and West in the same independent manner in which they have heretofore operated, reserving to themselves the right to retain their present Eastern machinery for distribution and their present Western machinery for securing and making shipments, it being further understood that the proposed Advisory Council will arrange schedules and quotas of distribution that as nearly as possible will be just and equitable to the adherents, and that the fruit will be routed and diverted in a manner to respect so far as possible the preference of the owner of such fruit."

Curing Walnut Blight.

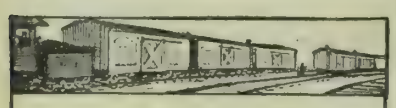
[Written for Pacific Rural Press.]

"I believe that only sick walnut trees get blighted. I believe anyone can make a tree so healthy in this country that it will resist blight," says G. E. Franklin of Carpinteria.

"You can graft or bud from a blight-resistant tree onto one which blights and the resulting growth will blight. That is because in grafting, you let more wood grow than you have cut off. The trouble with the blighted trees is that their tops are weakened by growing so much that they overbalance the root system. It is the fruit and leaves that are naturally first hit."

Mr. Franklin claims to have trebled the crop of salable nuts from a 20 year "Rib Softshell" tree which has been treated four years, and has eliminated the blight, though nearly all of the 300 trees in the same orchard have some blight. The leaves on this tree are doubled in size, and when seen Jan. 7, a large proportion were still on the tree and green, having shaded the nuts till they were harvested. Seven 50-pound sacks of nuts were picked up from this tree last fall. Another one treated three years showed great improvement, but still some blight. His brother cut many smaller limbs from another orchard in the winter of 1914-15, greatly improving quantity and quality of last year's crop.

"Four things are necessary for blight control." (1) The soil must be right for walnuts; (2) the tree must have proper cultivation, fertilization, and enough water; (3) if it blights then, cut off a big limb close to the body. This is to relieve the strain on the roots and make the rest of the tree healthier. If a big limb is cut at a distance from the crotch, in two years it grows more wood than ever and is in a worse condition; (4) if blight appears



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again, cut more big limbs until the roots and tops are balanced. If you cut a tree with too much top, you will get bigger and better nuts. Perhaps invigoration of the roots might serve the same purpose by providing the conditions mentioned in (2).

Last fall, Mr. Franklin became so convinced of the worth of his method that he cut at least one big limb from every tree that had shown the disease. Several big ones had been cut from the one treated four years. All of the big wood cut out last fall made a pile of 8 or 10 cords.

These cuts should be made as soon as the crop is off, so the tree won't bleed and will begin to heal at once. Protective paint should be kept on in good condition year after year to prevent the inside decay. If big cuts are made too late in winter they are likely to bleed till summer.

Young trees can be trained with a smaller top than blighted trees usually have in comparison with their root systems, and thus the big cuts will be avoided.

SUPPORTS COUNTY QUARANTINES.

To the Editor: In regard to the editorial comment on inspection duties of the county horticultural commissioner and Mr. Hecke's remarks on same.

You maintain that a quarantine established at the State line would answer in place of the present state and inter-county quarantine.

[The suggestion was that it would make the state quarantine more complete and trustworthy.—Editors.]

If there is a necessity to establish a quarantine station at the state line, to inspect trees or fruit produced a mile or more beyond that state line; then what objection could there be to a county in the north rejecting certain products from the southern section—some seven hundred miles distant?

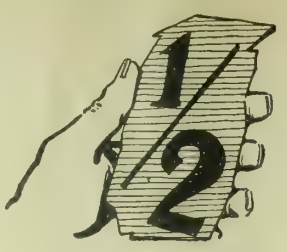
As an illustration of a particular inter-county quarantine: In Butte and Sutter counties, we quarantined all stone fruit trees from districts where peach root borer is known to exist. In these two counties we have thousands of acres of almond, peach and prune trees, and do not have this pest. Whereas in the Santa Clara Valley one may see men out in nearly every orchard digging little basins about the trunks of each tree and then ramming a wire in the burrows of these borers, to kill them.

Previous to the establishment of this quarantine I have personally condemned thousand of nursery trees from the Bay region, because they were infested with borer. And I believe the commissioner from Sutter has had the same experience.

As to the lack of support accorded the county commission in this inspection of trees: In order to properly perform our duties it is not necessary to have applause from any one; but to use a vulgarism, "You never miss the water until the well goes dry." Similarly, the growers will not miss these county ordinances until they have the delightful experience of standing on their heads while punching a wire down the burrow of the Peach root borer.

Oroville. Earle Mills.
Butte County Horticultural Commissioner.

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BOX 18——FRESNO——CALIF.

What Co. Horticultural Officers Should Do

The following are notable prophetic paragraphs from an article by G. H. Hecke, County Commissioner of Yolo County, to which editorial reference was made last week.

In the past, County Commissioners have done much good work on educational lines. They have been careful to the new settler in advising him how to plant and how to take care of his plantings. They were well to the front when it came to the protection of the older plantings and control of disease.

But a period of readjustment is near. Important changes in the dissemination of agricultural knowledge have been introduced by the University of California in co-operation with the United States Department of Agriculture. These changes relate to the appointment of a Farm Adviser, following the organization of a Farm Bureau in any county, where the demand for such an adviser exists.

An Executive Function. — But there is one thing that the Farm Adviser will never be able to do. Being a member of the University, he cannot be permitted to execute quarantine and control work, force eradication or perform other executive police duties. The farm adviser's duties are to co-operate with the farmer and disseminate agricultural knowledge through the farm bureau and its units.

On the other hand, the County Horticultural Commissioner has given to him legal power to enter upon any premises, orchard, nursery, packing-house, depot, etc., whenever he shall deem it necessary, and if these places are found infected with dangerous disease, insects, etc., to take certain legal measures to cause control or force eradication.

Other Work for Commissioner.—But with the growth of our horticultural industries a readjustment must come, and when the time is right for further legislative action it will be shown conclusively that this county office, that has been weakened in its importance by the appointment of Farm Advisers in some counties, must be strengthened in other ways. We might as well endeavor to do without our Sheriff or police officer as to do without our County Horticultural Commissioner.

Spread of Plant Diseases.—And this growing commonwealth of ours is beginning to learn the necessity of preventing the spreading of certain insects and plant diseases from one county to another. We are learning that we must begin to control thistles on the roadside, water grass pests in our rice culture and weed pests generally. It is true that sporadic efforts to enforce such control have been made. In some counties the pear men are protected, the County Commissioner endeavoring to control the pear blight. In some counties thistles are under control, the Yellow Star thistles, for example, while in other counties nothing is done. This indicates that these sporadic efforts do not pay, and that we must cease to proceed in this haphazard way.

Uniform Standards of Fruit.—The same complaint may be made in regard to other executive work that should be performed by the County Horticultural Commissioner. The serious economic condition that our deciduous fruit industry is passing through calls for uniform standardization of our fruits. Here again some counties are practicing proper standardization under special laws; others are working on different fruits under different laws.

Many representatives of the industry have come to the conclusion that, while the foundation of our horticultural laws are eminently strong and sound, with the coming of new conditions and the astonishing spread and growth of horticulture, the time for a readjustment is near.

Under Stronger Laws.—And when this readjustment comes it will make the County Horticultural Commissioner, after due examination as to his qualifications, a respected official of the county government, working under stronger laws, drawing his pay by the month like any other county official, and devoting his entire time to his duties. By presenting a careful budget for his work to his Board of Supervisors, they will provide for the necessary means of insect and weed control and also give him sufficient latitude to assist in the organization of his growers for co-operation and standardization.

"I'll venture to say that half of the time of the Experiment Station men is spent away from Riverside," says Director H. J. Webber, which goes to show that the University is mixing with their theoretical and laboratory work, practical orchard studies throughout the citrus growing sections.

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for $1188.00 in payment of my order of Orenco trees. They are fine.
(Signed) G. H. C., Hollister.

AGAIN!

Enclosed find my check for $1067.47 in payment of my order for trees just received
(Signed) M. L., Hollister.

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The Present Prune Problem.

[Written for Pacific Rural Press by Silvert H. Shelley, C. E., San Jose.]

The year of 1915 has given some idea as to what can and what cannot be done in the way of organization. The report of the Committee as given at the mass meeting lately held in the Garden Theatre shows that though they have successfully carried out their purpose of guiding the fruit growers in the selling of their products yet it was found very difficult to procure quick and reliable information regarding the market. Hence the need of an Information Bureau with a paid secretary, supported partly by other counties as well as Santa Clara county. But further than this it would be too great an undertaking.

Moreover, the prunes of other counties, many of them taking three pounds of green to one pound of dried, instead of two pounds of green to one pound of dried—thus showing a poorer quality. Each county therefore should have its own organization for disposing of the products, joining in the central Information Bureau. Such an organization of the whole State as Colonel Weinstock suggested, might be good—especially in theory—but the growers are not prepared to maintain such a big enterprise, and it would therefore be doomed to failure. The small active central Information Bureau to deal with the question of prices is what should now be attempted.

But there comes up in connection with this the question, could the Committee be as helpful, every year, to the growers as in 1915? There was then a small crop; speculators sold early and therefore, information and the holding for better prices were all that was necessary to make a good season. Next year there is likely to be a big crop. The United States will not consume much more—this has been proved again and again—and so either there will be low prices or a holding over till the following year, which would spoil that season's prices. It is evident, then—especially in a year of big crops—that a wider market is required as well as better information. With European prunes cut off from South America, is not this the opportunity for California to increase her shipments there beyond the usual amount, and so leave an ordinary number of tons for consumption in the United States? The price could then be fair even with a big crop.

If the packers are left to do this, the growers will get little good from it; besides the packers are not likely to concern themselves when it affects them so little. It would also be a risky venture for them because South America is a long way off and prunes processed here will very likely be mouldy before consumption.

Instead, suppose the growers through the central Information Bureau and the small organization already in existence, sent over to Buenos Aires as a distributing point for that continent prunes not processed or packed, but dipped only in hot salt and water to cleanse them. Then process and pack the prunes over there as needed. This would require a small outlay—a practical fruit grower, not a packer, who understood Spanish; possibly a good salesman; a few laborers for the work of packing and a small packing plant. Warehouses there could probably be rented for a year or two. Here the Farmers' Union of Campbell already has one warehouse. The whole plan could be carried out for $15,000.00 or $25,000.00. There would be scarcely a chance of loss, for prunes simply sterilized and not processed and packed, keep indefinitely. It would introduce California prunes in their perfection. It would give the grocers and jobbers a chance to order any quantity so as to have none deteriorate on their hands. This would be an incentive to push the product. The seasons being reversed in South America and here, would also help matters.

Finally, this plan, if carried out, would mean good prices even with large crops; would free the growers from the control of the packers and make them independent, and would require very little outlay, as the business could be built up from a small beginning but expanded rapidly as desired.

What do the growers think of this? Can we not have a discussion on this subject so vitally interesting? Can we not have a discussion not only of the whole plan but of the various phases of it?

Heavy shipments of lettuce are being made from Brawley, Imperial county, at this time to points east.



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IT'S very much easier to buy goods which contain a little cotton or shoddy, and they look just as well at first.

The difference shows up in the wear. The cheap garment soon wears shiny, then threadbare, then shows gaping holes, while that made of pure wool is practically as good as new.

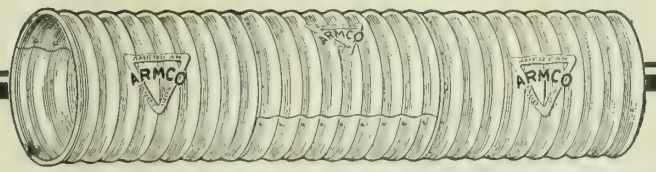
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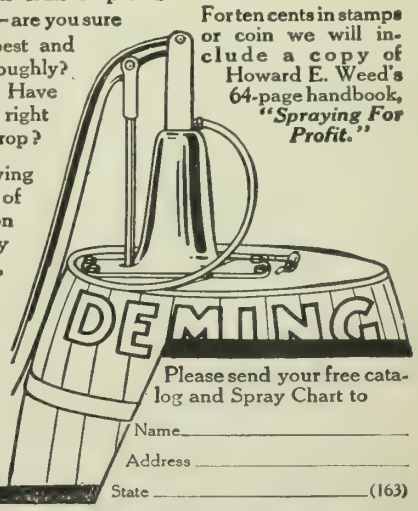
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Bark Washes Against Rabbits

Although the bark-washes prescribed by D. E. Lantz in Farmers' bulletin No. 702 are chiefly directed against bark-gnawing in snowy countries by ravenous rodents, they may help some of our readers under other conditions:

The most promising simple washes for protecting large trees from rabbits are those containing lime mixed with sulphur or copperas in various combinations. Lime alone is not sufficiently permanent, especially where much rain falls. When mixed with sufficient copperas it has a deep green color and sticks much better. The lime-sulphur wash commonly used to destroy San Jose scale in winter has often proved successful as a rabbit repellent, but its lack of adhesive qualities often makes it fail. The defects may be partly corrected by mixing salt, soap, or a cheap glue with the lime and sulphur while the wash is still hot.

A poisoned wash of starch and glycerin, tried during the winter of 1913-14 in Idaho by a field agent of the Biological Survey, gave excellent results in protecting young orchards from jack rabbits, and would probably be equally effective where cottontails are concerned. The wash is prepared as follows:

Dissolve 1 ounce of strychnine (sulphate) in 3 quarts of boiling water. Dissolve ½ pound of laundry starch in 1 pint of cold water. Pour the starch into the vessel containing the strychnine and boil the mixture a short time until it is clear, adding 6 ounces of glycerin and stirring thoroughly. When it is cool enough apply with a paint brush to the tree trunks.

The glycerin and starch adhere well and form a thin coating to the bark. Rabbits attacking the trees will be quickly killed. In the Idaho experiments none of the trees were damaged badly enough to affect their growth and all the rabbits in the orchards were destroyed.

ANNOUNCEMENT OF ADVANCE IN PRICES

We are compelled to announce an advance in prices of Oliver Plows, as a direct result of the European war. The advance in the cost of raw material has so largely affected the cost of production of plows that no other course is open to us. We regret the necessity, but it is unavoidable.

Please understand, therefore, that higher quotations on **Oliver Plows** by your local dealer will be made to cover the higher prices they will be compelled to pay.

If the existing conditions continue, still higher prices will result, and plows at present prices will look like bargains.

We have no thought of lowering the quality, lessening the weight, or employing any other subterfuge in order to continue present prices. Factories that fail to cover themselves by an advance in the present emergency, automatically convict themselves of having heretofore asked too much for the kind of goods they were delivering, or they propose to cheapen their product.

Oliver Chilled Plow Works

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Makers of All Kinds and Sizes
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Engine Gangs,
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Chilled and Steel Walking Plows.

Seed Rice

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If you are in the market for seed rice, buy the best.

Seed which is absolutely free from Water Grass, by official test, is what we have.

Price, $2.25 per 100 lbs., F. O. B. Madison, Yolo County.

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Leonard Coates Nursery Co.

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ECONOMICAL GRAIN IRRIGATION.

[Written for Pacific Rural Press.]

Water in the country bordering Coachella on the east is not so expensive after the wells are put down, but ranchers there have learned economy in its use. One of them is A. A. Allen, who was recently using a furrow system on grain.

The 20-acre field had been irrigated and prepared flat and sowed early in January. It was at once ridged with an orchard cultivator, the ridges being about two feet apart and the furrow between being about eight inches deep.

"Maybe some of the grain is covered deep, but it comes up all right through this light soil," said he.

A flowing artesian well half a mile away was supplying enough water to give about 14 miners' inches at the field, and this was being turned into 14 furrows at once. It did not keep Mr. Allen very busy, as he left it running at dinner time.

"It subs through the ridges and the soil does not bake and allow the water to evaporate, as it does even here if we flood. Likewise we save what would evaporate from a flooded field during irrigation."

SAND BURS IN ALFALFA.

To the Editor: I have some sand burs in my young alfalfa. They are in quite big bunches. How can I get rid of them? Some people say they won't continue to grow if I don't cultivate the ground.—H. M. B., Turlock.

[Sand burs are pretty hard to kill, but if you will help the alfalfa by clipping before the weeds go to seed, it will run them out. Be sure to clip early and often for the seed drops from the stems of the burs before you think it would.—Eds.]

Allan S. Patterson has purchased 15 acres of bearing prunes in Browns Valley from E. Smith.

Dead Squirrels--

are the only good squirrels on your farm.



Carbon Bisulphide

will rid your land of these pests. It is **SURE DEATH** to Squirrels, Gophers, Prairie Dogs, Rats, Ants, Etc.

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BUDDED AVOCADO TREES

"The Avocado as Grown in California," a booklet recently issued, will be sent free upon request.

GROWING budded avocado trees of merit (good trees of the best varieties) is our business—not a side line with us. We are now, and have been for years, devoting all our time to this work. We are dead in earnest in our desire to see the avocado industry progress along conservative lines into the best horticultural business of California.

Many ranchers have already planted an avocado orchard. We have sold the trees to the most of these. Others are thinking of planting. To them we extend a hearty invitation to come to the West India Gardens. You will be welcome, and our time is yours for the discussion of avocado growing.

We have in stock budded trees of all good varieties. Our prices for these trees are as low as it is possible for such trees to be produced and sold at a legitimate, reasonable, profit. The best varieties, the large fruited Guatemalan types—those that are best suited to commercial growing—are more difficult of propagation than the small thin-skinned Mexicans; consequently the trees cost more. We have some cheap trees, trees that we can sell you at $1.00 each, but these are not the trees you will want for a high grade avocado orchard.

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We have a large surplus in Bartlett, Winter Bartlett and a good assortment of other varieties. Mostly short, heavy 3 to 4 and 4 to 5 foot grade. Very attractive prices for orchard planting. Do you know any fruit which maintains prices better than pears? Winter Bartlett begins to bear earlier than any other variety. Get our special prices. And our Catalogue that tells the Truth.

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Of the Mission and Manzanillo varieties. Fine, healthy stock. Also rooted Olive cuttings of the above varieties. For prices and particulars.

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California Garden Flowers $1.50 Postpaid Pacific Rural Press

Orange Show and Fruit Conventions.

[Written for Pacific Rural Press.]

With an attendance never before equaled, the Sixth National Orange Show held at San Bernardino, February 17-24, was conceded to be one of the most successful enterprises of its kind ever held in the West.

The show was unique in that the management had to refuse many applications for space both in the display and industrial tents.

Sweepstakes on Washington Navels went to the Pachappa Hill groves, near Riverside, on a fancy lot of exceptionally high quality fruit. Sweepstakes on lemons went to the Etiwanda Citrus Fruit Association, yielding as did the orange sweepstakes $100, a cup, and a banner.

Lindsay had to content herself this year with first prize on her feature display of an orange stagecoach and four horses with orange harnesses, dashing down a steep mountain road of oranges. She also won first with a $50 premium on the best 48-box display of oranges regardless of variety, and other high awards.

The C. D. Hubbard Co. of Carpinteria won three seconds on lemons, besides on the best 48-box display.

Aside from these awards, all other premiums went to Southern California, mostly to Riverside and San Bernardino counties.

Two large tentsful of automobiles and accessories and orchard implements and supplies were interesting and educational features of the show.

Citrus Convention.—One of the chief attractions was the holding of the Citrus Convention February 18th and 19th. Intense interest, free, and sometimes fiery discussion on the floor, and heavy attendance of growers, characterized these meetings. The programs were full of big men and big subjects.

The convention opened with a discussion of the 8-to-1 test, the opposition being voiced most ably by W. W. Hinsey of the Fair Oaks Fruit Co. Points were made on both sides, but preponderance of evidence showed both the profitableness of the 8-to-1 standard to the orange industry of the State and the need of different cultural methods by those growers in the sections who now oppose the standard.

The subject of scale control by parasites, spraying, and fumigation drew out a spirited discussion.

The climax of attention, discussion, and attendance was Saturday afternoon, when the subjects of ferlilization, nitrification, and the movement of nitrates in the soil were presented by Director H. J. Webber, Prof. I. G. McBeth, and W. P. Kelly of the Citrus Experiment Station staff. The station is surely being depended upon very largely by citrus growers for solution of their problems.

Saturday night G. Harold Powell showed the inner workings of the marketing system and illustrated by charts the fact that this year the growers are getting a larger proportion of the consumers' dollars because margins of middlemen and cost of operating the Exchange have been decreased.

Resolutions as reported by the Resolution Committee were passed as a whole without discussion. Frederick Maskew of the Import Quarantine Service was introduced as successor to Dr. Cook in the State Horticultural Commission office. The committee of three appointed by the Visalia convention to work out a suggestive revision of the State horticultural laws was abolished, to be replaced by a similar committee to be appointed by Dr. Cook and to include himself. Gratitude and regrets were expressed to the retiring State Horticultural Commissioner, whose health would not permit another term of such active work. A committee of seven, to be appointed by Dr. Cook, was suggested to confer with the State Market Director to work out a plan whereby citrus fruit shippers may all co-operate with the State in preventing gluts of the Eastern and Western markets with California fruit. This committee is to report at the next regular or special fruit growers' convention.

Apple Growers' Convention.— On Friday and Saturday the apple growers of Southern California held their special convention, and are to be congratulated on the interest and attendance of their meetings. It is not generally known that the industry is of such magnitude or of such future importance as was brought out at this meeting by the statement that there were 9.700 acres of apples in the Yucaipa, Beaumont, Victorville, and Oak Glenn districts.

Pruning, spraying, cover crops, varieties, packing, and marketing were discussed during the two daylight sessions.

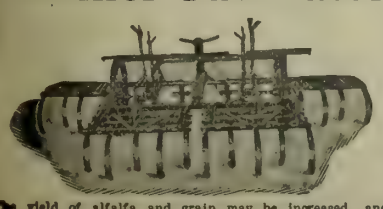
Horticultural Inspector J. B. Hundley of Yucaipa noted that lack of pruning in young apple trees brings serious results later.

Deputy State Horticultural Commissioner G. P. Weldon pointed out that apple-growing could not be made profitable without spraying for codling worm, and many growers of Southern California who do not now spray will either accept this advice or learn by bitter costly experience.

Several large growers agreed that the principal variety grown in Southern California is the Rome Beauty, with Stark's Delicious, Winesap, and Jonathans second, third, and fourth. Belief was expressed that high-class apples will never glut the markets.

That the Standard Apple Act of 1915 has caused many more apples to be classed as culls; that this loss has brought added profits to the growers; that the 1½c. per box has paid all expenses of inspection so that the State can certify to the grade and size; that 75 per cent of the Watsonville district apples have been inspected and stamped; and that apple growers of the whole State should have a central selling organization to eliminate blind competition and to develop the opening of South American markets were the principal points made by Manager J. F. Jerome of the Watsonville Apple Distributors.

Forkner Cultivator



The yield of alfalfa and grain may be increased, and the quality improved by proper tillage.
The FORKNER Spring Tooth Tillers penetrate and loosen the hard soils, admitting free air to the roots, promoting more rapid and vigorous growth.
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You want a sprayer that is reliable—first, last, and all the time—a sprayer that will start up without trouble when you're ready to begin work and that will keep a-going until you're done. A sprayer like this can't be built in a day. There are 30 years of experience back of the Bean line—30 years of steady improvement, constant betterment, continual development. Today there are

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California Garden Flowers, $1.50 postpaid. Pacific Rural Press.

A guaranteed analysis means that each element needed for your crop is in the right and definite proportions. : : :

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PURE ANIMAL MATTER AMMONIATES

GOLD BEAR TRADE MARK FERTILIZERS

FOR CALIFORNIA SOILS

WESTERN MEAT COMPANY

704 Townsend St.

San Francisco

Ridding the Farm of Noxious Weeds.

[Editor's Note.—This is the first of a series of five articles on weed eradication that have been prepared by Mr. O. W. Newman, Ass't Sec'y State Commission of Horticulture and which will appear in coming issues of this paper.]

BETTER FARMING — FEWER WEEDS.

The first and most important means of eradication of any weed is cultivation. The first cultivation should come in the fall. The spring cultivation will then kill many weeds which germinate after the fall plowing. Cultivation at all times and wherever possible not only keeps down the weeds, but conserves the moisture by creating a mulch. Harrow grain after it has become well rooted. This has been tried repeatedly and found to be very practical. Wheat, barley, oats, Sudan grass and rye can easily be handled in this way. The weed seeds being a little slower to germinate than the grains, will be in just the right condition to be killed. Use a spike-toothed harrow with as many spikes as possible. Harrow corn before it gets too high and go in later with a hoe and cut out the weeds. The writer has grown corn and tomatoes with weeds and without, and has proved that greater yields can be had without weeds. Weeds take just as much moisture and nourishment as the commercial crop, and pay nothing.

For the average farmer summer fallowing is not a paying practice. Of course there may be cases where it is the best thing to do, but in general summer fallowing is expensive and wasteful of land which could be growing a crop and accomplish weed killing at the same time.

Pasturing.—Pasturing should be practiced in place of fallowing. Fields should be turned into pasture once every four or five years. Several head of stock on a piece of land will remove all weeds except the grasses, which are the only plants able to withstand close cropping. The writer has seen sheep and goats turned into a pasture reduce plant growth to a minimum in a very short space of time. Pasturing is also a valuable phase of a good crop rotation, as it gives the land a rest, adds manure, and gives renewed vigor to the land. If the farmer is careful to feed his stock clean grain and clean hay he will not spread weeds through the manure.

Crop Rotation.—This form of weed eradication is most important. Not only is it a means of eliminating pests, but it is one of the very finest means of renewing soils which are not producing well. Land which is producing good crops is rarely found infested with weeds. Crop rotation is becoming universally recognized as absolutely necessary. The rotations vary with local conditions, but in general a good rotation should cover at least four years and should provide at least one tilled crop, one of clover or alfalfa, and others depending on what the locality produces to the best advantage.

For the eradication of special weed pests such as Bermuda grass, morning glory, yellow star thistle or water grass, crop rotation is invaluable. To get the best results from land covered with Bermuda grass or other troublesome grasses, attach a shear to the front of the plow, which will cut the rootstocks and top of the plant. Plow ten to twelve inches deep, turning the earth over clean. After harrowing rake together and destroy all the rootstocks possible. Sow the field to barley, rye, or some other thick shade crop. It is the shade, as much as anything else, that keeps the grass down. As soon as the grain is harvested plow again and seed to vetch or melilotus clover for a winter cover crop.

In case of yellow star thistle the best crops to use are hoe crops. Plant the land to beets, beans, potatoes, corn or other valuable crops and cultivate with a peg-tooth harrow or cultivator as often as possible, going over the field with a hoe between times.

In all agricultural work, whether it be for weed eradication or other purposes, the word **thorough** should be the pass word. Half the trouble from our insect, fungous, and weed pests could be avoided if the farmers and orchardists would do their work thoroughly.

WALNUTS!



We grow the trees that bear these nuts. Franquette and S. J. Mayette, grafted on California Black root. Our own scions from our own orchard. Samples of nuts and trees for sale by

HALLAWELL SEED CO.,
258 Market St., San Francisco.
CALIFORNIA SEED CO.,
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THE VALLANCE NURSERY,
Glen Ave., Oakland, Cal.
SUNSET NURSERY CO.,
92 41st St., Oakland, Cal.
and by the growers.

Ruehl-Wheeler Nursery
163 S. Market Street, San Jose, Cal.

SPANISH MEASLES OR MILDEW.

To the Editor: My vines show discolorations on canes and the berries get black. Sulphur does not seem to have much effect. Mr. Bioletti has recently mentioned "Spanish Mildew," which he says sulphur does not control. Does it show itself the way I have mentioned? What is the preventive?—A. R. P., Dinuba.

[Answered by Prof. Bioletti.]

[The vine disease, or diseases, known commonly as "Spanish Measles," or "Spanish Mildew," shows usually on the leaves and berries, especially the latter, in the form of small black dots, often very numerous. What its causes are and what its cure are unknown.]

In order to better acquaint peach growers in the San Joaquin valley with the purposes of the California Peach Growers' Ass'n, the officers and directors of that association are holding meetings in the various towns of the valley. They have issued a public invitation to all peach growers, whether members of the association or not, to attend these meetings.

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High Class

Fruit and Shade Trees

Grape Vines

Etc., Etc.

Kirkman trees will please you and give you good results.

We are wholesale growers of all standard commercial varieties:

Heavy surplus in Peaches, Apricots, Pears, Prunes, etc., etc.

Orders shipped same day received.

Send us your list of stock needed for quotation.

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Made of Yucca Palm. Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frosts, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

Prices:

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10 in. long 7 in. wide	$10.00
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16 in. long, 7 in. wide	13.50
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24 in. long, 7 in. wide	18.00
30 in. long, 7 in. wide	21.00

YUCCA MANUFACTURING CO.,
1380 Willow St., Los Angeles, Cal.

Marketing the Canteloupe Crop.

[Written for Pacific Rural Press.]

Probably the most spectacular product of Imperial Valley is early cantaloupes. More folks have gone broke because of "overproduction" before even distribution on the markets was attained; and now the marketing agencies have formed an exchange by which, on a sort of "gentlemen's arrangement," only as many cars are shipped to each eastern city as it has shown itself able to consume without waste, and at living prices for the growers.

The Eastern distributing companies as well as some in the West, contract each autumn with growers for the product of as many acres as they can handle. They guarantee the grower a minimum price of 70 or 80 cents per standard crate and make substantial advances at the beginning of each season. In general, the house keeps 15 per cent of the gross sales and returns to the grower the rest, undertaking to adjust all claims against the railroads for breakage, over-charges, etc.

During the shipping season, usually May 15 to July 15, each house has its representative on the ground. Each morning these representatives meet at the "Exchange" and express their preference of markets for the number of cars each will ship that day.

W. P. Carrol is one of these, representing the United Marketing Co. of Los Angeles. He mentions the figures 20 and 25 as the number of cars Chicago and New York can use daily in normal weather. If more than 20 cars are proposed for Chicago on the Exchange, the secretary apportions the 20 cars among the applicants unless some withdraw voluntarily. Then the remaining cars must go to other markets as agreed upon there, so as to distribute the available daily supply to the markets deemed most likely to pay the best prices, and not to oversupply any one of them.

This system has great possibilities for evil as well as good, and this is the reason that the courts have permitted much prosecution of the Exchange. The Government sent a man to observe its workings last year and protect the growers' interests. According to Mr. Carrol, no significant changes were suggested to the system already being practiced. The latest court decisions seem to have favored the Exchange; and certain it seems that only short-sighted or selfish interests could wish to return to the old days of blind competition.

The efforts of the Government Marketing Bureau, the magnificent system of icing the cars, and the special railroad service, combined with a practical monopoly of the early melons and the working scheme for even distribution ought to permit cantaloupe growers to get the maximum returns for their crops.

GROWING AND STILLING MINT.

To the Editor: I have been interested in your answer to G. W. H., Marysville, about raising spearmint. I have raised a good many acres of mint and also distilled it. I believe tule land would be good for mint—at any rate it should be good, rich soil. Plow and harrow the land well; mark the rows with a single shovel plow about 4 or 5 in. deep. The rows should be 2½ feet apart. Pull your roots and throw them in the marks and cover by trampling. When cutting use a scythe instead of a mower, except on what is called old mint, then use a mowing machine.

Any steam boiler will do for distilling. Have one or two tanks about 6 feet in diameter and 6 feet high with steam tight tops. Have pipes running from the tanks to a tin pipe worm with cold water running on the worm to condense the steam into oil. The tanks must be made of wood. The roots must be good ones of the particular mint you desire to produce.

Repressa, Cal. G. R. Gilkison.

[We must repeat our warning not to get crazy about mint. It is very easy to get too much, and it can be grown all over the country. There was a lot of money lost on mint in this State forty years ago.—Eds.]

The Banning Almond Growers' Exchange finished paying for their fine concrete warehouse in 1915, having taken one cent per pound from the price of nuts handled. Last year ¼ cent per pound was taken to pay for equipment. Meanwhile their membership and tonnage have so increased that only by the prompt shipment of last year's crop and refilling of bins were they able to handle the nuts of members.





John Deere Disc Plows for Tractors

For Field or Orchard

MADE especially for use in the West. Work successfully in every soil where a disc plow should be used.

Plow anywhere from five to twelve inches deep.

One-man outfits—controlled by man on the tractor. Work with any standard tractor.

Can be used either for field or orchard work simply by changing the land axle.

All levers down close to plow when at work—plow can be operated close to trees and under limbs without injuring them.

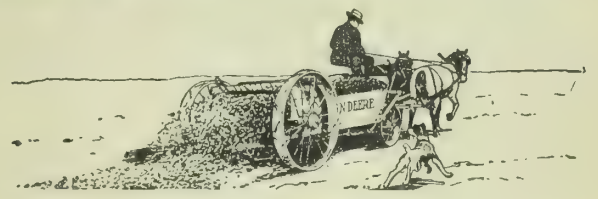
Easily transported—special lever at the rear for lifting discs high and level.

Over fifteen inches clearance under beam; twenty inches between discs.

Twenty-four or twenty-six-inch discs with chilled metal bearings—constructed so that bearings do not drag along wall of furrow when plowing deep.

Can be reduced to four discs by taking off one intermediate section and telescoping connecting rods.

Write for free booklets describing the John Deere Tractor Disc Plow No. 10 for field work and No. 11 for orchard and vineyard.



John Deere Spreader

The Spreader with the Beater on the Axle

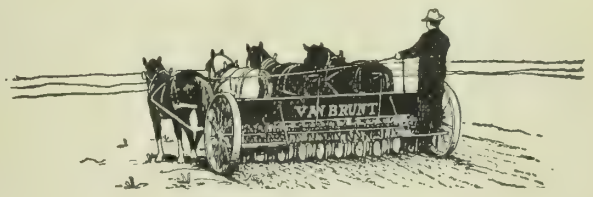
ONLY hip high to the top. Wheels out of way when loading. Mounting the beater on the axle is patented. Write for Spreader booklet.

Three exclusive John Deere Spreader features:

[1] Beater on the axle—nothing else like it. [1]

[2] Revolving Rake—load moving back to beater revolves the rake. Draft actually less. Even spread certain—no bunching. [2]

[3] Ball Bearing Eccentric Apron Drive—requires no attention. Performs wonders in the working of the spreader. [3]



Van Brunt Drills

With Adjustable Gate Force Feed

THEY plant any small seed, alfalfa to bearded oats, peas or beans. Quantity per acre easily regulated merely by shifting feed gauge levers.

All the ground planted without wasting seed. The Van Brunt adjustable gate force feed and special agitator in the hopper compel seed to leave hopper in even, continuous streams.

An even stand of grain is certain. Pressure springs compel discs to make furrows of equal depth and seed is protected until it reaches bottom of furrow. Single or double discs. Write for free booklets.



John Deere Plows for Light Tractors

For Orchard and Vineyard

Practical—work with any standard tractor. One-man outfits—controlled by man on the tractor.

No levers—one reason why these plows work so successfully. Plows leveled and depth regulated by screw device. Can be run close to trees and vines without injuring branches.

High and Level Lift—Pull the rope and all bottoms raise high and level. Another pull lets them down.

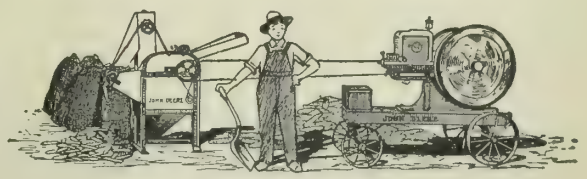
Plows raised in fourteen inches ground travel. Make square headlands.

All bottoms raise high like a double bail, high lift horse plow. You know from experience what this means. Plows do not clog or gather trash on the turn.

Extra wide and semi-floating front truck.

Equipped with either three or four famous John Deere 12-inch bottoms with Quick Detachable Shares—the shares that can be taken off and put on in one-fifth the time it takes to change bolted shares.

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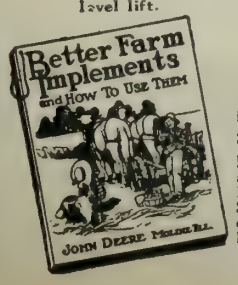
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Dependable Farm Power

"R & V" Triumph—always develops rated horse power—made in 1, 1½, 2½, 4, 6, 8, 10, 12, 16 and 20 H. P. sizes, stationary and portable.

Easily started; perfect speed control (speed can be varied 40 per cent without stopping engine). Complies with insurance regulations. Hopper cooled—a simple, efficient system that does not require long pipes and numerous fittings.

High grade throughout. Inspect the extra guard ring over piston pin to prevent possibility of scoring cylinder. Ask about the "R & V" oscillating magneto. Write for free booklet.



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BOOK FREE—168 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars. Describes and illustrates: Plows for Light Tractors; Steel and Chilled Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Lister Plows and Cultivators; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain Wagons; Teaming Gears; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders, Stackers, Sweep Rakes, Mowers, Self-Dump Sulky and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills and Seeders; Grain Binders; Corn Binders; Gasoline Engines. This book sent free to every one who states what special implements he is interested in and asks for Package No. X-152.



John Deere, Moline, Illinois

General Agricultural Review.

DECIDUOUS FRUITS AND NUTS.

Almond trees are blossoming in many sections and plum trees are reported to be in blossom in Placer county.

The sea-marl limey subsoil of the Paso Robles district gives pome fruits chlorosis, but is good for stone fruits, according to G. N. Talbot.

At the annual meeting of the Kingsburg Packing Company last week a dividend of 12½ per cent was declared and new officers elected.

A heavy planting of deciduous fruits and almonds is expected in the Arbuckle district this spring, there being 1,000 acres already in sight.

Five hundred to 1000 acres of flowers of about 1500 varieties are being planted at the Atascadero colony by the Routzan Seed Co. of Arroyo Grande.

L. D. Batchelor is at Santa Barbara securing scions from walnut trees there that will be used for experimental purposes on the State Experimental Farm at Riverside.

C. K. Wood is one of the orchardists near Yuba City who has been successful with walnuts. He likes the Mayette and Franquette varieties on black walnut root the best.

Activity in the securing of subscriptions for stock in the California Peach Growers' Ass'n is reported from Selma, where even the clerks in stores are said to be supporters of the cause.

Over 4000 young peaches were thinned from a 19-year Lemon Cling tree belonging to F. C. Dyer of Ontario two years ago, and the tree then developed 400 pounds of marketable fruit.

The Ripon Nursery Co. reports the sale of 10,000 almond trees to the Arbuckle Almond Land Co. Stewart Prolific, Nonpareil, Drake Seedlings and Texas Prolific were the varieties purchased.

Peach trees, Tuscans, Phillips, Muirs, and Lovells are the fruits most demanded from the Armstrong Nurseries of Ontario since the rains, for planting within a radius of 30 miles.

Walnuts are to be interset in five acres of Burger winegrapes near Cucamonga belonging to F. W. Whitney, and the other five acres of Burgers are to be grafted to Sultanas.

A walnut grower near Santa Ana argues that the cull walnuts should be cracked and packed at the local packing house instead of being shipped to a centralized plant as is common at present.

Fig growers in the vicinity of Merced have recently sold 70 tons of last year's crop for $172 a ton. A report from there says that the fig acreage will be increased materially the coming season.

It is expected that apricots will be in bloom in Kings county by the first of next week. The buds are swelling rapidly as the result of the springlike weather which has prevailed there for the past two weeks.

It is never any trouble to sell Muir and Lovell peaches from the Cucamonga district to the canners, according to V. G. Lucas, who is handling about 300 acres of peaches over two years old and 50 acres planted last year.

Libby, McNeill and Libby have been making large shipments of canned fruits from their Selma branch recently. They are still at work canning olives and olive oil and expect to increase their output of these next year.

It is the opinion of Assemblyman Boude of Sonoma county that there is a big opportunity for dried Gravenstein apples, provided the apple growers will standardize the dried product in the same manner raisin growers have standardized their pack.

During some winters warm spells start sap to rising in deciduous trees; then cold spells arrest it; there is a sour sap condition which weakens the fruit buds so they may bloom but cannot set fruit which will mature, according to F. C. Dyer of Ontario.

Fred K. Howard, hortcultural commissioner of Kings county, is conducting an experiment on the A. Verkuyl orchard near Grangeville to determine the value of soluble sulphur compounds as compared with commercial lime sulphur for the control of peach blight and curl leaf.

We are advised by T. C. Tucker, manager of the California Almond Growers' Ass'n, that five days after they opened their books for orders for the 1916 crop they were forced to stop taking orders till an estimate of the crop can be made. He also states that it has been some years since prospects were so bright for a big crop as at present. With the 1915 crop marketed a prosperous 1916 almond market is expected.

C. L. Woodbridge of Modesto, who is an experienced walnut grower, says that the mistake so many people make in planting English walnuts in the San Joaquin valley is in the lack of protection afforded the body of the tree from the sun during the summer months. A splendid protection is afforded by wrapping burlap to a height of three feet or more from the ground, depending upon the height of the head. After the first season the bark has become hardened so that it is not affected by the sun.

CITRUS AND SEMI-TROPICAL.

Lime experiments in 14 plots of citrus trees are already started at the new Citrus Experiment Station.

Henry Rickels has purchased a 10-acre grove of young orange trees in the Terra Bella section of Tulare county for $950 an acre.

Every fruit grower in Imperial county should border his fields and ditches with dates, olives, or figs, where conditions are suitable, thinks H. S. Reed.

A 50-acre experiment on orange and lemon fertilization and soil treatment is planned for next spring at the new Riverside Citrus Experiment Station.

Revolutionary changes in irrigation methods are predicted as a result of studies now being made of the nitrate plant food movements in the soils.

The navel orange crop south of the Santa Ana river has been harvested, the Exchange having shipped approximately 175 carloads from that district this year.

The first meeting of the Lindsay District Orange company was held last week, when officers were elected for the coming year. The association has a membership of 15 growers.

A report from Santa Barbara county states that the lemons there are not ripening fast enough to keep pace with the demands of the market and that trees are being continually stripped to supply the market.

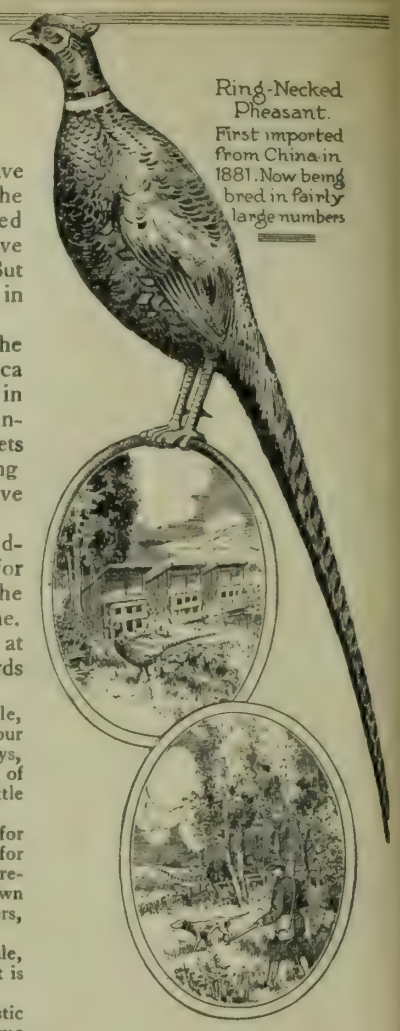
The Redlands Fruit Ass'n and the Redlands Co-operative Ass'n, both of which sell through the Cal. Fruit Growers' Exchange, are installing precoolers for oranges which will average a saving of $15 per car to the growers according to manager.

Twenty-one bunches of Deglet Noor dates from one tree, each averaging 25 pounds and selling without incubation at 30 to 35 cents per pound, is a record said to have been made in Imperial Valley by Francis Heiny.

Two Deglet Noor date trees 10 years old yielded 430 pounds of fruit last season for F. N. Johnson of Indio, who sold it for $309.30, 212 pounds going at $1 per pound. The rest was second and third grade fruit which sold at 25 to 75 cents per pound.

The division of soil technology will conduct experiments in a Va-

Breed Game Birds on Your Farm



FOR many years, we in America have spent much time bemoaning the disappearance of our feathered game. It is indeed a fact that we have little game to eat and little to shoot. But we can have an abundance of game in the fields and on the market.

The farmers of this country have the land and the enterprise to make America the greatest game producing country in the world. They can supply the ever increasing demand of American markets and American sportsmen by game farming

To you, game farming should prove of interest for three reasons:

It is profitable from a marketing standpoint. The demand for eggs and for breeding stock is much greater than the supply, and will be for years to come. Pheasant eggs, for instance, sell today at from $20 to $25 a hundred. Live birds bring from $5 to $7 a pair.

It will, at small expense in time and trouble, supply you with an abundance of food for your own consumption. Pheasants, wild turkeys, quail, grouse, and other birds forage much of their own food, and require comparatively little attention.

It will provide more shooting for you and for everyone, for it is a fact that game raised for sporting purposes can not be confined in any restricted area. At the same time, those who own large acreage, or who pool their land with others, get profit from those who pay for sport.

Game farming can be done on a small scale, and as a side issue to regular farm work, or it is a profitable occupation in itself.

Women on the farm who are raising domestic poultry, will find it worth while to breed game birds as well.

When conducted on a large scale, a game farm produces sufficient income to be a paying business in itself.

But this subject is too big to be properly treated in this space. Every progressive farmer is sure to be interested in it. Write for the book, "Game Farming for Profit and Pleasure," which will be sent to you without cost. It tells of the subject in a most interesting and informative manner. Fill out the coupon below and a copy will be mailed you at once.

Game Breeding Department, Room 155

HERCULES POWDER CO.

Wilmington, Delaware

Manufacturers of Explosives; Infallible and "E. C." Smokeless Shotgun Powders; L. & R. Orange Extra Black Sporting Powder; Dynamite for Farming



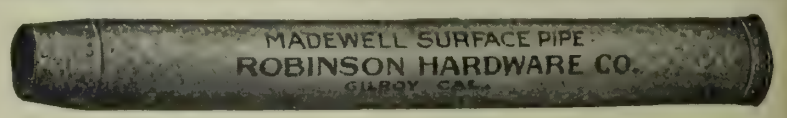
Game Breeding Department, Room 155
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Gentlemen:—Please send me a copy of Game Farming for Profit and Pleasure. I am interested in game breeding from the standpoint of.....

Very truly yours.

Name.....

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Smooth Lock Seam Sleeve

Here is an exclusive Madewell feature that appeals to every user of Surface Pipe. Seamed inside with perfectly smooth surface. Much stronger than the old-fashioned lapped and riveted seam used by others.

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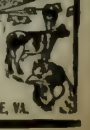
is recognized in established surface pipe districts as having the strongest, smoothest, and most practical construction.

Our Long Lock Seam is the best seam possible to make—and in addition is carefully soldered the entire length so that it stays water-tight. **Strength and Smooth Finish** are the big things to consider when you invest in surface pipe.

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Locate in VIRGINIA OR NORTH CAROLINA



Locate in one of the wealthiest states in the South. Excellent climate, no extremes of heat or cold. Average rainfall 45 inches. Counties have State Agricultural Agents. Land values increasing constantly. Boys Corn Clubs. Girls Canning Clubs. Good Schools, churches, roads, railroad facilities. Nearby markets. General farming, dairying, poultry, fruit and stock. Farms from $15 per acre up. Write for beautiful magazine, official lists, maps and other information, Free.

N&W Ry.

F. H. LeBAUME, Agr. and Ind. Agent, Norfolk & Western Railway, Room 119 N. & W. Bldg., ROANOKE, VA.

lencia orchard near Porterville this year in search for exact requirements for citrus orchard fertilization and cultural methods. It is estimated that from one-quarter to one-half of the commercial fertilizer on the average orchard is wasted, through improper methods.

The 23rd Annual Citrus Fair held at Cloverdale, February 18 to 22, was one of the prettiest displays ever witnessed by the people of Sonoma county. The pavilion in which the show was held was artistically decorated with citrus fruits and large crowds were in attendance each day and evening.

VINES AND RAISINS.

The low price of wine grapes is attributed as the reason for several wine grape growers in the vicinity of Yuba City grafting over their vines to Thompson Seedless this year.

After the campaign made by the merchants of Fresno and adjoining towns one day last week announcement was made by officers of the Associated Raisin Co. that the 15,000 acres of raisin grapes required by April 1 had been secured, thus insuring the continuance of the company's good work the coming year.

The law prohibiting the shipping of mildewed grapes was upheld in a decision made by Superior Judge J. A. Allen of Visalia last week. The superior judge held that the law was not in violation of the constitution of the state, and upheld the contention of the district attorney that instead of its interfering with the interstate commerce law, it in reality took charge of the grapes before they became the subject of interstate commerce in that the law set forth regulations concerning packing before shipipng.

FIELD CROPS.

The Spreckels Sugar Co. is erecting a beet pulp drier at their plant near Salinas.

Large shipments of grain hay are reported from Hollister, 34 cars being shipped in one day recently.

The Kings County Chamber of Commerce has started a contest in grain growing, prizes for which will be awarded at the county fair this year.

Alfalfa in the Oakdale region of Stanislaus county is several inches high and a big first cutting is expected unless another frost comes before cutting is commenced.

A great deal of alfalfa is being plowed up in Stanislaus county this spring as a result of overpasturing, the late spring rains last year and the heavy rains of two years ago.

As a result of the fine weather which has prevailed in the Delta district of San Joaquin county, practically all of the potatoes have been dug and put in the warehouses.

Farmers near Stratford, Kings county, who planted sugar beets in December were compelled to replant this month on account of the heavy rains which caused the seed to rot.

Rice growers near Colusa are said to be furnishing financial backing to the contemplated rice mill at that place which it is thought will be erected in time for the handling of this year's crop of rice.

According to H. S. Hazeltine, secretary of the California Vegetable Union, there were 2600 carloads of celery shipped from California this year which sold for approximately one million dollars.

A report from Fallon, Nevada, states that it now seems probable that the new owners of the sugar beet company there will be able to secure seed for this year's planting and that as a result the factory will be operated this fall.

Bean growers in the Lompoc section of Santa Barbara county are expecting to materially increase the bean acreage there this year. Everybody has been busy plowing the past two weeks and beet planting is already under way.

Rice growers have filed a protest with the State Railroad Commission against the rate charged by railroads on paddy rice, from interior points to San Francisco. It is charged that the present rate is much higher than the one maintained on grain and articles taking grain rates.

Robert H. Frazier of Modesto says that an old stand of alfalfa should be farmed two years before replanting. It should receive a good covering of stable manure and 250 pounds of acid phosphates to the acre. This can be bought for $17 a ton and helps supply the bacteria necessary for the growth of young alfalfa. He advises drilling 20 pounds of well cleaned and tested seed to the acre and believes it should be planted in March or April.

P & O

Low Down Orchard Disc Harrow

Built especially for use in orchards and vineyards, where with its extremely low frame, it works successfully under overhanging vines and branches. Also adaptable to use in hop yards, on truck farms, opening and closing irrigation laterals, and is an excellent harrow in the open field.

It's the Way We Build Them



The main frame is made of one piece of heavy bar steel formed in a rigid triangle and securely bolted to the tongue. Each gang operated and angled independently of the other and reversible for out or in-throw. Gangs can be tilted either way for ridging up or leveling the ground or for opening and closing irrigation laterals. A large shield over each gang prevents injury to overhanging vines and branches. Bearings have oil soaked, hard maple bushings.



When equipped with the extension frame the discs can be set out to cultivate 11 and 12 foot out-throw and in-throw with an adjustment of 4 feet to and from the center of the harrow, making a running cut from 8 to 12 feet with the extension, and a running cut of 4 to 7 feet with the regular frame. The extension frame is furnished as an extra.

Ask Your Dealer or Write to Nearest P & O House

Parlin & Orendorff Co.,
Canton, Illinois

Western Agencies: Parlin & Orendorff Plow Co., Portland and Spokane; Baker & Hamilton, San Francisco; Dixon & Griswold, Los Angeles.

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Light-Draft Plows Are Backed By An Unqualified Guarantee

CHOICE
Rice Land

320 ACRES (Tulare County).

2 Good Artesian Wells, with good flow of water. Pumping plant installed at one well which will supply over 100 inches of water.

There is a big bargain in this for cash. Will sell all or divide it.

Also 580 acres in same section. One fine artesian well, with good flow; also a pumping plant that furnishes over 100 inches of water, good 5-acre reservoir.

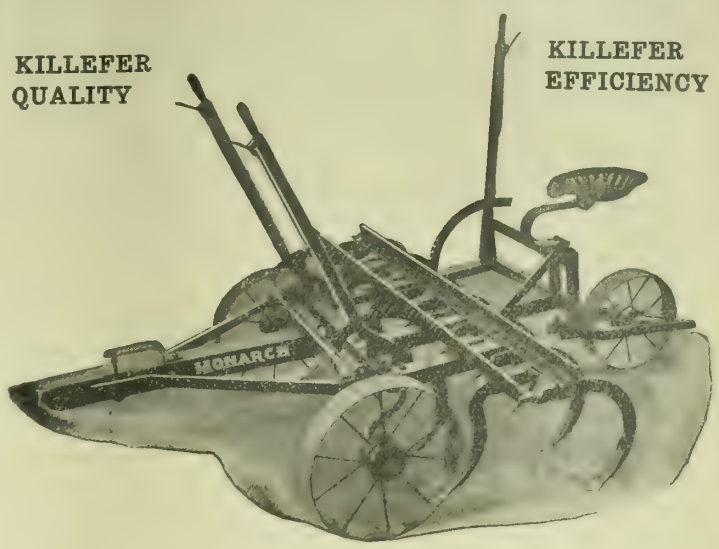
Will sell one-half or all at bargain.

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The Killefer Monarch Cultivator has more varied uses on the ranch than any other tool we manufacture. As a Chisel for bean and beet ground before planting, it has no equal. As an Orchard Cultivator, where deep cultivation is desired, it gives perfect satisfaction.

As an Alfalfa Cultivator, when fitted with our Special Alfalfa Tooth, it does excellent work, loosening the ground to a depth of from six to eight inches without injuring the stand. This deep cultivation enables the water to percolate to a greater depth than any cultivator on the market. Made in 5, 6 and 8-foot sizes.

The Killefer Manufacturing Co.

2209-21 Santa Fe Ave. Los Angeles, Cal.

THE ALPHA AUTOMATIC POWER SPRAYER



Fitted with
THE ALPHA AUTOMATIC PRESSURE GOVERNOR

ELIMINATES unnecessary wear and tear on both the engine and the pump.
THE PUMP STOPS when nozzles are closed. No liquid being pumped except it is forced through the nozzles.
NO RELIEF VALVE or diaphragm for the spray material to corrode and get out of order.
THE AUTOMATIC PRESSURE GOVERNOR is a simple arrangement of a combined lever and spring on each plunger connecting rod, which, when the pressure reaches a predetermined limit, automatically discontinues the operation of the pump without interrupting the driving power, again permitting it to resume operation when the pressure falls below the point at which it has been set.
THIS INSURES SAFETY, secures uniform pressure and eliminates unnecessary wear (no liquid pumped except it passes through the nozzles), the pressure relief is not dependent on the operation of a sluggish or defective relief valve, but is positive and mechanical, thus making it impossible to run the pressure up to the danger point.
BUILT IN ALL SIZES from a 2x3 inch pump and a 150-gallon tank to a 2½x3-inch pump and a 200-gallon tank. (Either Duplex or Triplex).

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Everything for the Dairy.

No Pit
is required with the
Krogh Deep Well Turbine Pumps



For bored or drilled wells from 10 inch inside diameter up; and for capacities of 250 to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.

Krogh Manufacturing Company

San Francisco Los Angeles

Mechanical Power on the Farm.

POWER LAND LEVELING.

[Written for Pacific Rural Press.]

Wholesale land leveling is the pleasure of W. L. Hodges on his recently acquired ranch near El Centro. A Yuba 18 tractor pulls a Schmeiser Jr. Land Leveler, about the only one yet in the valley. A man must pay attention to the tractor all the time, for when the leveler gets full of dirt, the engine requires more fuel. It smooths off an eight-foot strip at a time in fine shape.

The leveler is composed of an iron frame hung behind the tractor with two four-foot wheels to carry its weight behind. In front of the wheels is the scraper, a vertical sheet of heavy iron three feet high and eight long, with a steel cutting edge and with wings to project forward several feet. The scraper is raised and lowered by compressed air.

The compressor is set on a bracket shelf bolted to the tractor frame just above and in front of the left track. A belt from the engine pulley wheel runs it and forces air through a coupled rubber hose and a fixed iron pipe, to the air tank behind the scraper but in front of the operator's platform. From this tank, the air passes by a pipe to a pressure gauge, safety valve, and handvalve. When the handvalve is turned one way, air passes into a vertical cylinder from the bottom, and forces the piston upward. The piston works a lever on a rotating axle which extends across above and back of the scraper. The short arm of the lever forces the scraper down into the dirt and is helped by a fixed arm near the other end of the axle. Turning the handvalve the other way lets air into the cylinder from above, forces the piston down and lifts the scraper. The wheels, being behind the scraper, are always on leveled land. A bump in front of the scraper is cut off and carried along until a depression is encountered and filled, or until the scraper is lifted at the low part of the field.

AUTOMOBILING CHERRIES TO MARKET.

[Written for Pacific Rural Press.]

The popularity of Beaumont Tartarians is attested by the statement of Cecil Grigsby that last season there was a line of automobilists waiting almost every day in the season to buy them at the Highland Home ranch for 10 cents per pound. The travelers had to turn off the Riverside drive a couple of miles and back to get the fruit. Mr. Grigsby says they sometimes sold over $50 worth in a day.

The automobile also helped to market several tons direct to the stores in Redlands. They would load up as much as 1000 pounds at a time on their trips to town. Many of these cherries were sold at 12½ cents alongside of northern Tartarians which sold at half the price because not so large or fresh.

CAUSES OF CARBON DEPOSITS.

If the amount of air entering the carburetor is not sufficient to insure complete combustion, we have what is known as a rich mixture, says a bulletin on carbon deposit and its causes, issued by the Standard Oil Company. This is a slow-burning mixture rather than an explosive one, and will cause excessive carbon deposit.

For example, if the wick of an oil-burning lamp is turned too high, too much oil will be siphoned through the wick for the amount of air entering the lamp to form complete combustion. The lamp will smoke, and soot, which is carbon, will be deposited on the chimney.

This is exactly what happens in the cylinders of a gas engine. The products of incomplete combustion of the gasoline deposit a certain amount of carbon in the combustion chamber. This carbon deposit will build up very much more quickly if it has a bed to build up on, such as would be produced by a lubricating oil which, when exposed to the heat of explosion, would leave a gummy deposit.

Lieut. G. S. Bryan, U. S. N., has ably and correctly pointed out in his article on "Motor Cylinder Lubrication" that lubricating oils manufactured from paraffine crude oils deposit more carbon than lubricating oils manufactured from asphaltic base crudes. The reason for this is that paraffine base crudes contain paraffine wax which cannot be entirely eliminated from the manufactured product.

SAWS ORCHARD PRUNINGS.

[Written for Pacific Rural Press.]

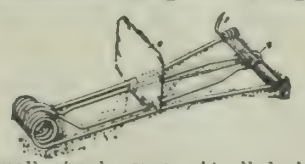
In many old orchards there are trees with much dead wood which is shading and smothering new growth, besides many trees that are dead from decay or crown gall. Such an orchard was not long ago cleaned out by Paul Davis of Banning and many cords of wood piled up. To cut this hard, dry orchard wood he has a 6 h.p. Fairbanks-Morse engine mounted on a plank platform with a circular saw of the same make fixed with a heavy flywheel, on a frame of angle irons. The whole outfit can be moved at pleasure.

AUTO RUNS SILAGE CUTTER.

[Written for Pacific Rural Press.]

"We chopped a big load of frosted second crop feterita into ⅜-inch pieces for silage, in ten to twelve minutes, with an International silage

Macabee Gopher Trap

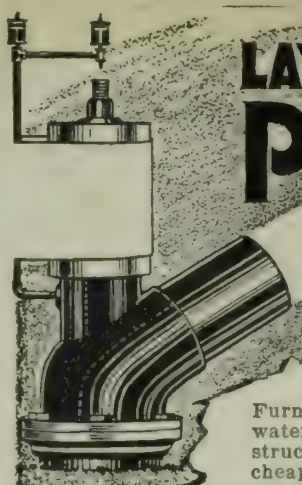


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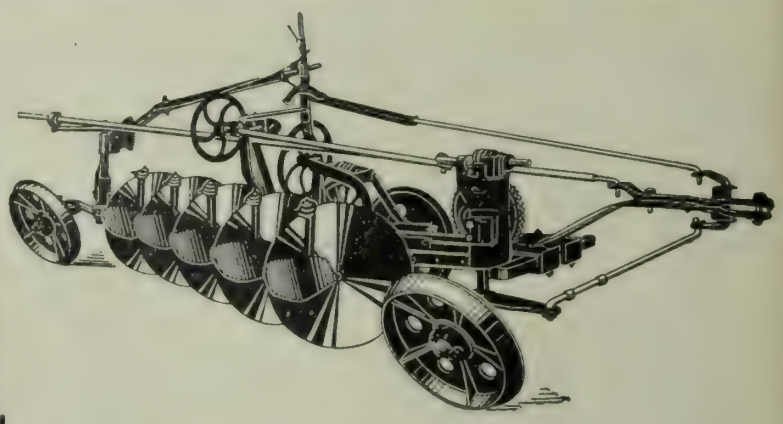
IT'S MIGHTY poor policy to put in a pump that is not thoroughly reliable. Such a pump proves the most expensive in the long run. It invariably breaks down or causes trouble right at the time you need the water supply most. But if you install a Layne & Bowler Pump, your pump troubles will be entirely eliminated. Layne & Bowler Pumps are supreme in every respect. We can prove it to your entire satisfaction.

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SEND FOR THIS BOOKLET NOW





Knapp Engine Disc Plow

With this plow you can work within one foot of the trees in throwing the soil from the trees. Built very low, so that no part can come in contact with the limbs of the trees. Will penetrate hard soil and will not jump or swing round. Will turn under and completely cover up any cover crop or foul growth NO MATTER HOW HIGH OR HOW THICK.

WILL NOT CLOG UP IN PLOWING BUR CLOVER OR VETCH, as it has a wide clearance.

NO LEVERS to come in contact with limbs, as the land and furrow wheels are provided with worm-gear lifts, which does away with the levers and makes the plow easy to raise or lower.

TURNS EITHER TO RIGHT OR LEFT, and is steered by the engine as well as by hand.

The seat is in the center of the plow to keep the driver away from the trees, and all operating rods are within easy reach from the seat.

MADE IN ALL SIZES to suit every size and make of tractor.

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FAMOUS LUITWIELER PUMP



Correct in every detail. No trouble. Cheaper water. Perfect satisfaction. 3 Irrigation Booklet free. Luitwieler Pump Eng. Co 713 N Main St Los Angeles

Throttle-Governed CUSHMAN GAS ENGINES.
Steady Running. For Spraying, Woodsawing, Etc. Write THOMAS R. BROWNE,
Stockton, Calif.

cutter connected by a jack shaft to the hind wheel of a little automobile," says F. H. Vander Poel of Imperial county.

"We kept a ¾-inch stream of water running into it all the time, and it makes the finest kind of silage. The short cutting makes it pack better and increases the silo tonnage."

FAST SEEDBED PREPARATION.

[Written for Pacific Rural Press.]

Cotton follows corns on 320 acres of the W. Deering ranch near El Centro. The corn was well pastured down by the middle of January. A 60-65 Caterpillar was hooked to seven 14-inch plows, behind which was a disk and a spiketooth harrow, turning and working down the soil at one operation without ever running on plowed ground. The last 80 was somewhat sandy land, the rest of it more mixed with adobe. The heavier land had been fined two or three inches deep by a weighted 16-foot double disk pulled by the engine before plowing. This cut the stalks so that they did not interfere with plowing. It disked 40 acres a day at a cost of 50 cents an acre so that the hardest 80 turned over "like a garden." Rain prevented disking the softest 80 and what few stalks were left required continual stopping to clean them from the plows. There was plenty of power, even in the rod or two of Bermuda grass which bordered the fence. Two plows were broken, but the outfit was kept going, and with only five plows, turned, disked, and harrowed 30 acres per 24 hours.

The engine was rented, at $15 per day. One man was required on the engine, another on the plows, and another man was useful when stalks stopped the outfit by lifting the plows out of the ground. Where the land was previously disked, it cost $2.25 to $2.50 per acre for engine rent, fuel, oil, and wages to plow, disk, and harrow, using two shifts of 12 hours each, to rush the work along.

Each plow was hitched independently to the diagonal side of a triangular frame of 5-inch angle irons. Each plow was preceded by a wheel to regulate depth, and by a coulter. When stalks did not hinder, they plowed about five inches deep. The engine disk was double, the fore part being angled backward from end to center, while the rear part was angled forward and the disks set facing the opposite direction.

The fast plowing enabled Mr. Deering to get full benefit from his cornstalks and also to wait till millions of weed seeds had germinated.

WANTED MOVABLE POWER.

"We've been choping most of our hay," said J. N. Huston, who is interested with his son in a large dairy near Imperial, including over 100 head of pure-bred Jerseys. "We use a Bull tractor, and Ohio Monarch cutter which handles 20 tons a day. The only trouble with the cutter is that it lets so much chopped hay drop underneath that the conveyor would get choked if we didn't keep a man to clean it out.

"We have a 5-h.p. gasoline engine, a 5-h.p. steam boiler, and a 10-h.p electric motor, but we got the tractor largely with the idea of having power that we could use in various places without hitching up a team to haul it around, besides starting the engine.

"We will use the tractor on a 3-inch pump to take liquid manure from the cesspool which will receive drainage from the stables. We will also use it to pump whey and skim milk at the hogpens out of a 1500-gallon cement cistern, which now receives the wastes from the dairy by gravity.

The tractor is a 22 h.p engine. Of course not nearly all the power is used in pumping, but the extra strength is available when we want it for any of the numerous heavier tasks about the ranch, and it didn't cost much more than a smaller one."

TRACTOR HAULS 30 TONS.

A road tractor beats the cars in hauling hay from Chino in San Bernardino county to Los Angeles, 39 miles by rail.

A. J. Spohn of Inglewood, who does hauling on a large scale, recently took a man and six hay wagons to Chino empty to haul back 30 tons of hay. He figured the round trip would take about three days, and would cost about $40 for his time, hired labor, oil, and gasoline. The engine is rated at 60 h. p. but Mr. Spohn says it develops 90 h. p. and hauls 30 to 50 tons on the ordinary paved country roads of Southern California.

PUMPING AGAINST BLIGHT.

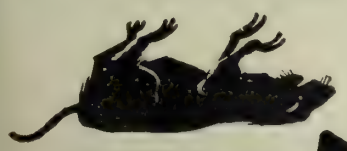
[Written for Pacific Rural Press.]

Irrigation for walnut blight control is to be the next experiment of Robert Main on his orchard near Goleta. Last fall he dug a well 455 feet deep with a 12½ inch casing all the way down. In the test pumping. a 75 h. p. Caterpillar engine pumped it several days 10 to 12 hours per day, but did not dry it out.

Mr. Main has been co-operating with the University several years in experiments for control of blight by pumping, spraying, and manuring, but last summer, perhaps a third of the six-ton crop blighted. The disease was very prevalent at Goleta last season.

Examine the connections on coil and batteries.

. Keep the connecting rod bearings tight.



KILMOL got him

One squirrel or gopher can do more damage for his size than anything on four legs. But Kilmol gets 'em every time—no uncertainty—a *sure* way at last.

KILMOL
SQUIRLGOPHENE

Will Kill 'Em All

Simply saturate a waste ball with Kilmol, put *one* ball in tunnel, ignite in from 3 to 5 minutes. The deadly gas does the rest—does it *quickly*—one treatment is enough. Results absolutely guaranteed or money refunded. Government, State and County officials use Kilmol. **Ask your local dealer** Write for information on squirrel and gopher eradication.

Herbert F. Dugan
1170 Sutter Street
San Francisco
Dept. B.



Not Acreage But Production is the True Measure of Profit

Profit is the difference between what your crops cost you and what you get for them. The ratio is the same whatever the acreage of the farm.

The farmer who can cut down cost and increase production is the one who will make the most money on his investment.

G-E ELECTRIC MOTORS FOR RANCH AND FARM

will positively accomplish the following results:—

Save loss from drought and increase crops by supplying steady, dependable power for irrigation.

Save labor by driving farm machinery formerly worked by hand.

Save repair bills—owing to their simple, sturdy construction, G-E motors operate for years without getting out of order.

Save time,—G-E motor-driven machinery does job or "chore" in a fraction of the time taken by slow hand methods.

Ask your local power company to demonstrate what electricity will do for you in the house, dairy, barn and field.

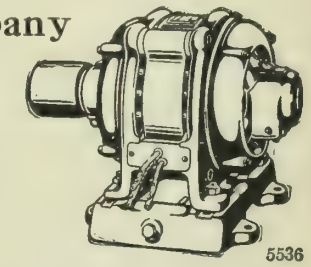
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The General Electric Company will gladly answer all questions relating to the use of electric power for ranch and market garden irrigation.

Address nearest office.



5536

THE WINSBY PUMP

Our New 1915 Type Pump



Best Model for Low Lift Pumping

Price Size	1 in.	1¼ in.	1½ in.	2 in.	F. O. B. Cars Oakland
	$16.00	$20.00	$25.00	$30.00	

Larger Sizes at Proportionate Prices.

Complete Pumping Plants of Any Size or Type Furnished and Installed.

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Pumping Machinery of All Kinds and for All Purposes.
Mining, Milling, Concentrating and Rock Crushing Machinery.
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WE CARRY IN STOCK

Pipe	Belting	Pulleys	Shafting	Boilers
Casing	Leather	Wood	Hangers	Steam
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and	and	and	and	and
Fittings	Canvas	Cast Iron	Boxes	Supplies

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We are the largest manufacturers of pumping machinery on the Pacific Coast.

Second Hand PIPE Screw Casing

ALEXANDER PIPE COMPANY

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CO-OPERATION OF TABLE GRAPE GROWERS.

A very instructive lesson in co-operation is found in the success demonstrated by the San Joaquin County Table Grape Growers. At their recent annual meeting a dividend of 20 per cent was ordered paid on the stock issued to growers forming the association. Since organization the stock has trebled in value, this valuation being a standing offer from the association to any of its members desiring to dispose of his stock. This dividend comes after the association has paid out $5000 for a site for its packing shed and also paid a tonnage dividend to all of the members who shipped their grapes through the association last year.

Upon organization several years ago the growers immediately got busy improving the table grape product. In a very short time the standard of the fruit was the highest, intelligent cultivation, picking, packing and distributing having been brought about through inspections and general educational activities entered upon collectively and individually. As a result of the co-operative effort of the table grape growers of the Lodi section many of the eastern markets have come to accept shipments from that district without question, having learned of the standardization insisted upon and the rigidity with which all inspections are made before the stamp of approval is placed upon them.

At the last annual meeting the following directors were elected: G. W. Ashley, A. S. Lasell, W. C. Brown, Richard Lower, Henry Pope, E. A. Benedict, W. S. Clark, Dan W. Bird and H. J. Couper. After the election the new board met and organized, electing the following officers: G W. Ashley, president; A. S. Lasell, vice-president; W. C. Brown, secretary. Last year was the most prosperous year in the history of the association, and besides paying the above dividend the association still has a good working capital in the hands of the treasurer.

ALMOND GROWERS PLEASED WITH ASSOCIATION.

To the Editor: The annual meeting of the Arbuckle-College City Almond Growers' Association, a unit of the California Almond Growers' Exchange, was held in Arbuckle February 12th, with a majority of the tonnage present.

The members expressed themselves as being well pleased with the work of the Association, giving the Directors full power to erect a warehouse for the Association at that point. The following resolution was also passed:

Resolved: That we deprecate the demoralizing tactics now employed by almond speculators in guaranteeing to cut any association price, and that we urge the almond growers not members of the Exchange to co-operate at once through that medium for our future safety in the maintenance of price and development of markets.

Hundreds of acres of almonds are being planted this spring at Arbuckle, which with the present acreage that is bearing, will make this section one of the most important almond sections in California.

San Francisco. T. C. Tucker.

About 125 acres of shipping plums will be planted in the vicinity of Oroville this year as a result of a widespread agitation that was started last fall.

HAND POWER
K Stump Puller
Land clearing an easy, one-man job—big stumps pulled clean with this wonderful machine.
Works on any land. Operated by hand! No horses; no digging. Made of forged Krupp steel—guaranteed. Adopted and used by U. S. Government officials and many states. Send for FREE illustrated book on Land Clearing and special offer.
Drop a postal to W. J. FITZPATRICK Box 32 182 Fifth Street San Francisco, Calif.
ACTUAL PHOTOGRAPH

Standard Books on California Agriculture

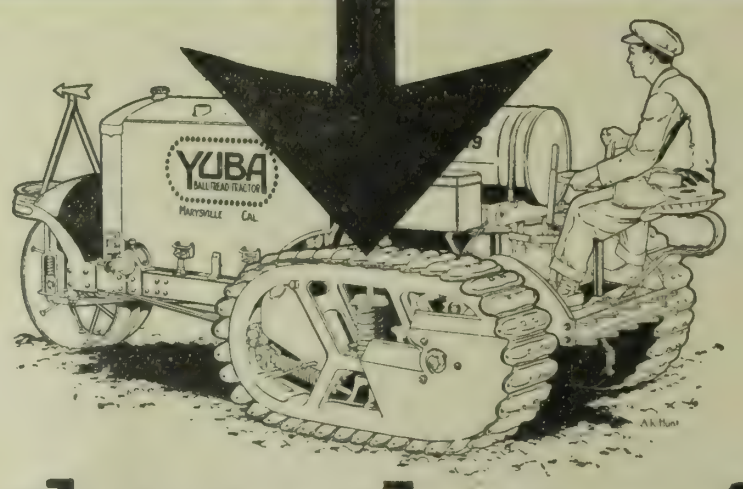
California Fruits and How to Grow Them. Wickson $3.00
California Vegetables in Garden and Field. Wickson $2.00
One Thousand Questions in California Agriculture Answered. Wickson $1.50
California Flowers, Trees, Shrubs and Vines. Wickson $1.50
California Poultry Practice. Swaysgood $1.00
California Hog Book. Guilford $2.00
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PACIFIC RURAL PRESS, 525 Market St., San Francisco.

PIPE
For Every Purpose NEW Threads & Couplings. Hot Asphaltum Dipped
Second Hand and NEW
Screw Casings Fittings and Valves Guaranteed for Pressure
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FOR SALE
Exposition Salvage
Choice plumbing, electrical material, etc., like new; 4,000,000 ft. best T. & G. Flooring, used short time, $15.00 per M. ft. Dimension Rough Pine, $7.00 to $13.00. Wreckage from 60 bldgs. Everything highest class at $.50 on $1.00. We load car in grounds and guarantee. Consult a neighbor who knows us, if you don't; full measure and in dimensions as specified. Get our estimate.
SYMON BROS.,
The Largest Coast Wreckers. Distributors of Exposition Salvage.
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Dealers 57 FIRST STREET SAN FRANCISCO
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DOUBLE the EFFICIENCY OF YOUR AUTOMOBILE.
Hitch on a Jackson
AUTO-TRAILER
MODEL 22 $60.00
Other models up to $125.00
Write for catalogue.
Marteco
332 Pine Street, S. F.



Right to the point

At this season of the year, the most important point in farming is to secure a tractor that stays on the surface of the soft soil.

Owing to the Ball Tread, the Yuba works on ground that is too soft for horses—and with angle irons bolted to each alternate tread, the pressure per square inch is further reduced by thirty per cent.

And now—

Right to the point—The Ball Tread is an exclusive Yuba feature—protected by patents. It is the secret of the Yuba's economical operation under every condition encountered in farming—in the mud—on the side of a hill—or in the sandy orchard.

The catalogue explains why—write for it.

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433 CALIFORNIA STREET SAN FRANCISCO, CALIFORNIA

THE YUBA BALL TREAD TRACTOR
THE YUBA CONSTRUCTION CO.
433 California Street
Department A-33.
San Francisco, California
Gentlemen:
Kindly send me a copy of your booklet "The Yuba Ball Tread Tractor."
Name .....
P. O. Box .....
Town .....
State .....
Size of Farm ..... acres.
CHECK MAIN CROP RAISED
Fruit ..... Rice .....
Grapes ..... Alfalfa .....
Grain ..... Hops .....
Hay ....

Imperial County's Dairy Opportunity.

(Continued from page 249.)

pay a premium for Grade A cream beginning February 1, no cream is coming in now that would qualify under Grade A."

This corportion has recently effected a sort of coalition with a statewide creamery company which has been a pioneer in cream grading, and whose product has become known as of the best. The Imperial Valley butter will be sold under the brand which this company has made popular by years of expensive, painstaking effort; showing the faith of professionals in the possibilities of butter from this valley. They foresee the absolute necessity of selling California butter, in the East, and are preparing to make that which will compete there with fresher butter from Eastern States.

To get cream in the hot months, from which worthy butter can be made, there are alternatives, and the creameries will take advantage of both. A few progressive dairymen with the required capital are milking their cows in covered open-sided barns with wood or concrete floors, are using milk coolers, and sterilizing separators and milk utensils with steam. There are even a few who are operating milking machines.

From such, the creameries will collect cream daily by auto trucks and by the short railway lines in the valley. There are many others who milk in open corrals the year around who also will produce cream which can command the premium to be paid for Grade A.

From the rest, an effort will be made to collect whole milk once or twice daily by trucks. Then, if bad butter is shipped, the creameries will have to take the blame. They are willing. They also report that the whole milk proposition meets favor with most of the dairymen, who in Imperial Valley do not so generally have hogs to use the skim milk, which is now thrown away. If they wish, it can be returned to them sterilized and safer for the hogs. Many are from Humboldt and other sections already accustomed to selling whole milk.

Other Dairy Outlets.—The creameries taking whole milk will open another outlet for dairy products. A casein factory is nearly built in El Centro, and in time, a milk sugar factory will be built to save this product, which until then will be wasted. Other outlets are cream for Los Angeles, and cheese, though the cheese produced in the valley declined from 185,000 pounds in 1914 to 61,000 in 1915.

Open Barns.—The valley is unique in its rainlessness and heat. The best shelters have no sides, and the roofs are either of galvanized iron or of hay, cornstalks, etc., on a frame high enough for breezes to pass under. The iron roofs beat through sooner, but are fireproof and cool quickly with evening breezes, while the hay roof might burn quickly, and holds heat later at night, though it keeps the day's heat from people and stock under it. Corrals seldom get distressingly muddy anywhere in the valley, and are easily fixed with sand, which does not usually need to be hauled far. Imperial Valley's dairy opportunity is wonderful. Over 300,000 acres are fully supplied with cheap water which, in being used, constantly adds fertility to the land. Half as much more is likely to be irrigated. Practically all of it is adapted to alfalfa, barley, and sorghum corns. Barley is usually sowed in the alfalfa to provide winter pasture. Where barley is sowed alone, it is followed the same season by a crop of milo. Cottonseed meal is more available there than elsewhere in California. Trees grow faster there than elsewhere. Shade and shelter are cheaper than elsewhere, the cattle stay out of the sun in summertime, mostly grazing at night. With so large a community, all feeding practically the same feeds, grown on their own farms, making complete balanced rations, including succulence the year round, with shelter so cheap, and with cream-grading, whole milk receiving creameries, there seems every reason why Imperial county should lead all others in quantity of dairy products, in cheapness of production, in uniformity of quality, and in market demand.

As a breeding center, there is every opportunity to make this section as attractive for special trips of prospective buyers of pure-bred stock as Wisconsin now is. Community breeding and community advertisement of the stock could here be made uniquely successful. The few pure-bred herds now in the valley furnish widely scattered nuclei for the spread of pure breeding if the owners of these herds shall realize the advantage of anthentic records and persistent advertising. Such records should show cheaper cost of dairy production by pure-breds.

TUBERCULOSIS HOGS A HEAVY LOSS.

[Written for Pacific Rural Press.]

Cholera is generally supposed to be the most costly disease to the swine industry of this State, but it has a very able ally in tuberculosis, as is shown by reports of the U. S. Meat Inspectors at one of the largest packing plants in San Francisco.

During one week in January, 1916, this company killed 3,085 hogs, of which 31 were condemned on account of being tubercular, two because of cholera, one on account of pneumonia and two because of septicamia. There were also 328 hog heads condemned the same week on account of tuberculosis. From this report it will be found that 1.17 per cent of all animals slaughtered were condemned on account of tuberculosis, while 10.63 per cent of all the heads were condemned for the same reason.

This loss, while apparently borne by the packers, nevertheless, comes out of the producers' pocket in the final analysis as it represents a portion of the middleman's cost of operation.

The reason for the heavy percentage is directly attributable to the feeding of raw skim milk from tubercular cattle and may be readily overcome by heating all milk to a temperature of 150 degrees before feeding. This may either be done in a large vat, with a fire underneath or by turning steam into the milk from the boiler in the separator house.

It is a loss which should command more attention by skim milk feeders at this time as it is affecting the buying of hogs in dairy sections, and may, if the condition gets worse, place the skim milk hog in the list of undesirables, similar to the "acorn hog" at the present time. This should not be, as good skim milk is too valuable a hog feed to come into bad reports through careless methods

BALANCED RATIONS FOR COWS.

To the Editor: I would like a balanced ration to feed my cows to get the best results. One cow is 7 years old, ¾ Jersey giving 4 gallons, 5 per cent butter fat per day; one is 3 years old, ¾ Jersey, giving 4 gallons, 5 per cent butter fat; one is 2 years old, ½ Holstein, ¼ Jersey, giving 3 gallons, 4 per cent butter fat. All in good condition being fed 8 pounds bran and 2 pounds oil cake meal per day, with alfalfa hay. Feed can be procured as follows: bran $1.50, middlings $1.90, ground barley $1.70, cottonseed meal $2.00, oil cake $2.25, beet pulp $1.20 cwt. I have alfalfa hay and a little green pasture.—S. C. M., Sonoma.

[Answered by Professor F. W. Woll, University Farm, Davis.]

[The correspondent is feeding altogether too much protein for best results, both so far as the cows and their production and his own pocket book are concerned. All three feeds given in the ration of the cows are high in protein (flesh-forming substances), and instead of 2 or 2½ pounds of digestible protein that good dairy cows like these require, he is supplying over 4 pounds, and the nutritive ratio (proportion of digestible protein to starchy components) is 1:3.3, while it ought to be 1:5 or still wider; furthermore, both concentrated feeds are expensive, and the price of oil meal even prohibitive. Of the grain feeds given, dried beet pulp and ground barley are the cheapest ones that can be fed to advantage with alfalfa hay. Both these feeds are high in carbohydrates (starchy components) and, therefore, make excellent supplementary feeds for cows on alfalfa hay. I would suggest giving a grain ration of dried beet pulp 2 parts, and barley 1 part, by weight. This would be further improved by feeding some cocoanut meal, which costs no more than barley, as a general rule, and being aromatic and high in oil, increases the palatability of the grain ration. If cocoanut meal is available, a mixture of beet pulp, barley, and cocoanut meal in the proportion of 3:2:1 by weight, will make a very effective ration, with alfalfa hay fed as roughage—one pound of this mixture for every five pounds of milk produced by the cows whose milk is as high in butter fat and solids as that of these cows.]



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Should He Try Cross Breeding?

To the Editor: I have a thoroughbred Jersey cow. I thought of breeding her to a thoroughbred Holstein bull. Do you thing that would be a good cross or would you breed her to a thoroughbred Guernsey bull?—Reader, Santa Cruz.

[The word thoroughbred should not be used in reference to dairy cattle any more than you would say "Berkshire Jersey cow," as thoroughbred is the name of a breed of running horses and does not signify pure breeding in other kinds of livestock.

As to whether you should use a Holstein or Guernsey bull to breed your cow to if she is a purebred Jersey, we should say neither, that is if you are expecting to raise the calf for dairy purposes. The chance of variation is so great when animals of two distinct breeds are mated that you cannot afford to do it unless as an experiment. It would be far better to breed her to a purebred Jersey bull.

Of course if you don't care for the characteristics of the Jersey, and want to spend some years in building up a grade herd, having the characteristics of one or the other breeds mentioned, you should breed to a bull of the breed you prefer and keep at it till you have the Jersey blood about bred out and the other breed, bred in. The characteristics of the the Guernsey and the Jersey are more nearly the same than those of the Holstein and Jersey, but we can't decide for you which one to choose. Make up your mind which one best suits your tastes and needs and act accordingly.—Editors.]

CONCRETE SILO CONSTRUCTION.

To the Editor: I am thinking of building a silo 16 by 30 feet and want to build it the cheapest and best. I have sand and gravel in abundance a quarter of a mile from my barn. Please state through the columns of the Press about cost and what proportions of moisture the concrete should have, and in your opinion are they cheaper than a wooden silo. The complaint has been made, with all that I have seen, that there is too much waste around the sides of cement silo, but no doubt they have learned to overcome that. —A. L. M., Stoneyford.

[A concrete silo the size you indicate would require about 51 barrels of cement, 14 cubic yards of sand and 28 cubic yards of gravel if the mixture were one part of cement, two of sand and four of gravel, which is the right proportions for silo construction. We cannot tell you exactly how much water to use, but in a general way would say that if the mixture is too dry, there will be porous places that will admit the air and on the other hand, if the mixture is too wet the sand will run, leaving the gravel without enough cement to prevent cracking and to exclude the air. The success or failure with a concrete silo lies largely in this very part of the construction; and unless you have had experience in handling cement or can secure a man who does know, you had better decide on a wooden silo.

It is true that a concrete silo is the most permanent, if properly constructed, but the initial cost is considerably more than a wooden one, and as you have found by inquiry, there is more danger of them being unsatisfactory, on account of the above reasons.

The cost of constructing a silo the size you mention will vary according to the material used for reinforcing and the utilization of the forms used. We have no definite figures at hand as to cost of construction, but would say that the cost would run $400 to $500 for the size silo you mention, which is considerably more than the cost of wooden silos. A discussion of this point by subscribers having had experience would be of interest at this time.—Editors.]

EGYPTIAN CORN FOR HORSES

To the Editor: Is ground Egyptian corn as good a feed for horses that are working this time of the year as rolled barley? Would it be good to feed to milk cows with alfalfa hay?—W. F. P., Turlock.

[Answered by Professor F. W. Woll, University Farm, Davis, California]

[Egyptian corn or White Durra does not differ greatly from barley, either in chemical composition or digestibility. Its feeding value is generally estimated to be somewhat lower, viz., about 90 per cent of that of barley. Like Kaffir corn, it is often fed in the head to stock. It may be fed to horses in this way or coarse-ground. While it may be considered nearly as valuable as rolled barley for working horses, it is likely that a mixture of equal parts of the two grains would be relished better than either grain fed alone; at any rate, better than Egyptian corn alone; this applies to cows as well as to horses. Both the grains given make excellent supplement feeds with alfalfa, as they are high in carbohydrates and low in protein. while alfalfa is a high-protein feed.]

BREWERS' GRAIN FOR DAIRY COWS.

To the Editor: Will you tell me how to feed brewers' grain to dairy cows and also its value as a feed to dairy cows?—C. E. S., Chico.

[We presume you mean the wet brewers' grains as they come from the breweries. This is an excellent feed for dairy cows, when fed in a sanitary manner and in the right amounts. It should be fed with dry roughage and some concentrates, in which event as much as 20 to 30 pounds daily per cow may be used. Prof. F. W. Woll, in his book, Productive Feeding of Farm Animals, states that the wet brewers' grain may be considered worth about one-fourth as much as the dried grains, which compare favorably with barley as a feed to dairy cows. Care should be taken to keep the mangers clean, to avoid foul odors which will arise when brewers' grains are fed otherwise.—Editors.]

TELLING AGE OF COWS.

To the Editor: Kindly inform me how to tell the age of a cow.—C. I., Lathrop.

[If the cow has horns, you can tell after the third year by the rings on the horns, which first appear when the animal is three years old. one being added each year afterwards. You can also tell by the teeth as with horses, in this manner: The central incisors are found at birth, the internal lateral at one week old, the external lateral at two weeks and the corner incisors at three weeks. Their replacement by permanent incisors are about as follows, though there is more variation than with a colt: At 12 to 18 months old the central incisors are replaced, the internal laterals at about two and a half years, the external laterals at three to three and a half years and at about three and a half years the corner incisors.—Editors.]

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Cactus or Alfalfa for Hogs?

To the Editor: Which is the best feed to grow for hogs, alfalfa or cactus? I have three acres that I would like to plant as I intend to raise quite a few hogs. Also the style of house that would be best for, say, 10 sows, also size of runs, and would cement floors for their sleeping quarters be best?—J. W. N., Livermore.

[Answered by Elmer Lamb, Ceres, Stanislaus County.]

[Three acres will not supply the green feed for any great number of hogs. However, it can be made to serve for the 10 sows your subscriber speaks of and their litters till weaning.

Cactus will not take the place of alfalfa but will be an excellent feed for the hogs after the frost has killed the other green feed. I value cactus chiefly for its succulence; as an appetizer and conditioner.

The great problem in winter, with all livestock is to get them to consume enough water to keep all of the organs working properly. As cactus is 90 per cent water and as all stock eat it with a relish when accustomed to it, it supplies a large per cent of the liquid to keep the bowels loose and the digestive tract in tone. In your subscriber's case I think I should plant half an acre to cactus (the Anacantha variety) and the rest to alfalfa. Feed the cactus when there is no green feed and along with alfalfa.

A very convenient hog house can be made, arranged with a four-foot alley through the center—with pens on either side. The nest rooms should be made eight feet square. That would require the building to be 20x40 feet. Cement floors are the cheapest but require plenty of bedding in the winter as they are very cold for small pigs. In the summer they are cool and pleasant and also more sanitary than board floors.

While I never used it I believe asphaltum would make the ideal floor. A run the width of the room and 30 or 40 feet long, arranged with feed trough at the far end, will be all right, supposing, of course, that the sow will have access to pasture.]

[We might add to the above that it is a wise practice to have a movable wooden floor to be placed on top of the concrete floor of the farrowing pen, as many breeders complain of losses of pigs, where the sows in pig sleep on the cold and hard concrete floors.—Editors.]

BERKSHIRES IN MENDOCINO COUNTY.

[Written for Pacific Rural Press.]

The Berkshire swine herd of 96 head on the Hopland Stock Farm is beginning to assume greater importance in livestock operations on that ranch. The foundation for this herd was laid two years ago with five sows and is now headed by the boar Royal Pointer 2nd. This boar was sired by Star Premier Master, having been shipped from Wisconsin after securing awards there at the State Fair.

Ground barley, ground alfalfa, and tankage, together with alfalfa and stubble pasture comprise the ration for hogs. Careful record is kept of everything in connection therewith. One interesting item, taken from the records, shows that for the past two years the sows have averaged two litters every 13 months, seven pigs of each litter having been raised.

A report from the east states that Truman's Pioneer Stud Farm has just sold the Shire stallion, Boro Blusterer, and 17 registered mares to Hawthorn Farm, Illinois. The stallion was first in the aged stallion class and grand champion stallion at the P. P. I. E. His stable mate, Stow Royalty, was purchased by E. W. Westgate, Jr., of Rio Vista, as stud sire for his Shire herd.



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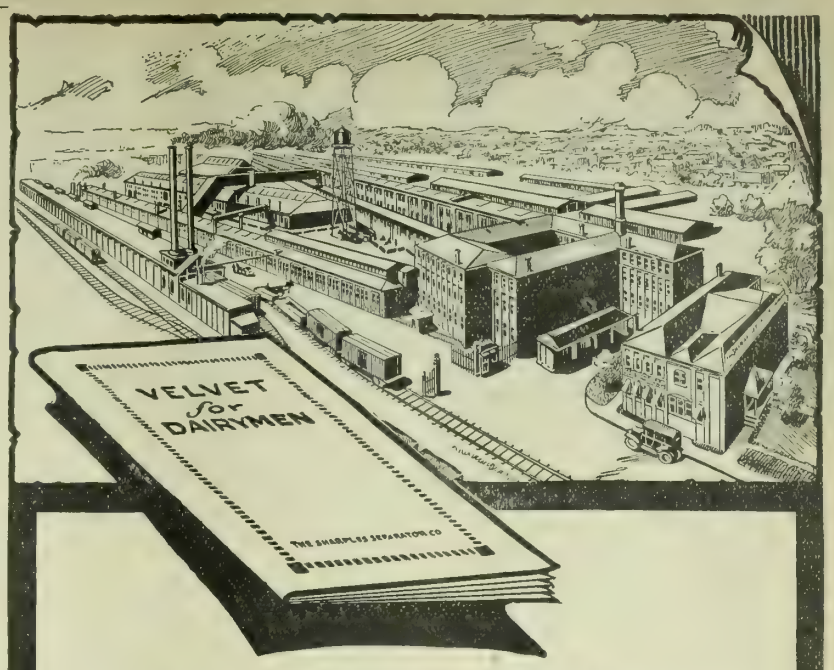
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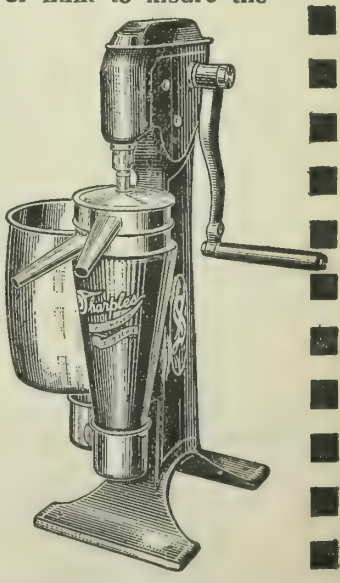
Your separator is losing cream, no matter what the make. A famous experiment station says, "*The use of the gravity can, a low speed of the separator, and an excessive rate of inflow cause heavy loss in butter fat.*" They have proven that 95% of all farm separators are turned below regulation speed. When the speed slackens, a lot of the cream escapes with the skim milk—and with the cream goes the profit.

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DAIRYING.

B. E. Nixon of Napa county has received 22 head of registered Guernsey cattle from the east lately.

E. B. McFarland of San Mateo county has recently received a carload of purebred Ayrshires from Canada.

F. J. Austin has been in the Modesto district purchasing 200 head of Holstein calves and heifers for shipment to Utah

The Dairymen's Co-operative Creamery company of Tulare paid out $46,127 for cream received during January.

California ice cream manufacturers recently held a two days' convention at Fresno, where new officers were elected for the coming year.

The average amount of cream received annually by the Salinas Creamery is about 732,000 pounds, while the average amount of butter fat is 264,000 pounds.

The cow De Kol Pietertje's Favorite Queen 2nd, owned by the State Industrial School, at Whittier, has finished a year's record as a 10-year-old with 711.56 pounds of butterfat.

The Dairymen's Co-Operative Creamery company of Tulare have decided to erect a new plant having a capacity of 16,000 to 20,000 pounds of butter daily. The building will cost about $20,000.

Creameries in Kings county paid $146,000 for cream received during January. It is expected that 1916 will show a material increase in the income from dairying in that county over last year.

Ten dairymen in the Petaluma district were arrested recently by an inspector of the State Dairy Bureau on charges of unsanitary conditions around their dairies. Most of them pleaded guilty and paid fines.

The Visalia creamery paid out for the January cream deliveries a total of $21,000.75. The creamery received 202,800 pounds of cream, from which 65,600 pounds of butterfat were produced, making a total of 81,000 pounds of butter.

The Porterville Co-operative Creamery has purchased the Sunflower Creamery at Poplar, Tulare county, and hereafter all business will be done under the first named company. Chas. O. Premo will continue in the capacity of manager.

W. S. Carpenter, who has a large cheese factory at Carruthers, is building a modern factory at Salida. It will have a capacity of 2400 pounds of cheese a day. The milk from 1400 cows has been contracted for. Cheddar cheese will be made.

Artis Belle King, a registered Holstein belonging to A. R. Anderson of Modesto, has recently finished a 365-day test with 515.47 pounds of fat as a two-year-old. Her seven-day record at calving was 10.47 pounds of fat and at nine months after freshening 9.164 pounds, which shows her persistency.

A report from Sheboygan, Wisconsin, states that Susan, a grade Guernsey cow, has established a record of 170 pounds of butter in sixty consecutive days, which equals the average yearly production per cow for Wisconsin. The test was concluded February 2nd. In sixty days Susan produced 2864 pounds of milk.

We have been reliably informed that there is a strong likelihood of Australia butter merchants coming to California for butter again this summer. Our informant states, however, that the buyers will be more particular on account of last year's disappointing experience and that only butter of known quality will be considered.

D. V. Konzenberg of the Modesto district has purchased from C. Peterson of Ceres, seven aged cows, six heifers and three bulls, all of which are registered Jerseys. Mr. Konzenberg does not believe in raising hay for the market even at the present prices and says that you can't afford to dairy with anything else than purebred dairy cattle at this time.

That California is to make a name for itself in Holstein circles seems apparent from the announcement that a pedigree and sales company is soon to be formed by the leading breeders of northern and central California. It is the intention of the breeders back of this organization, we are told, to make the Sacramento valley the Syracuse of the west. Sales will be held at which all breeders may consign, the association reserving the right to reject any animals which are not of high quality.

The annual meeting of the Ferndale Cow Testing Ass'n was held at Ferndale last week at which time the following officers were elected for the coming year: President, Aksen Quist; vice-president, Guy Sears of Metropolitan; secretary and treasurer, Bernard Crowley; directors, G. E. Trigg, J. N. Fulmor, J. W. Coppini, L. Lindrum, Charles Joppas and H. Hurlbutt. An effort is to be made to secure enough cows to keep three testers busy, there being several herds on the waiting list at present

O. R. McGee of Stanislaus county cut 250 tons of hay from 36 acres of alfalfa last year. He sold 100 tons and has been feeding 35 Jersey cows and calves all year and will have plenty to last till the first cutting this spring. He credits his large yield to the fact that he has a pumping plant and during the months of August, September and October when there is no water in the ditches he can give it a good soaking. His well and plant cost him about $1200 and have paid for themselves in the two years he has used them.

SWINE.

W. D. Trewhitt of Hanford has just received a large type Poland China sow from Iowa. The weight of the sow is given as 500 pounds.

John Daggs is beginning to pick out the choice ones for his show herd at the State Fair this year. He expects to have entries in all classes.

Wm. Bernstein of Hanford has recently sold an eight-months-old Poland China boar to John Baker, which will be shipped to the Hawaiian Islands. There have been a number of hogs shipped to the Hawaiian Islands in the past few years and there is no reason why this market should not be enlarged.

At a meeting held in Glenn county last week, the Glenn County Berkshire Breeders' Ass'n was organized and officers elected. It is gratifying to see the community effort which is being made in several counties of the State with some particular breed of livestock instead of scattering the interest over a large number of breeds.

The auction of registered Duroc Jerseys held by R. J. Ross at Mo-



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It's *the* book, because it's *the* authority on *the* breed—the beautiful, ever-paying Jersey.

This book, "About Jersey Cattle," goes way back to the beginning of the breed, shows how it was line bred and protected from mixture by law, and shows why it has developed into the most economic and most persistent milking of all breeds. It gives tests, yields, etc., proving that the Jersey is the *money* cow—the "Giant of The Dairy."

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HORSES AND MULES.

FOR SALE OR EXCHANGE—Imported Percheron Stallion coming six years old. Guaranteed in every respect; or will exchange for registered Holstein heifers or Berkshire hogs. John Y. Oldham, 214 Grant Bldg., Los Angeles, Cal.

8 JACKS FOR SALE from 1 to 6 years, or will trade for fillies or heifers. We took all prizes for mules at State Fair, 1913. Kelley & Son, R. D. 3, Box 93, Lodi, Cal.

FOR SALE—Large-boned, purebred mammoth Jacks. Best of breeding. Prices and terms reasonable. Satisfaction guaranteed. J. A. Dickinson, Fresno, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

DAIRY CATTLE.

WANTED—Holstein cows with first, second, or third calf. Must be large, healthy, fine dairy type, heavy producers and marked like pure-breds. Want up to 20 for Tulare County ranch. Give full description and lowest cash price. R. H. Whitten, Route 5, Box 647, Los Angeles.

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WANTED—About 25 good dairy cows to be paid for in 12 equal monthly installments. Payment secured by mortgage on stock. Party reliable. Box 205, Pacific Rural Press.

VANADERA HERD OF JERSEYS is now offering fine heifer calves from register of merit cows with official yearly records. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

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JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

HOLSTEIN BULLS—Purebred young Holstein bulls for sale on Thompson Ranch, near Napa For prices and particulars, address J. B. Agee, Napa, Cal.

FRANK MEACHAM, Petaluma, California.—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class, thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TWO REGISTERED HOLSTEIN BULLS out of A. R. O. dams. Sired by King Mead. Ready for service. J. H. Harlan Co., Woodland, Cal.

TWO REGISTERED HOLSTEIN BULLS old enough for service. Very light in color. J. W. Benoit, Route C, Modesto, Cal.

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REGISTERED JERSEY BULLS from register of merit cows. D. F. Conant, R. "B," Modesto.

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BREEDER OF REGISTERED HOLSTEINS—E. E. Freeman, Route B, Modesto, Cal.

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REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

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JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

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BIG TYPE POLAND CHINAS—One to a carload. Any age, either sex. 600 on hand. They have plenty of size, extra good hams and shoulders, strong arched backs, great length, depth and thickness of body, with good looks as well. Many are sired by IOWA WONDER, a 1000-pounder in show condition. I believe his pigs are the best in California. Visitors say they are the best they have ever seen. He sires the kind that grow faster and larger, have more, better and stronger pigs, and are more practicable and profitable—the kind that are highly satisfactory. Extra special prices on account of being overstocked. I have hogs galore. Prices will surprise you. Satisfaction guaranteed. Write Geo. A. Smith, Corcoran, Cal.

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REGISTERED DUROC-JERSEYS—Prize-winning stock from Iowa, Nebraska and Wisconsin. 75 head—bred sows and gilts. Also weanlings in groups of from one to five and boar unrelated of Crimson Wonder, Golden Model, Alvancer, Golden Hero, Orion, Chief and Colonel blood. Price $10 and up. Haden Smith, Route 1, Box 97A, Woodland, Cal.

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BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

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DISPERSION SALE—Registered Poland Chinas. Grand big sows. Herd boars and pigs of all ages. Write quick for low prices and descriptions. Roy J. Turner, Trowbridge, Cal.

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CHESTER WHITES (O. I. C.'s)—Bred gilts, $30. Bred sows, $45. Weaned pigs, $10. Also a fine herd boar 20 months old. D. Bache, Hollister, Cal

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen A. Day, Box 1140, Sacramento.

RANCHO RUBIUS—Durocs all sold except one service boar and a few October pigs. Spring litters will be "best ever." Elmer Lamb, Ceres, Cal.

ROSELAWN STOCK FARM—Registered Poland Chinas and Shorthorn cattle. Young stock, both sexes, for sale. T. B. Gibson Estate, Woodland, Cal.

desto last week was not a financial success; in fact the bidding was so slow that it was thought best to stop the sale after five sows and one boar had been sold. Prices averaged close to $25 for aged brood sows, heavy with pig and buyers considered they got some real bargains. The low prices received were generally credited to the fact that there were only a few outside buyers and to the scarcity and high price of feed at the present time.

BEEF CATTLE.

Chaplin and Maltby of Concord purchased 14 carloads of cattle at the Curtner and Abel ranch in Paradise Valley, Nevada, last week.

C. M. Ellenwood received 20 carloads of Nevada feeders last week for his ranch near Cooperstown, where they will be fed on the foothill ranges.

The sheriff of Tulare county is at work compiling a list of all cattle owners, butchers and buyers, which is to be made a part of a general record for the county. It is thought the list will be of value in tracing lost cattle.

John L. Laney of Tulare county has purchased 53 head of purebred Shorthorns from L. A. and J. K. McComber of Pixley. Many of the cattle in this herd were imported from Kentucky and Ohio and are said to be excellent individuals.

As a result of the good weather which has prevailed the past two weeks grass on the ranges in Santa Barbara county is said to be growing fast and quite a large number of feeders are being shipped into the county as a consequence.

A report from Healdsburg last week stated that there were 2500 head of cattle in Mendocino county sufferng on account of the snow on the ranges. Lawrence Bros. have 250 head on their Alexander Valley ranch which they brought down from the mountains on account of the feed situation.

Preliminary steps for drafting a contract between the State of Nevada and the federal government to handle the fight against rabies were made at a meeting of the State Rabies Commission held at the university last week. All members of the commission were present and the situation was thoroughly discussed and important matters taken up. Official application to the federal government for aid was made and a systematic campaign will be started soon.

Dogs have killed over 75 head of sheep on the Live Oak ranch owned by Frank Meacham in Sonoma county during the past month. Mr. Meacham estimates the cost to be right around $1,000 as they were all purebred animals.

SWINE.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Price and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money makers. Satisfaction or mney refunded. Geo. V. Beckman & Sons, Lodi, Cal.

PLAINFIELD STOCK FARM—Registered Berkshires and Durocs. Young stock for sale, both sexes. H. M. Bullard, Woodland, Cal.

REGISTERED BERKSHIRES—For sale bred sows. Boars ready for service and weanling pigs C. H. Thompson, Novato, Cal.

REGISTERED DUROCS—Fall farrowing. Choice boars and gilts. Crimson Wonder and Model strains. Felton & Hoyt, Hanford, Cal.

POLAND-CHINAS — While the advertisement is short the hogs are long—of the big-boned type. C. A. Cooley, Durham, Cal.

GLENVIEW POLAND-CHINAS—Baby Pigs from best families for sale. From $15 up. Chas. R. Hanna, R. 3, Riverside, Cal.

BIG TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

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POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

REGISTERED DUROCS of guaranteed breeding. Bred gilts, service boars and fall pigs. H. E. Boudier & Son, Napa.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

ROSS' DUROCS—A tip-top lot of weaned pigs. Also 27 bred sows and gilts. R. J. Ross, Route A, Modesto.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

REGISTERED HAMPSHIRES—Winners at P. P. I. E. Stock of all ages. W. T. Gatton, Box 231, Gardena, Cal.

REGISTERED DUROC-JERSEYS from choice Eastern sows. Spring boars and gilts. S. S. Southworth, Napa, Cal.

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REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED DUROC-JERSEY SERVICE BOARS—Inquiries invited. J. H. Hersh, Denair, Cal

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED BERKSHIRES—Big-boned. Cholera immune. Riccomi Bros., Mountain View.

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REGISTERED BERKSHIRES — Prize-winning stock. Sunnyside Stock Farm, Perkins, Cal.

REGISTERED BERKSHIRES—Young boars for sale. Alexander and Kellogg, Suisun, Cal.

REGISTERED POLAND CHINAS of the big-bone type. For prices write James D. Twohey, Livermore, Cal.

PURE-BRED BERKSHIRES—Stock of all ages. Brae Bourne Ranch, Route 3, Box 172, Santa Rosa, Cal.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

REGISTERED DUROC-JERSEY SWINE—Las Paderas Ranch, El Cajon, Cal. M. S. Allen, Manager.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. T. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRE PIGS—Write or call. Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

DUROC-JERSEYS—Registered boars and gilts. John Decker & Sons, Turlock.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

FAIR OAKS RANCH, WILLITS, CAL.—Registered Duroc and Berkshire Swine.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

CHAS. GOODMAN — Breeder of high-class Berkshire Swine. Williams, Cal.

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REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

READAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED DUROCS—All ages Either sex. W. A. Pack, Hollister, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Lakeport, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

BEEF CATTLE

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco, or H. J. Macomber, Paicines, Cal.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale Sired by Landseer 379318, grandson of imported Villager 295884.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

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GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

HEREFORD BULLS—H. H. Gable, Diamond G. Ranch, Esparto, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHEEP.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers, Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

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D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells live stock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.



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The Picked Army of the Telephone

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40 Shorthorn Bulls and Heifers

REGISTERED AND TUBERCULIN TESTED.

NOW, at my farm at Perkins, 6 miles East of Sacramento.

This stock was purchased from the best herds in Nebraska for my California trade, and are as fine a lot of one and two-year-olds as I could secure. Inspection invited. Call and see them before purchasing elsewhere.

Also have a few registered **BERKSHIRE GILTS** for sale.

I will leave shortly for the East to fill orders for Shorthorns and Herefords. Write me at once of your wants so that I may fill your order on this trip.

H. L. MURPHY

PERKINS, SACRAMENTO CO., CAL.

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A few sons of this sire are now available, some of which are soon ready for service.. Several are from half sisters to Aralia De Kol, 30-lbs. butter in seven days at 12½ years, 28090 lbs. milk and 1142 lbs. butter in one year. Prices reasonable.

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Range raised; Guaranteed satisfactory breeders. Field Jacks a specialty. Registered Shire Colts. Will trade for young mules, horses or land.

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Hanford. California.

Veterinary Queries and Replies.

[Answered by Dr. H. B. Wintringham, Petaluma.]

Correspondents desiring a reply by mail should send money order for $1.00. No charge is made when questions are answered through this department.

A CRIBBING HORSE.

To to Editor: I have a young horse that I cannot stop from cribbing or wind sucking. He has it bad. Please tell me if there is a cure.—D. M., Boulder Creek.

[This is a habit that is practically incurable. Try muzzling the animal between feeds.]

HORSE WITH WORMS.

To the Editor: Can you tell me what to do for a horse that has worms?—E. B., Byron.

[Give five grains arsenic, two drams tartar emetic and two drams iron sulphate in the feed once a day for one week and follow with a quart of raw linseed oil.]

SOW HAS WORMS.

To the Editor: One of my sows has gotten so poor that there seems to be no flesh on her. She has a good appetite and gets plenty to eat. She seems to be weak in her hind quarters. Can you tell me what to do for her?—J. A. A., Clovis.

[Your sow has worms. Give her the following: one dram powdered areca nut on an empty stomach, followed six hours later by four ounces of castor oil. Repeat treatment in six days.]

COW WASN'T DRIED UP AT RIGHT TIME.

To the Editor: I have a cow that came fresh February 11, that hardly gives enough milk for her calf. With her first calf she gave an abundance of rich milk and it was almost impossible to dry her up. I feed her well with alfalfa hay and bran. Any advice would be appreciated.—A. N., Lodi.

[Your trouble comes from not drying this cow up before calving. Try the following: Fluid extract nux vomica, one ounce, fluid extract gentain, one ounce, fluid extract cascara sagrada, one ounce, enough Fowler's Solution to make 12 ounces. Give one tablespoonful in feed three time a day.]

HEIFER DON'T COME IN HEAT.

To the Editor: Have a heifer that dropped a calf in August but does not come in heat, although I have had her ovaries manipulated. Is there a medical treatment? One of my horses coughs rather too much and always at night, or if standing idle, but never when at work. Has good mixed hay, very dry. Sometimes runs at nose quite freely. He has been in this condition about six months. Please advise treatment.—E. W. D., Merced.

[Try the following for your heifer; one dram powdered iron sulphate, twice a day for two weeks. Give your horse 5 grains potassium bichromate in one ounce of water, three times a day.]

BRINGING BACK MILK FLOW.

To the Editor: I have a cow that was supposed to freshen about January 1. As she showed every indication of carrying a calf she was dried up about three weeks previous, but she has refused to make any bag, and it is quite evident that she was not pregnant, although careful watch has been kept for signs of becoming in heat since she went to the bull last March. Today she showed some inclination to be in heat. I have been told that by careful feeding her milk flow can be partially brought back as she was never completely dried up. Please advise whether this can be done and how before she freshens again.—C. A. B., Sacramento.

[Heavy feeding and thorough milking will partially bring back the flow, but it will not be as strong a flow as it was before you dried her up.]

COW HAS RHEUMATISM.

To the Editor: I have a cow that comes in heat at irregular intervals from ten to fifteen days. She gave birth to a healthy calf about six months ago, and is now in good condition and milking well. What can I do for her? I have another cow that is quite lame in one hind leg. When she walks it seems to fly out of place. As she walks it pops and seems to be quite painful to her. The trouble came on very gradually. What would you advise?—G. B., Tulare.

[Have the first cow's ovaries examined by a veterinarian. The other cow has rheumatism. Give one dram each in water of sodium salicylate and formalin twice a day.]

HORSE WITH BARBED WIRE CUT.

To the Editor: About three months ago one of my horses cut her foot on barbed wire, between the fetlock and the hoof. It healed up in six or seven weeks, except small hole, from which pus continued to run. Finally that closed up but it keeps breaking out in a new place near the crown of the hoof. She is too lame to work. What can be done for her?—J. L. G., Ripon.

[Inject tincture of iodine in the opening once a day. If this fails to heal up the opening properly, an operation will be necessary.]

PIGS HAVE ACUTE INDIGESTION.

To the Editor: I have a few sick pigs that at first carried their head on one side and a few weeks later began to stagger and walk in circles. When eating out of a trough they would fall over backwards, having difficulty in getting on their feet again. One of these pigs became paralyzed in hind quarters so I killed it. His stomach contained no food, only a yellowish green slime and the lining was covered with sores. His intestines were full of food. When drinking sour milk and swill pigs seemed to be very hungry, but could only drink slowly. Please advise disease and cure.—C. V. P., Wash Station, Sacramento county.

[This is acute indigestion, probably brought on by overfeeding. Prevention is the best remedy. Cut down their ration.]

COW GETS SICK AFTER FRESHENING.

To the Editor: I have a cow that was giving about three gallons of milk, up to the middle of January, when she took sick and refused to eat. I gave her one pint of Boiled Linseed Oil. This acted about three hours afterwards. She was then lying down and unable to get up. On striving to get up she passed blood with urine very thick. I gave her a dose of nitre, which seemed to do her good and in about three days she was able to eat her usual ration. Her milk flow dropped off about two quarts, but has since dropped to about a gallon. I fed her beet pulp, soaked, citron, and as much alfalfa hay as she would eat without wasting. This morning she refused her feed except citron. I gave her a bran mash and one-half pint of Linseed Oil and she now seems shivery and her urine is thick again. Any information will be thankfully received. —F. H. S., Fresno.

[Raw Linseed Oil is the proper oil to use for a purge. Boiled Linseed Oil kills animals in large doses and it is a wonder that your cow survived the treatment you gave her. Give two pounds Epsom Salts and discontinue the citron in the feed.]

SALVADOR STOCK FARM

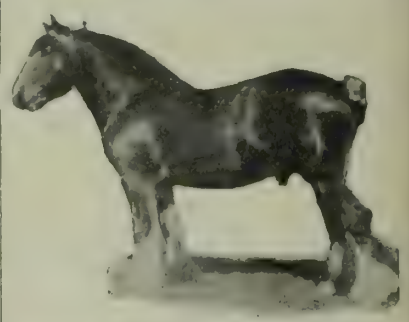


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Be Careful What You Sing When Milking.

To the Editor: I would like to know which brings the best results, fast or slow milking. For example, suppose I had two fresh cows, testing the same and giving the same number of pounds of milk daily and the same treatment is accorded both. A. milks one of them, being a very slow milker, using but one hand part of the time, and B., who is a fast milker, milks the other one. Which would secure the best results?—Subscriber, Glenn county.

[Answered by Prof. Gordon H. True, University Farm, Davis.]

[My notion on this matter as a result of experience in milking is that in so far as the motion of the milker is concerned it is necessary to milk some cows with a quicker movement than others, that the small teated cows would naturally be milked much faster than the cows with a large teat capacity, so to speak. I know that I have had to milk certain Jersey and Shorthorn cows in the same string and it was impossible for me to milk the latter as fast as I could milk the former. It used to be a saying of old Governor Hoard's in Wisconsin that it was all right for a man to sing while he milked keeping time to his music, as he naturally would, with the milking operation, but that in the milking of some cows you would have to sing Old Hundred and with others Yankee Doodle, but it would be important that a man should not make a mistake and sing Old Hundred to the Yankee Doodle cow and vice versa. This seems to me to express the idea that I have in mind pretty well.

Other things being equal, I think the milker who has sufficient strength to milk continuously without resting will get better results than the one who has to delay on account of weakness or lack of grip, and that the more nearly one is capable of taking the milk flow as fast as it comes, the better milker he is.]

No Citrons for Sows in Pig.

To the Editor: In your issue of February 5, I notice an inquiry from a Visalia subscriber in regard to piemelons for sows. I have had some experience with citrons or piemelons, fed to sows that were due to farrow in three or four weeks. I was then feeding about four or five citrons a day per head and every sow in that feed lot lost her pigs from one to two weeks before they were due. Some came dead and others alive. We were then feeding a liberal allowance of grain with the citrons.

I have fed citrons at other times when the sows were not so far along in pig with no unfavorable results. I have also heard of others who have suffered loss in the same way, so advise E. W. V. not to feed piemelons in large quantities to sows due to farrow in three or four weeks and to be on the safe side make it five weeks.

After the pigs arrive there is no danger that I know of, if fed with grain. I hope other readers will tell of their experiences with piemelons. —F. W. Barney, Hanford.

[In view of the large amount of citrons or piemelons that are grown in the various parts of the State there should be a great deal of information available regarding their value, etc., and we should be pleased to relate others' experience regarding their feeding value.—Editors.]

YOUNG SOW WON'T BREED.

To the Editor: I have a young registered Berkshire sow that won't take the boar. She comes in heat, but won't breed. She is about 16 months old. What can I do with her?—D. W. G., Colusa.

[Answered by Chas. Goodman, Williams.]

[This is not an uncommon occurrence with Berkshire sows and with other purebred hogs we suppose. It seldom happens among scrubs.

Mr. A. J. Lovejoy, a veteran Berkshire breeder, advised us to use a breeding crate. The process is what the darkey would call "being forced." As we have no breeding crate at hand we never tried it.

Dr. A. C. Rosenberger of the U. S. Dept. of Agr. examined a sow which we had been unable to breed and said that she had some disorder of the ovaries and would never breed. His statement proved true.

Last summer we had a gilt that was about in the condition of the one described above. We let Nature take its course and after a time everything came around all right and she is now due to farrow March 2.

If the sow is a very valuable one we would consult Dr. Neilson of Colusa or some other good veterinary surgeon. The difference in price between breeding and market hogs is so small that it would hardly be advisable to spend much money in treating an ordinary hog.

Dairymen around Elk Grove are agitating the organization of a cow-testing association.

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EACH year some 40,000 farmers, who have bought at one time or another "cheap" cream separators, discard their inferior, cream wasting machines and replace them with clean skimming De Lavals.

These men bought the "cheap" machines because they thought they were "good enough" or "just as good," and that by purchasing such machines they could save a little money. They actually would have been better off in most cases had they bought no separator; for they lost most of the money they spent for the "cheap" machines, besides all the cream these machines have failed to get out of the milk.

No one ever saved money using a "cheap" cream wasting separator or an old or half-worn-out machine. No one ever got back the money spent for such a machine by continuing to use it. Those who bought "cheap" machines and got out of the difficulty best are the ones who quickly discovered their mistake, discarded the inferior machines and put in real cream separtors—De Lavals.

There are nearly 2,000,000 farmers who have bought De Lavals, and every one of these had just as many opportunities to buy "cheap" separators as any one else. They did not do it and are now money ahead. They have avoided paying the high cost of experience, and their De Lavals have paid for themselves many times over. It always pays to buy a separator of proved, known superiority.

The nearest De Laval agent will be glad to let you see and try a De Laval on your own farm, without obligating you in any way. It is better to take advantage of this opportunity than to pay dearly for your own cream separator experience. If you don't know the local De Laval agent, simply address the nearest main office as given below.

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NATURAL INCUBATION.

[By Mrs. Susan Swaysgood, Pomona.]

There are a great many ways to set a hen and it sometimes happens that the hen will have none of them, but just suits herself. This is only excusable when the hen is on range and steals her nest, as sometimes happens, and she generally makes a fair job of it because she does it in her most natural way.

This is, of course, one way of natural incubation, but we really can't afford to use it because the hen may sit on one egg or a dozen and if left to spend three weeks of her time on one or two eggs we are the loser.

When a hen steals her nest she usually finds a nice, quiet place, away from other hens and secluded from observation from any and all things. And we can pretty well imitate her in this one thing, and that is about as far as it is wise to venture into the strictly natural method of incubation.

Making the Nest.—Find a quiet place, away from other fowls, and be sure dogs or cats can not bother her, then make your nest. If a hen has been used to laying in a box, give her a box somewhat similar in appearance for a nest and if she is accustomed to laying on the ground make her nest on the ground. It pays to humor a hen in these little things.

In the bottom of the nest, whether it is a box or an earthen nest, lay a good half of a gunny sack, well sprinkled with coal oil. This will protect the hens from mites, if there should be any in the buildings, then put soft straw or hay on top of the oily sack, filling up all corners to prevent eggs from rolling into them. In fact the nest should resemble a saucer in shape; the size being regulated by the size of the hen that is to occupy it for three weeks.

Don't lose sight of the latter item, for three weeks is a long time for a hen to set on a dirty, poorly made nest and sometimes, no matter how good a hen she is, it is not possible for her to stand three weeks of punishment, just to have a family. It nearly always turns out that the person who made the nest and set the hen is to blame for broken eggs and deserted nests.

After the nest is ready, put in a few decoy eggs for a start and after dark move your hen from her old nest to the new one. Dust her thoroughly before doing so, however, then put her where she can see the nest, and if she is a good hen and the nest is inviting she will take to it herself without compulsion.

Feed Well.—If she takes to her nest, shut her up so that nothing can disturb her and the next morning place food and water where she can see it. If she sets very quietly through the first and second days it will be safe to give her the eggs you want hatched. Always keep food and water where setting hens can see it for they usually get off the nest very early in the morning, and if food is not handy, either go back to the nest hungry or get away if possible to look for food, then fail to get back to their nest.

The hens should be well dusted at least three times before hatching, then there will be no fear that lice will attack the chicks.

At hatching time, if a hen gets very nervous, it is best to leave her to herself, allowing room for the chicks to get from under her and yet not get away to be chilled. A little close watching at this time is often better for chicks than too much meddling.

After the hatch is off, feed the hen generously; she has earned it and really needs it. It is a mistake to think hens do not need good feed at this time on the theory that they give no nourishment to the chicks. If you hold this belief just watch the chicks of a half-starved hen and those of a well-fed hen and see which lot grow the fastest, look the slickest and run the quickest. You will soon find that the well fed hen does really impart her vitality to the chicks.

MARKETING RANCH EGGS.

To the Editor: I have recently increased my flock of hens so they produce more eggs than I can sell hereabout and tried shipping to San Francisco. The grocer wrote he had to sell them as seconds because they had not been handled right, but he would pay top prices if we were more careful. Can you send me some instructions for handling eggs right?—Subscriber, Honcut.

[Answered by Geo. H. Croley.]

[This shipper has been careless in handling his eggs, but just how he is at fault we cannot guess. As this is the season when many farmers will try shipping eggs for the first time, the following which appeared in California Poultry Practice under the chapter entitled "The Care and Management of Eggs" should be helpful to such beginners:

"Market eggs should be gathered and cared for as faithfully as if for hatching. Cases with good clean fillers should be ready to receive the eggs as soon as gathered, and the cases should be stored in a room where the temperature can be kept at about 50 or 60 degrees. There should be no strong smell from vegetables, oils, or other matters, because eggs, like cream, absorb odors—through the shell. The egg fillers particularly should be above reproach, for if there is any broken egg on them, although to all appearances dry and inoffensive, there is danger. All such should be thrown out and clean fillers substituted. No matter how fresh the egg is that comes in contact with a dirty filler, it will soon be tainted. If the eggs are to be shipped to a distant market, no matter if but a few miles, they should be sorted to conform with the demands of the market. If there are both brown eggs and white, the brown eggs should be put in one side of the case and the white eggs in the other, a note on top of each side explaining how many of each. Grocers like this method because it saves them the extra trouble of sorting. If they have agreed to give you one price, it makes no difference. Make a statement of how many dozens of each—they will appreciate it. Also be sure that you send nothing but clean eggs to market. If you have pullet eggs, keep them separate and ship as pullet eggs; if you don't you may possibly lose a good buyer. These are busy men and have no time to spend explaining. Never, by any chance, leave eggs out in the sunshine. Incubation starts very easily in the sun and from then on decay is very rapid. If obliged to carry eggs during the hours of sunshine, a good layer of green grass laid over the case will keep the direct rays of the sun from striking them."]

POULTRY NEWS NOTES.

[By Geo. H. Croley.]

A recent arrival from Nebraska, Mr. E. F. Bailey, has purchased an improved five-acre poultry ranch at Petaluma.

At the meeting of the Petaluma Chamber of Commerce held Feb. 9 the executive committee discussed the matter of establishing an experimental station near Petaluma.

A site is being sought in Oakland on which to build a factory for canning chicken meat. It is claimed that both boiled and roast chicken can be placed on the market by the methods it is intended to adopt.

Judge W. S. Russell has returned to his former home in Iowa for the purpose of disposing of his property and settling up his affairs. In a short time he will return to California and actively take part in conducting the poultry colony adjoining the Oakland and Antioch Railway at Concord.

We have received a copy of California Poultry News, volume one, number one, published at Sacramento by C. A. Wilkins. The initial number is nicely printed on good paper. It is intended to champion the welfare of the fanciers of northern California by whom it will no doubt be appreciated and liberally supported.

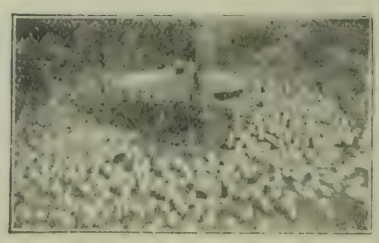


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POULTRY DEPARTMENT, HOPLAND, CALIF.
Best Equipped Poultry Farm in California. Sanitary conditions perfect.
EGGS FOR HATCHING AND BABY CHICKS.
Breeding Pens now mated with large-sized, healthy matured breeding birds. All open-air housed, thus promoting strong sturdy chicks.

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Hatching Eggs, $1.50 per setting	$5.00 per	100
Baby Chicks, February delivery	12.00 "	100
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WHITE PLYMOUTH ROCKS.		
Hatching Eggs, $2.00 per setting	$ 7.00 per	100
Baby Chicks, 20c each	15.00 "	100

In the Utility Class at the P. P. I. E. Poultry Show our Leghorns received 4 awards, and on Eggs 1st and 2nd.
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Simple and Safe Remedies.

[Wrtten for Pacific Rural Press by Geo. H. Croley.]

During the past two years the poultry keepers in several districts of California have suffered serious loss caused by intestinal worms in their fowls. The ordinary remedies, that in the past had been considered efficient, failed to eradicate the worms or materially reduce the number. Many newly suggested remedies also produced unsatisfactory results, but a safe and simple remedy has at last been discovered. It has been tried by several breeders, all of whom report favorably.

We believe the credit for this discovery is due to A. L. Roddick of Soledad. His original report follows:

"I have found gasoline to be the best remedy for worms in poultry—the only medicine that brought them quickly and dead. I had tried powdered pomegranate root bark, copperas, cresoline in water, onions, garlic, pumpkin seeds, and a proprietary remedy; most of them brought a few live worms but not many.

The dose is one teaspoonful of gasoline to each grown fowl. If given direct, dilute it with milk or sweet oil. I gave it in a moist mash, feeding less mash than usual, and I added some fresh chopped meat so they would eat it up quickly because the gasoline evaporates in a short time. I have also put the gasoline on their wheat.

"This remedy did not reduce the egg production and we lost no fowls through the treatment. All effects seemed to be good ones.

"We found our flock infected with three varieties of worms: the tape, long round, and pin worms, but it seemed to get them all.

"I had 600 pullets about six months old that while they were not sick, they were very poorly developed and were small in comb. They were laying only 3 or 4 eggs a day. A month later, after several doses of gasoline, one would not think them the same pullets. I found that a hen may have a good many worms and still be fat, but she will not lay well. I am moving my hens to new, clean ground and by cropping the old runs for a year or two I hope to eradicate the worm eggs from the soil."

This being such a simple and inexpensive remedy, we recommend that all poultry keepers give their fowls at least one treatment. Some intestinal worms are present in nearly all flocks, but when the conditions are not favorable for them they do not increase rapidly and no very great loss results. It is well to constantly use preventive measures and thus escape a serious loss which is certain to result if they multiply. As the drinking water is the chief medium for spreading the trouble, the vessels should be arranged to prevent the fowls from putting their feet on the edge of the drinking vessels. In the chapter devoted to poultry diseases and their remedies that appears in California Poultry Practice, the following preventive of worms is recommended: "Feed a little wood ashes in the mash feed and give a dose of Epsom salts twice a month."

In building an incubator cellar be sure to have windows on all four sides.

SELLING BABY CHICKS.

To the Editor: I find it very unsatisfactory and profitless to hatch and try to sell baby chicks of good quality while other parties a few miles distant are seemingly reaping a harvest of money by supplying, at half my price, chicks from flocks that are not carefully mated; just a common run of Standard bred fowls that look good, but have never been trapnested or tested by any other system. My fowls may not be superior to those of my competitor in blood or strain, but they are the selected few that rate high for breeding as proven by the trapnest as well as the Hogan method. Anyone who has bred up a high producing strain knows how expensive it is. It costs fully double to produce chicks from such stock and unless a reasonable number can be sold without great additional cost for advertising, it is a losing business. I dislike to sell chicks that I know cannot bring success to the purchaser, but it seems that I must either do that or give up my chick selling enterprise. Can you suggest some remedy for this condition?—Discouraged Hatcher.

[This discouraged breeder is passing through an experience that is common to all conscientious producers. His time and energy have been consumed in creating something superior and he has not yet discovered how to secure the reward that the public is ready and willing to bestow on him. Do the people who buy the half-priced chicks know that our correspondent can sell them something for only double the price that may be worth as much as ten times the value of the "cheap chicks"?

As his communication indicates that business is unprofitable and money scarce, we suggest that he place a neat sign at his gate that reads as follows:

FOR SALE
Baby Chicks
At double ordinary price
We use the Hogan system.
Step in and let us explain.

This will tend to save much time because those who seek low prces will pass on while the prospective buyer who is aiming at ultimate success rather than a penny-wise first saving will be interested. If this plan brings satisfaction and profitable results we suggest that a more extended trade might be established through a similarly flavored advertisement in the Pacific Rural Press.]

POULTRY NEWS NOTES.

Owing to the rapidly growing business of the Tulare Co-operative Poultry Association, it is necessary to seek new quarters. The business for January was greater than any previous January; the business totaling $3861.22.

At a recent meeting of the Petaluma city council a resolution was passed pledging support and co-operation with the city officials in an effort to stop the stealing of poultry in that section of the State.

The Federal and local authorities in San Francisco have notified all egg dealers and handlers that anyone caught selling eggs to be used for food purposes in any form that have been tested out of incubators will be prosecuted. A recent decision relating to the pure food law prohibits the use of such eggs for human food.

A general business meeting of the Stanislaus County Poultry Association was held in the Board of Trade rooms on Feb. 11. A strong effort is to be made to secure the next annual show of the State Poultry Association.

Poultry Breeders Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

GET YOUR DAY-OLD CHIX FROM ACTUAL PRODUCERS, who know what they have and who can stand back of their chicks. We are utility poultry raisers and our White Leghorn chicks this year are from pen of 635 that averaged 171.2 eggs each last year. Our Rhode Island Reds are also heavy winter producers. Owing to superior transportation facilities in Sacramento, quick delivery is assured. White Leghorn chicks, $12.50 per 100; Rhode Island Reds, $15 per 100. Book at once. Brooke Farm, 807 J St., Sacramento.

LIVABLE BABY CHICKS—We are supplied by reliable Breeders and experienced hatchers. Better chicks cannot be had from any source. All varieties, any number. High quality birds, bargain prices, breeders, laying hens, pullets. Free exhibit. Everything in Poultry, Pigeons, Rabbits, Dogs, Cats, Canaries, Pets. Give us a call or write. Fanciers' Exchange, 642 S. Main St., Los Angeles, Cal.

ALL KINDS OF BREEDING and laying hens, roosters and pullets. Petaluma incubators, new annd used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minorcas, Buff, White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards. 2550 San Pablo Ave., Oakland, Cal. Closed Sundays.

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired Heavy Winter Layers. W. C. Smith, Prop., Corning, Cal.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. Lay most when prices highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for heavy laying. Eggs, chicks, stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

WELL HATCHED AND STRONG day-old chicks from healthy vigorous breeders. White and Brown Leghorns per 100 February, $11, March $10, April $9. Reduction in quantities. Let us send you our announcement. San Jose Hatchery, 373 Meridian Road, San Jose, Cal. Chicks well hatched are half-raised.

WHITE PLUMAGE POULTRY FARM and Hatchery. Sells day-old chicks from healthy, vigorous breeders. White Leghorns at $10 per 100, $90 per 1000. Barred Rocks and Rhode Island Reds at $15 per 100. We sell the Victor Incubator and Brooder. Circulars free. H. A. Schlotthauer, Exeter, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396, Los Gatos, Cal.

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BABY CHICKS—All sturdy youngsters from good stock and hatched right. Rhode Island Reds. Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

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THE SANTA CLARA VALLEY HATCHERY has the goods to offer in 9 varieties of baby chicks and will book orders for Ducklings—White Pekins and Indian Runners Route 6, San Jose, Cal.

POULTRY PAPER—44-124 page periodical, up to date; tells all you want to know about care and management of poultry, for pleasure or profit; four months for 10 cents. Poultry Advocate, Dept. 239, Syracuse, N. Y.

BLACK MINORCAS—Pure blood, prolific-laying strain. Guaranteed first class. 20 years' experience raising Minorcas. Chicks, $12. Eggs, $6 per hundred. E. Mosher, Napa, Cal.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

FOR SALE—Barred Rock eggs from fine large prize-strain. Extra fine layers. $1.50 per 15; $7.50 per 100. Miss F. W. Buckley, R. F. D., Box 71, West Berkeley.

BABY CHICKS AND EGGS—Hoganized Black Minorca, White Leghorn stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

HATCHING EGGS from Hoganized S. C. White Leghorns. Bred to lay. High fertility this year. Send for circular. R. H. Dickinson, Los Gatos, Cal.

S. C. W. LEGHORN EGGS for hatching from selected, strong and vigorous hens. All 200 egg type. 15, $1.50; 100, $6. Jay Maxwell, Madera, Cal.

WHITE ORPINGTONS AND GUTTERCUPS—Hoganized and Tested—220 egg strain breeders. Chicks and eggs for sale. M. S. Woodhams, San Mateo, Cal.

BABY CHICKS from Hoganized Single-Comb White Leghorns, 4th and 5th awards at P. P. I. E. for 280 egg type. Tupman Poultry Farm, Ceres.

BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trapnested stock. Fairmead Poultry Farm, Fairmead, Cal.

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ORPINGTONS BUFF AND WHITE—Black Minorcas and Carneaux pigeons. Cockerels ready for service. Susan Swaysgood, Route 2, Pomona, Cal.

WHITE WYANDOTTES—Blue ribbon winners. Cockerels, Pens, Eggs. Runner Ducks, $1 each. R. W. Stawetski, Route 2, San Jose, Cal.

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EAST SACRAMENTO HATCHERY—Capacity 16 000. Special low price for large lots of chicks. Box 1208, M St. Road, Sacramento, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

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SPECIAL—Barred Rock and Rhode Island Red chicks, $12.50 per 100. Safe arrival guaranteed. G. L. Hawley, Madera, Cal.

TAYLOR'S RHODE ISLAND REDS—First pen San Jose, first pen Sacramento. Eggs and chicks. 4001 York Ave., Sacramento.

TRAPNESTED LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

RHODE ISLAND RED BABY CHICKS and Eggs. Heavy laying strain. Send for circular. Rosedale Ranch, R. 1, Hayward, Cal.

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S. C. RHODE ISLAND REDS—Hatching eggs. Baby chicks and cockerels. Mrs. V. P. Hewitt, Dixon, Cal.

SINGLE-COMB RHODE ISLAND RED—Eggs for hatching from good-laying strain. Wm. Swegles, Modesto, Cal.

BUFF ORPINGTONS—Eggs, $3, $2. Runner Ducks, $1.50. Glendale, Fleming Ave., San Jose, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

BLACK MINORCA COCKERELS — Eggs, Trios. Reasonable. Chester Fosgate, Campbell, Cal.

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LEADING RABBITRY IN AMERICA—Flemish Giants and New Zealands. Cut your living expenses. Catalogue free. Empire Rabbitry, Empire, Cal.

BELGIAN HARES—Young stock for sale. Hurd Bros., St. Helena, Cal.

TURKEYS, DUCKS AND GEESE

RED BOURBON TURKEYS—Eggs $5 per setting (thirteen eggs). My Turkeys won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914. Just as good this year. A. E. Balmer, Alhambra Valley, Martinez, Cal.

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HART'S BRONZE TURKEYS — Vigorous young stock. Eggs by the setting or incubator lots. Circulars free. Albert M. Hart, Clements, Cal.

FOR SALE—17 young thoroughbred bronze turkey hens, $3 each, or $47 for the lot. C. W. Chambers, Willows, Cal.

FOR SALE—One pen of China Pheasants, one male and five females. L. R. McCoy, R. I. Box 205, Stockton, Cal.

PHEASANTS—Golden and Ringneck. Eggs from April on. T. D. Morris, Agua Caliente, Cal.

MAMMOTH BRONZE TURKEY EGGS from selected stock. Also young Toms. M. M. Reiman, Planada, Cal.

FOR SALE—Thoroughbred Rouen Duck Eggs, $1.50 per dozen. Mrs. Emma V. Miller, Farmington, Cal.

MAMMOTH BRONZE TURKEYS—Breeding stock. L. Riedel, Patterson, Cal.

The Home Circle Page of the Pacific Rural Press

MRS. BEST'S BULLETIN.

My dear Friends: Years ago women had only two costumes, kitchen and go-to-meeting. Today there is a different costume for every conceivable activity of women, and that has come to cover a mighty wide range of activity. Not only are there costumes for every occupation, as well as every season, but there are costumes for every hour, every room in the house, every mood almost. Now comes the sport suit, so-called, which, for a change, can take the place of a number of other suits and is the little sister of an extensive wardrobe. It is a very good every-day proposition, the sport suit, and it serves well in place of anything you happen not to feel like wearing at the time.

And you can take all sorts of exercise in it, from putting up dumb bells to putting up preserves; from running up a hill or to running up a bill at the store.

Some flannel sport suits are appearing, in grays and check effects. I think they will be liked.

Sport hats of fine braided straw, light and flexible, are to be found at $2.50. These are in half-natural color and solid shades, either the brim or under brim being colored. If the crown is colored the hatband is white; if the under brim is colored the hatband is to match.

Sport belts of white kid with ribbon stripes or bars of solid colors have arrived at 50 cents.

Saw a nifty blue taffeta silk dress of latest cut that was set off with a swagger blue velvet jacket or short coat tried on over it.

"Banjo stripe" tailor material is shown for suits. It is in dull blues or black grays, finished worsteds, with black, gray or sometimes green stripes. Similar stripe material happens also to be the spring fashion for men's suits.

Became convinced of a stunning effect in footgear by seeing it in use. It was a combination of patent leather boots with high wash leather or chamois spats. The wearer looked nifty.

The very high toque trimming (speaking of headgear now) hasn't arrived on the coast yet, or is hard to find. It is probably a bit too early. It'll be here.

The latest bid for novelty is a skating corset. In this the hips are cut away more, but as in any figure corset come down pretty low.

However, I believe skating will be about over soon. So I will stop right here and perhaps find something of more interest than that to chat about next time. Devotedly,

Rosabella Best.

(Note—Readers wishing information from Mrs Best, care of the Rural Press, will receive a reply if they enclose a stamped addressed envelope.)

SPIDERWEB EMBROIDERY.

There is something bewitching about spiderweb embroidery. The use of the web is particularly clever as a background for embroidered floral designs in bright colors; or dragonflies, or butterflies, or appropriately a spider. Any color is suitable for the web. One suggestion is for a Delft blue in varying shades, the lightest being used for the web.

PARKER HOUSE ROLLS.

(This Week's Preferred Recipe.)

Rub two tablesp. butter into one quart of flour and two tablesp. sugar; dissolve half a cake of compressed yeast in one pint of warm milk and when bubbles begin rising mix with the foregoing and set it aside to rise over night. Then in the morning stir in enough flour to let it knead without sticking and put it back in the dish to rise again. When it is light make it into rolls and let them rise again in a moderately warm place until evening when they should be light enough to bake in a quick oven. Brushing them with milk just before baking gives them a fine color. To shape parker house rolls, make a little ball of dough, then squeeze down across the middle of it with a piece of broom handle, and fold over.

THE ACACIA.

By Sunbonnet Sue.

The rich olive green of the acacia is a benediction to my eyes.

I call it the blessed tree, the acacia. It is full of the spiritual, and its life a round of good favor. It has the poise of perfection.

It has the vitality of honor in a place where it may live. It flourishes and is grateful to its environment. But in a landscape or a clime that is harsh it has no being.

With a subtle dignity it seeks a clime that is gentle and a scene that is a scene of beauty. It crowns the landscape with its perfection.

It is true, the acacia, and does not mope in the winter. On the contrary it bursts forth into vigor that is inspiring. It scents the days of dullness with its blossoms.

Amid the rains it laughs and tosses its arms laden with an incense of golden flowering.

It is my cheer in the days that are gray and a cool consolation in the brightest of sunlight.

It is clean and immune. The pests of the woodland respect it. The acacia is wholesome.

I am at peace with an acacia by my door.

BABY WEEK.

Another observance week has been "wished" on the land, and this time it is March 1-7 inclusive, and is spoken of as Baby Week. It is much different from Mothers' Day, since it has much more than a sentimental purpose, being in fact almost wholly practical. Another interesting feature of it is that the United States government is back of it—at any rate semi-officially; and it is by the Department of Labor that the observance is sponsored.

The plan is that during this week special attention should be given everywhere to the study and discussion of plans for the betterment of baby-life in town and country; in fact it is for the doing and planning of everything that will make better, brighter and more brawny babies.

EXPERIENCE EXCHANGE.

Miss Myrtle J., Selma: In your bedroom you might use chintz draperies and simple cottage furniture in a neutral shade of greenish gray, but the bed should match the other furniture. Glass covers for the tops of the tables and dresser are correct, and lace covers or chintz to match the draperies are placed under the glass.

Mrs. A. L. C., Santa Ana: A good dough for strawberry shortcake is made with 1 cup flour, two tablesp. butter, 1-3 cup milk, 2 teasp. baking powder, a little salt, and 1 teasp. sugar. This should be rolled out 1 inch thick and baked in an oven not too hot.

That old poem, very popular among sentimental ladies of the '70's, "The Gipsy's Warning," for which a reader asked a short time ago, is printed today on the opposite page. We do not know the name of the author.

SKIM MILK CHAMPIONED.

The general impression seems to be that skim milk is of faint value as food. The idea is that it has been skimmed of that which renders it of use. It is spoken of in terms of contempt. There is a prejudice against it that is laughably inconsistent with its employment for feeding livestock. The man who gives it to his hog with traditionally good results very often is the first to hoot at the suggestion that it is of any use as a human diet. As if a hog or calf could thrive on something that was not real food.

The Department of Agriculture is patiently trying to convince the thoughtless public that skim milk is real food. In skim milk is left all the sugar, and all the protein. It is as nourishing in a way as beef, and at the usual prices about twice as economical.

THE OLD MAN ON THE CRACKER BOX SAYS:

By Fred Schaefer.

A look of innocence is what a man wears when he comes home with cloves on his breath.

Some men's acquaintanceship isn't cultivated long before you strike plow sole.

The swiftest way to have the subject changed to crops or the weather is to mention any of your misfortunes.

In a general way we think of cooks as despotic, but as a matter of fact they are Too Easy.

What has become of the old-time clerks who were drilled in the truth instead of salesmanship?

Nobody is neutral about the rain; one is either for or "agin" it.

A pretty woman and a homely man are equally proud of the fact.

The more you rob the soil, the more it robs you.

In the meantime this thing of preparedness is an old story to the man with a lemon grove and plenty of fire pots.

Agents have no trouble selling anything to the lady of the house if they start telling about something that happened at home.

THE PNEUMONIA SCARE.

That title is a bit misleading—there isn't exactly a scare, but there is a most broad discussion of this treacherous disease, combined with an agitation for better prevention. As anyone must know who has done a good deal of general reading of newspapers and periodicals, there have been an unusual number of articles this winter devoted to the peculiarities of pneumonia and the best ways of combating it. Since the rigors of colder parts of the country are not the exclusive promoters of the disease, advice concerning it is just as good here.

The main reason for the awakening to pneumonia is that it is statistically responsible for more deaths than any other natural cause in the United States.

The article in a recent Home Circle page of the Pacific Rural Press, which was headed "Recuperation," dealt most pertinently with the best way of avoiding this scourge, although pneumonia was not specifically mentioned. Pneumonia is a disease that attacks a system which has suffered exposure and which has not had a chance normally to recover from it.

By the way, a "cold" is the advance agent of pneumonia. In every case where pneumonia develops, chill and fever is the first symptom; although everyone who has a cold does not have pneumonia. The thing to do is to take care at once of the cold. And the best thing is to avoid having a cold by breathing plenty of fresh air, taking exercise, and keeping the body and feet comfortable.

Generally speaking pneumonia is a "cold" that affects the delicate lining of the lung, much as the throat passage is affected by throat colds, the result being that the swollen, infected lung surface cannot perform its functions, and the patient practically smothers. This explains the rapid, labored breathing during the illness, the least affected part of the lungs having to do double duty.

It should also be remembered that pneumonia is contagious. Where there is a pneumonia patient the same precautions should be taken as with a tuberculosis patient. Pneumonia is transferred by germs exhaled or discharged by the sufferer, and anyone near by who is not in the best of physical condition will take the disease very easily.

THIS WEEK'S BEST HOUSEHOLD HELP.

To get a high finish on starched linen—Starch the linen twice before ironing; that is, starch, let it dry, then starch again. Then iron once and let dry, then dampen slightly with a wet sponge and iron again.

BILLIARD GREEN LIKED.

With vivid colors in favor, billiard green is among those put forward most persistently. Sport costumes of solid billiard green are already on the market. It is also being used in costumes for little girls, and is usually fur-trimmed.

THE GIPSY'S WARNING.

Trust him not, O gentle lady,
Though his voice be low and sweet;
Heed him not who kneels before thee,
Softly pleading at thy feet;
Now thy life is in its morning,
Cloud not this, thy happy lot,
Listen to the gipsy's warning—
Gentle lady, trust him not!

Lady, once there lived a maiden,
Young and pure, and like thee, fair;
Yet he wooed, he wooed and won her,
Thrilled her gentle heart with care.
Then—he heeded not her weeping—
He cared not her life to save!
Soon she perished— now she's sleeping
In the cold and silent grave!

Lady, turn not from me coldly,
For I have only told the truth—
From a stern and withering sorrow,
Lady, I would shield thy youth;
I would shield thee from all danger,
Shield thee from the tempter's snare—
Lady, shun the dark-eyed stranger—
I have warned thee. now beware!

Take your gold—I do not want it;
Lady, I have prayed for this—
For the hour that I might foil him,
And rob him of expected bliss;
Aye, I see you're filled with wonder,
At my looks so fierce and wild—
Lady, in the churchyard yonder
Sleeps the gipsy's only child!

BUILDER, SPARE THAT ATTIC!

Not everybody can have ancestors, portraits, family skeletons and the other things that go with lineage, but everybody can have an attic if they will make a stand for it and not allow a mere style in houses to deprive them of their rights. An attic is the nearest substitute for a family tree that has been discovered. It takes only a few generations to furnish it with mementoes that constitute a complete genealogical history of the occupants of the house. And these are the things—like portraits and skeletons—that go to preserve family pride.

No man can go into the attic and see the first copper-toed boots he wore as a boy hanging to the rafters without feeling some sort of a stir within him. He cannot see the remains of his grandmother's hoopskirts without feeling somehow that there's a connecting link between him and the history of his country. As for the padded silk brocaded vest his grandfather wore on his wedding day it is a patent of respectability equal to a suit of armor—besides looking a good deal like one.

Happy the family that has such an attic! Happy the family that has lived in a house long enough to see it properly furnished! There will be Johnny's initials carved by himself the day he was exiled for remarks at table. (It was Sunday and the minister had come to dinner.) There will be the dress Susie wore to her first party. There will be relics of all the styles of furniture that have come and gone since the family moved in with their horsehair stuffed chairs. There will be a complete history of the chromo age of art tacked on the walls. Captain Cuttle with his hook and glazed hat. Ichabod Crane, Tam O'Shanter beating the witches across the bridge. Napoleon at St. Helena. Execution of Charles I. There will be books, too, banished from the showy shelves downstairs for the offense of being ragged and in no condition to be seen by company. "Treasure Island." "Charles O'Malley." "Oliver Twist." "Midshipman Easy." "Foul Play." Westward Ho." 'The Cloister and the Hearth." "Handy Andy." "Mysterious Island." There will be the wreckage of all the Christmases since Johnny got his first skates. The chafing dish that didn't work. The cuckoo clock that blew up. The plaster Diana who fell off the piano and lost a leg. Father's mustache coffee cup.

And in pitiful ignorance of the far-reaching and fundamental significance of it all, builders are now boldly advertising as a point of merit houses with "finished" attics!—Kansas City Star.

THE FAIRIES OF ST. DAVID.

A long time ago, Elidorus, a boy 12 years of age, was punished by his schoolmaster, and he ran away and hid in a cave by the river, and there he remained without food for two days. Two wee men then appeared and said:

"Follow us and we will take you to the land of Delight."

And Elidorus followed them through a dark passage down the earth, out into a rich beautiful country. But there was no sun or moon or star there, only a strange twilight falling from a strange sky. The two wee men led Elidorus to their king, and the king made Elidorus the companion to his eldest son. And the people of the Twilight Land were very small, but they were very handsome, and they had long golden hair that fell over their shoulders. The King of Twilight Land allowed Elidorus to go back through the dark passage and visit his mother, and one day Elidorus was telling her what a rich country he lived in, and she bade him bring her some of its treasures.

So the next time Elidorus played with the son of the king he stole a golden ball and ran with it to his mother's house. The two wee men, however, pursued him, and they tripped him up just as he got indoors, seized the golden ball from his hand, and departed.

Elidorus was very sorry he had stolen the golden ball, and he wanted to beg the king's pardon, but the passage in the cave by the river side was closed and was never opened again to Elidorus.

Dad's Eccentricity.—Father will carry an armful of packages two miles for the good-looking wife of a neighbor, but mother says if she wants him to bring in one scuttle full of coal he raises all sorts of a racket.—Macon Telegraph.

His Turn Now.—"Are you going to have another garden this year, Mr. Smith?" "No, I ain't!" snapped Mr. Smith. "It ain't my turn. My neighbors are going to have the garden, and I am going to keep chickens."

Double-barrelled Invitation.—Little Bobby wanted a birthday party, to which his mother consented, provided he ask his little friend, Peter. The boys had had trouble, but, rather than not have a party, Bobby promised his mother to invite Peter. On the evening of the party when all the small guests had arrived except Peter, the mother became suspicious and sought her son.

"Bobby," she said, "did you invite Peter to your party to-night?"

"Of course I did, Mother."

"And did he say he would come?"

"No," explained Bobby, "I invited him to come all right, but I dared him, too."



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FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS.

San Francisco, Feb. 23, 1916.

WHEAT.

Lack of ships to handle export business is causing an easy feeling in the East, and the local market is quiet and easy in sympathy, though there is little actual change in quotations. California club is quoted a little lower, but the northern grain is about as before.

Cal. Club, ctl.	$1.75 @1.80
Northern Bluestem	1.97½ @2.02½
Northern Club	1.85 @1.87½
Northern Red	1.85 @2.05

BARLEY.

While a good deal of barley has gone East by rail, shipping facilities are poor and the stock is moving off slowly. There is also a disposition to sell on the speculative market, which has reacted on the spot situation, and values are easier.

Shipping, ctl.	$1.40 @1.42½
Choice Feed, ctl.	132½ @1.35

OATS.

The local demand for feeding is not very heavy, and with plenty of stock for all requirements values hold steady.

Red Feed	$1.35 @1.37½
Red Seed	1.45 @1.65
White	1.50 @1.55

CORN.

Eastern yellow holds steady, with the usual moderate demand here, and little local stock is appearing. The sorghum grains are in fair demand at the old prices.

Eastern yellow, ctl.	$1.80 @1.85
Milo Maize	1.40 @1.45
Kaffir	1.65 @1.70
Egyptian	1.50 @1.55

BEANS.

The downward movement in beans has not yet ended, apparently, declines having occurred in the last week on bayos, blackeyes and limas. The decline, however, has been very gradual, and it is hoped that the demand will pick up before it goes much further. The movement for the last two months has been a little disappointing, leaving a fair supply on hand for this time of year, and a good many holders have become anxious to sell; while the apparent easing of prices seems more likely to encourage buyers in their attitude of holding off.

(On wharf, San Francisco.)

Bayos, per ctl.	$4.70 @4.80
Blackeyes	3.40 @3.50
Cranberry Beans	4.75 @4.85
Horse Beans	3.25 @3.50
Small Whites (south)	5.50 @5.60
Large Whites	5.75 @5.90
Pinks	4.30 @4.40
Limas (south)	4.40 @4.50
Red Kidney	6.50 @6.75
Mexican Reds	4.50 @4.65
Tepary Beans	4.00

SEEDS.

The general line of garden seeds is a strong feature now; but of the lines quoted alfalfa is the only one attracting much attention. This line is moving well at the old figures.

Alfalfa, per lb.	19 @20 c
Melilotus Alba	6 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	4¼ @ 4½c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Sudan Grass	40 c

HAY.

No. 1 Wheat	$13.00 @16.50
No. 2	12.00 @14.50
Tame Oats	12.00 @18.00
Wild Oats	12.00 @14.00
Alfalfa	15.00 @18.00
Stock Hay	10.00 @12.00
Straw, per bale	.25 @ .40

FEEDSTUFFS.

Prices for feedstuffs are unchanged, but quite firm, with a lively demand for all lines. Some Oriental middlings are arriving, but not enough to affect the market.

(Wholesale prices per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$22.50 @23.00
Alfalfa Meal, per ton	20.00 @21.00
Alfalfa Molasses Meal per ton	21.00 @22.00
Bran, per ton	26.50 @27.50
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00 @25.00
Cracked Corn	39.50 @40.50
Middlings	33.00 @34.00
Rolled Barley	29.00 @30.00
Tankage	45.00
Rolled Oats	29.50 @31.00

RICE.

A few good sized sales to mills have been made in the last few weeks, and the market on both rough and finished shows a better tone. The recent demand has been mostly for medium and low grades, but more call for high grades is expected soon. The various mills have so far been well supplied, but will soon be in the market, and lower prices would not hasten the movement.

VEGETABLES.

The feature this week is the increasing offerings of asparagus, the crop of which will be in full swing with another week of warm weather, and an unusually large shipping business is expected. The stock thus far has been very good, and moves well at declining prices. In other lines business shows more life, but most lines are still rather scarce, and some are coming from distant points. There are hardly any peas. Celery, artichokes, and sprouts are somewhat lower on larger arrivals.

Cabbage, ctl.	50 @60 c
Cauliflower, doz.	50 @75 c
Sprouts, lb.	5 @ 6 c
String Beans	10 @15 c
Peppers, bell, lb.	15 @25 c
Rhubarb, box	1.00 @2.00
Peas, southern, lb.	10 @12 c
Tomatoes, L. A., crate	1.75 @2.00
Eggplant, lb	20 @25 c
Celery, crate	3.00 @3.50
Artichokes, doz.	50 @80 c
Lettuce, small, crate	1.00 @1.50
Asparagus lb.	12½ @25c

POTATOES AND ONIONS.

Oregon and Salinas are a little higher. Delta stock is unchanged, but the crop is getting pretty well cleaned up, with the exception of one large lot now being dug. Delta onions will all be sold from storage in a couple of weeks, after which an advance is expected.

(On Wharf.)

Oregon Burbanks	$1.60 @2.05
Salinas Burbanks	2.10 @2.25
Delta Burbanks	1.10 @1.65
Sweet Potatoes, ctl.	2.25 @2.50
Onions, Delta, ctl.	1.85 @2.25
Oregon	2.00 @2.50
River Bermudas, crate	2.00 @2.15
Garlic, per lb.	10 @12½c

POULTRY.

Turkeys are neglected now, and live birds are lower. Chickens also have been rather quiet the last few days, and while broilers have been scarce, in some cases bringing a premium, other lines show no great strength.

Turkeys, dressed	25 @27c
Live Turkeys, lb.	19 @21c
Broilers, 15 lbs. to doz. and less, lb.	38 @40c
do, over 15 lbs. to doz.	30 @35c
Fryers	24 @26c
Hens, extra, per lb.	17 @18c
Small	17 @18c
Smooth Young Roosters, per lb.	20 @21c
Squabs, per doz.	2.00 @4.00
Geese, per pair	2.25 @3.00
Ducks, young, lb.	18 @19c
Old	14 @15c
Belgian Hares	9 @11c

BUTTER.

There is very little feature to the market, extras having been unchanged for two weeks, with supply and demand about even. Lower grades, however, are cleaning up well, and show a slight advance.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32	32	32	32	—	32
Prime Firsts	30½	30½	30½	31	—	31
Firsts	29	29	29	29	-	30

EGGS.

There have been a few orders from outside markets until recently, but now the outside demand is about over, and with liberal supplies arriving over the holiday another drop is noted.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	21½	22	22	22½	—	20½
Sel. Pullets	19	19¼	20	20	—	19

CHEESE.

All prices stand as last quoted, arrivals being rather light in all lines, though there is not enough demand to warrant a further advance.

Y. A.'s, fancy	18 c
Fancy Calif. flats, per lb.	17½c
Monterey Cheese	18 @19c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	32	32	32	32	32	32
Eggs	20	19	19	19	19	19

DECIDUOUS FRUITS.

Stocks of apples in storage on the Coast are lighter than usual at this season, but there is still a very fair stock, and holdings in the East are very large. The movement for the last week has been very slow, both locally and for shipment, and the market is rather easy than otherwise.

Apples:

Pearmain	.85 @1.25
Baldwin	.75 @1.25
Oregon Spitzenbergs	1.50 @2.50
Jonathan	1.25 @1.75

DRIED FRUITS.

The continued apathy of buyers in consuming markets has caused a further marking-down of prices at this end, the decline being also attributed by some packers to difficulty of getting adequate facilities for shipment, either to Eastern markets or to Europe. The drop in prunes is rather surprising, and it is not at all certain that it is waranted by actual conditions, though the statement is made in some quarters that the amount of stock still on hand offers little promise of better values. The Eastern market, however, is stiffening up again after a period of easiness, and there is a steady and rather large shipping movement from New York to Europe in several lines, prunes being the most important. With a long period to elapse before new stock comes in, there should be no difficulty in cleaning up all that remains, and at better prices than are now offered. Peaches have received no attention for some time, and this line also has dropped; but with most other lines well off the market, it should be possible to get better values before the new crop is ready. Raisins are in active demand, and the outlook is very encouraging for the coming season. The New York Journal of Commerce says:

"California 1915 crop prunes for February or March shipment from the Coast are firmer than they have been for several weeks. Prices are inclined to return to the level which has been held by the principal packers and the general feeling is stronger, forecasting an advance in prices within a short time.

"Buying interest in prunes is very quiet, no one seeming to be anxious to secure more than very small stocks. Medium sized prunes on the Coast are said to be growing scarce in many quarters and prices are relatively stronger on those sizes.

"California raisins are very firm on spot, with stocks available only in fair supply. Coast operators report that prices are strong in California, with a good foreign inquiry. Shipments from New York continue to be made in heavy quantity. Shipments for the final two days last week totaled 425,000 pounds, England being by far the largest buyer."

Apples	6 @6½c
Apricots, per lb.	9 @12 c
Figs, white	4 @4½c
Black	2 @2½c
Calimyrna	6 @7 c
Prunes, 4-size basis	4¼ @5 c
Peaches	3¾ @4 c
Pears	4 @7 c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6¾c
London Layers, 3-crown, 20-lb. box	1.25
Imperial Clusters, 6-crown, 20-lb. box	2.50
Bulk, layers, 50-lb. box	2.75

CITRUS FRUITS.

The eastern fruit auctions show lower prices paid for oranges, owing to heavy receipts, but as shipments from California have been held up for the past ten days the market will soon right itself and good average prices are expected.

At New York on Monday, Feb. 21st, oranges averaged on auction from $1.45 up to $2.80 per box, and lemons sold for $2.15 up to $2.55. At Chicago the same day oranges averaged from $2 to $3 per box. Lemons averaged from $3.50 to $3.75.

Total shipments of oranges from southern California up to Feb. 21st, were 6,788 cars, as against 5,895 to same date last season.

San Francisco business has been less active for the last few days.

HAY BEING SHIPPED TO THE ALLIES.

The hay market is exceedingly firm, local prices having been marked up again this week. This condition is due in part to the recent sale of 2,000 tons of wheat and oat hay, and a similar quantity of alfalfa, for shipment to Europe, and in part to a car shortage, which has made it impossible to bring in the usual amounts from storage points; as well as to the continued heavy demand for feed in nearly all parts of the Coast. The hay for Europe is going by Galveston, being put up in double-compressed bales. The market has been greatly relieved by heavy export shipments throughout the season, as well as by a larger home demand than was expected, and all offerings are expected to clean up by the time new hay arrives, stocks of alfalfa being already about cleaned out. The outlook, however, is for a large crop, and a good deal of grain land will probably go for hay.

Special Live Stock Market Report.

The only material change in the local beef market is the growing demand for lightweight cattle and this demand continues to grow stronger all the time, with only slight response from the country. Heavy cattle remain unchanged as last quoted.

Sheep and lambs have been scarce and it is thought will bring a higher price. There have been a few ewes on the market, but the wether situation remains the same. Practically all arrivals are from Nevada or further eastern points. No spring lambs are looked for before the middle of March.

Hogs are not offered very freely in California and the market here is strong at an eight cent top with prospects of a still higher market next week. California has been furnishing all of the hogs for this market but shipments from Utah and Idaho are expected to move in this direction more freely next week.

WOOL.

Wool buyers are still busy contracting for wool in Nevada, but with the exception of one contract reported in these columns last week, there does not seem to be anything doing yet in California. The highest price reported from Nevada is 22½ cents. The eastern market is about the same but fairly strong, and there is a tendency to stronger prices on coarse wools. The foreign markets show a little easing up in fine wool, but this is not expected to affect the local situation. There are still a few lots of old wool in growers' hands, but in general the State is better cleaned up than it has been for several years, at this time.

Prices on navel oranges and grapefruit are well maintained, while tangerines are lower. Lemonettes and fancy lemons have been marked up a little.

(Wholesale prices, San Francisco.)

Oranges, Navels	$1.50@2.75
Tangerines	1.00@1.25
Grapefruit	1.25@2.50
Lemons, box	1.75@3.50
Lemonettes, box	1.50@2.00

HONEY.

Local conditions show little change, except that the market shows gradually increasing strength, with really attractive offerings getting down to narrow limits and little coming in, while buyers take increasing interest. Requirements for the local trade, however, are not large.

Water White, comb	13@15 c
Amber	8@12 c
Water White, extracted	7@ 8 c
Light Amber	3@ 4 c
Dark	2@ 2½c

NUTS.

In response to queries regarding the almond quotations published during the past season, it may be said that the figures were the reguar quotations given out by the Almond Exchange, as its selling prices to the trade. The various expenses of doing business, cost of bags and other materials, etc., amounting to 1 cent or more per lb., must be deducted before the returns to members can be named, and this naturally cannot be done until the season is over, when expenses are figured out. The Exchange has been out of spot stock for some time, and now has taken all the orders subject to approval of price that it dares to accept, showing that, notwithstanding the good crop in prospect, there is a very large demand. There are still a few odd lots of walnuts, but these are gradually cleaning up, and Oriental stock is also about sold out.

(Prices f. o. b. San Francisco.)

Almonds (1915)	Nominal
Walnuts (1915):	
Budded, per lb.	17½c
No. 1	14 c
No. 2	11 c
Jumbo	17 c

LIVE STOCK.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, S. F.)

Steers, No. 1	7 @7¼c
No. 2	6½ @6¾c
Cows and Heifers, No. 1	6 @6¼c
No. 2	5½ @5¾c
Bulls and stags	4 @5½c
Calves, light	8½ @9 c
Medium	7½ @8 c
Heavy	6½ @7½c
Hogs, grain-fed:	
100 to 150 lbs.	7½c
150 to 175 lbs.	7¾c
175 to 250 lbs.	8 c
250 to 325 lbs.	7½c
Prime Wethers	7¼ @7½c
Full Wool Lambs	9 @9½c

DRESSED MEATS.

Steers	10½ @11 c
Veals, large	12½ @13 c
Small	13 @14 c
Prime Wethers	13 @13½c
Lambs	15 c
Hogs	11 c

HORSES.

There have been no notable offerings in San Francisco for some time, though a few sales of more or less interest have been held at outside points. The demand at present appears to be most active in the country, though there is always a market here for desirable draft stock, and good horses of medium to heavy weight for contractors' use are expected to get some attention later in the season.

(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs. and up	$250@300
Drafters, 1550 to 1650	150@225
Chunks, 1350 to 1500 lbs.	150@175
Wagon horses, 1050 to 1350 lbs.	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@ 75
Farm Workers	50@100

WOOL.

(Prices paid in the country.)

Sacramento Valley, lb. 18	@19 c
Southern, year's staple 15	@16 c
Six months	13 @15 c
San Joaquin (defective)	10½ @11½c
Northern, free	12 @15 c
S'thern Mountain, free	13 @14 c
Tehama Co., free	13 @14 c

GROCERIES.

Sugar has made two sharp advances recently, being now held on a 6.45c basis. Flour is steady at the recent high level. Codfish has again advanced, and salt salmon is nearly as high as salt beef. Molasses is advancing. Several kinds of green coffee are up a little.

WEEKLY BUTTER AVERAGES.
Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	18.60	28.00		28.20
" 9	25.33	26.66	26.00	28.10
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	26.66	36.33	28.00	36.66
Feb. 6	26.68	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25
" 20		32.00		32.00

WEEKLY EGG AVERAGES.
Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 26	36.33	28.83	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50
Feb. 13	23.00	28.90	25.10	28.00
" 20		23.66		20.33

Publisher's Department

A letter from the United Fruit Company of Newcastle, says: "We have received very fine results from the advertising with your paper and the only reason we are cutting the advertisement down somewhat, is that we are practically sold out of most of the varieties."

A new book entitled "Selected readings in Rural Economics" by Prof. T. N. Carver, has just been issued by Ginn & Co. of 29 Beacon St., Boston. The chapters cover general principles, agricultural history, land tenure, agricultural labor, the farmer's business, agrarian movements in the U. S., rural organizations and marketing, agricultural policy. The book contains 970 pages, well bound, and the intrinsic interest of the subject and the notable authorship will assure careful attention. The price of the book will be furnished by Ginn & Co.

If all of our readers knew of the value of our new book, "Second Thousand Answered Questions in California Agriculture," the edition, large though it is, would not last two weeks. We are selling lots of these books, but we want to supply every reader possible with a copy while the edition is fresh from the author's pen.

As the rainy season is nearly over and farm activity begins, our readers will find the need of referring to printed matter for information a necessity more and more frequent. Whether the information wanted is along tree planting lines, gardening, floriculture, stock feeding or poultry practice, we have the books that will help you. The list published by the Pacific Rural Press is printed in another column, and we will be pleased to fill your orders.

CHANGE IN CALIFORNIA CURED FRUIT EXCHANGE.

At a meeting of the Executive Committee of the California Cured Fruit Exchange, held at San Francisco this week, Wm. Jas. Hill of Shasta Co. was elected to the position of Secretary-Treasurer, in place of S. O. Walker. The business of the Exchange will be continued as before this change was made.

Classified Advertisements.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

SUDAN GRASS SEED for sale by the rower, direct to farmer at a saving of 60 per cent—less than Seed dealer's prices! Choice seeds; none better. Send in your orders now while it lasts. Greatest forage crop known for dry or irrigated land. Better and finer hay than Timothy. Wm. P. Spalding, R. F. D., No. 1, Box 64, Los Molinos, Cal. 30c. lb. small lots; 50 lbs. and over at 25c, delivered.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

ASK FOR SNOW'S GRAFTING WAX—If your grocer does not have it, send to D. A. Snow, R. 3, Box 255, San Jose, Cal.

MOGUL TRACTOR, 45 H. P.; used one season; fine condition; will demonstrate; have no use for it; will sell for half cost and give terms, or exchange for horses or mules Drills, discs and other farm machinery for sale. Address W. H. Hord, 704 Market St., S. F.

SAVE MONEY ON YOUR PUMPING PLANT—We are reducing our stock of Gas Engines, Oil Engines, Centrifugal Pumps, Friction Clutch Pulleys, etc., and can name you very low prices indeed. Write us at once. Commercial Iron Works, 481-497 Fifth St., San Francisco, Cal.

PRINTED STATIONERY— Hammermill bond letterheads, $2.50 per 1000; envelopes, $2.25; billheads, $2.50; business cards, $2.50; good work; sure to please you; mail order a specialty; samples free. G. C. Gallagher, the Service Printee, 309 Battery St., S. F.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds $3.00 delivered. Order with remittance, WM. J. SCHROTH CO., 112-B Market St., San Francisco.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

APPLES!—Buy direct from producer. Newtowns, 90c; Bulk pack, 4 and 4½ tiers, equal proportion. No 2 grade for cooking, 65c. Edwd. A. Hall, Watsonville, Cal.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.

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WALNUT TREES — Late blight-resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California black root; as the California Black root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

FRANQUETTE AND MAYETTE grafted on California Black. Sizes 3 to 10 feet. Prices reasonable. Special discount on large orders. Sunset Nursery, 525 W. San Carlos St., San Jose, Cal.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

WALNUT TREES—Eureka and El Monte varieties a specialty; also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

ETTERSBURG NO 80 OR 84—Inspected strawberry plants. $1 per 100, $8 per 1000 postpaid. Pure Soudan Grass Seed, 25c lb. postpaid. The J. H. Keith Nursery Co., Arvin, Kern Co., Cal.

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GRAFTED ENGLISH WALNUTS—A few hundred fine vigorous trees. Two-year-old California Black Walnut roots, one year Concord Walnut graft. Bishop Bros., Santa Clara County, Cal.

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CITRUS, FIGS, PEACH AND APRICOT TREES—Also Thompson, Muscat, Emperor and Malaga rootings for sale at the Wood Ranch, two miles south of Del Rey. I. Takahashi.

FRUIT AND ORNAMENTAL TREES—Almond, Prunes and Pears. Berry plants. We contract to plant and care for orchards. Panama Nursery Co., Concord, Cal.

WALNUT TREES—Grafted and Seedling. Also fine field-grown Ganter and Harman Avocado trees. Write for prices. Magnolia Nursery, Whittier, Cal.

ACACIAS AND EUCALYPTUS—Most varieties, in cans. 3 feet up. Fine stock; Any quantity. Write for prices. Ekstein Nursery, Modesto, Cal.

BURBANK'S Spineless Cactus—Direct from the home of the originator, Santa Rosa, Cal. We are now offering the new improved varieties of forage and fruiting cactus for cattle, hogs and poultry. Write for our pamphlets and price list. J. I. Jewell, Santa Rosa.

FOR SALE—Spineless Cactus Plants. Prices right. B. C. Engbert, Byron, Cal.

PRUNE TREES—12 cents. Walnuts, 30c. Cash Nurseries, Sebastopol, Cal.

APPLES, PEACHES—10 cents. Gage Nursery, Corning, Cal.

WAGNER'S CRIMSON GIANT WINTER RHUBARB—Subdivided plants. $15 per 1000; $2 per 100. G. R. Shelford, Healdsburg.

CLOVIS NURSERY offer for sale all kinds of nursery stock at 2320 Tulare St., Fresno. K. S. Yamamura, owner.

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CALIFORNIA GROWN SUDAN GRASS SEED—Absolutely free from Johnson Grass or other Weed seed. Plant all you can of it; for Broody Chicks and laying Hens or stock of any kind you can't beat it. 30 cents per lb. Write for prices on large lots. Lasher's Hatchery, Petaluma, Calif.

SEED BEANS—We have choice Red Mexican and Blackeyes grown on sandy land, producing a heavy crop. Well cleaned and in good order. Write for prices to THE GRANGE COMPANY, Modesto, California.

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TEPARY SEED BEANS—1915 grown. Fancy recleaned, 7c lb. Order now; limited supply. Dean H. Potter, Shafter, Kern Co., Cal.

SELECT LOCKEFORD BURBANK—Rural and American Wonder Seed Potatoes. $1.50 per 100. N. H. Locke Co., Lockeford, Cal.

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WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. R. Humphreys, Principal, Stockton, Cal., Box 704.

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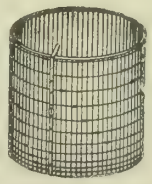
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WANTED TO HEAR FROM OWNER of good farm for sale. Send description and cash price. B. G. List, Minneapolis, Minn.

WANTED GOOD FARM, or unimproved land from owner. H. L. Downing, 145 Palace Bldg., Minneapolis, Minn.



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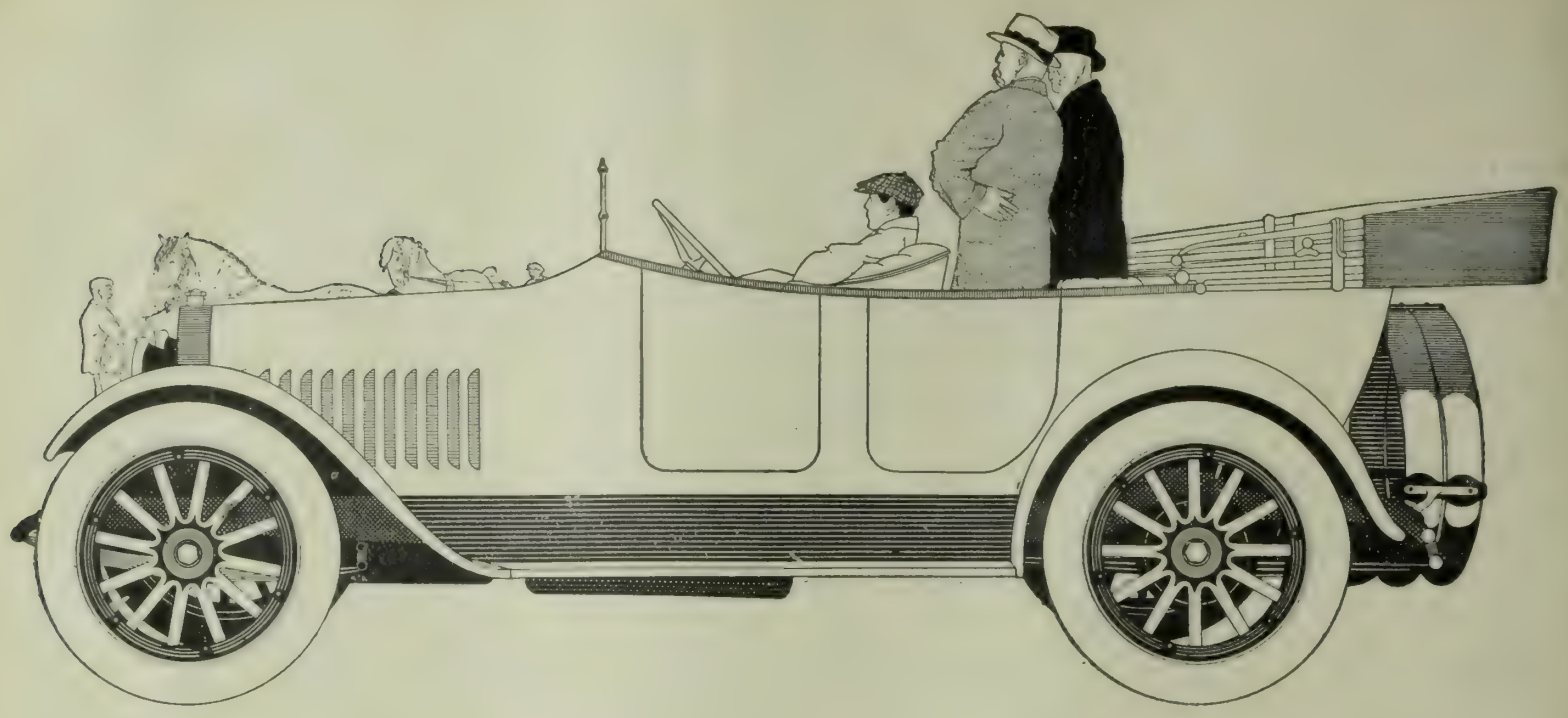
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THE PACIFIC RURAL PRESS

California State Library

SAN FRANCISCO MARCH 4, 1916. LOS ANGELES

California's Ettersburg Strawberries.

The Pacific Rural Press was the first to give the world a systematic account of a wonderful new race of strawberries produced upon the basis of wild species and varieties found on our sea beaches. This work has reached striking results, which are described by their author for our readers.

[Written for Pacific Rural Press by Albert F. Etter, Ettersburg, Cal.]

TEN years ago, in the early spring of 1906, some of the older readers of the Pacific Rural Press may remember that in writing of what was before me in hybrid chiloensis strawberries, I said we were to have these very vigorous and robust plants that "would be wonderfully productive, evergreen, and everbearing."

Speaking of prophets, they may be very conveniently placed in three different classes, as follows: the real thing, or those who are able to foretell what is to happen; those who just guess what is going to happen and by luck strike it right; and those who see clearly ahead and tell what is going to happen long before the general public see any sign of what is coming. The writer is in the latter class and his best claim to modesty is that he usually gets far more than he promises. Or, to be more frank, he is no prophet at all and nothing to boast of as a keen observer, inasmuch as he only sees a few of the things that are taking place before his eyes.

This preamble gives us our bearings so that we may now announce that the statement of ten years ago is not only verified, but in getting it I have brought to light many other things that should delight all lovers of fine strawberries. From an educational point of view, for the person who likes to look backward from results, tracing their origin step by step, it shows how wise we may be if knowledge is limited to only a few facts; yet, still how stupid and shallow we are in our groping with a poor light, with the desire of our ambition lying in the open before us.

It may be remembered that when I crossed the Rose Ettersburg (the R. E. is a hybrid between the Peruvian sand strawberry and a third generation seedling, Sharpless X Parry) with the robust wild beach strawberry (a species of F. chiloensis), I got a plant that, though of remarkable vigor and a profuse bloomer, was almost absolutely sterile. Indeed, I had this plant for ten years before I saw its first berry; yet it should be remembered, if you would get the point in this story, from first acquaintance I said this worthless plant (known on my records as Ettersburg No. 20) had great possibilities in it.

When the No. 20 was produced, I emasculated another blossom of Rose Ettersburg and pollenized it with a blossom from our little wildwood strawberry (F. Californica), and produced another nearly worthless plant; but it did at least have the merit of producing some inferior fruit. Now, it would seem that I had made two worthless crosses; but, with a fighting chance, thought maybe a second generation would give a turn-up worth while. Foiled completely in the Rose Ettersburg X Beach hybrid (No. 20) (and I did want to show deep genius so badly); so all that was left for me to do, as the blossoming season was now passed, was to save seed of the Rose Ettersburg X California plants, and maybe I could make a cross between the two later on. But many a genius has slept his life away when he should have been working; and when he awakens he finds that opportunity has fled.

How a Bug Became a Genius.—So it is to be told on me, that while dreaming of what I was going to do, some pesky wasp, bee, or thrips (a tiny insect no larger than the point of a cambric needle) cross-pollinated my Rose Ettersburg-Californica blossoms, and instead of a second generation, all I got were multo-hybrids, showing the unmistakable impress of their male ancestor, Ettersburg No. 20. Ettersburg No. 80, 84, 91, 93, 111, and 112 all came out of this lot of seedlings. Truly, I got the results; but the bug had the genius end of the game. At the time this work was going on, I made a cross on the Michel's Early, pollinated with Rose Ettersburg. Both these parents are large, thrifty growers; but the only plant that ever left its blood in my work with strawberries was a puny little female plant whose fruit was of no value. Indeed, the plant was worthless from any point of view except to a genius, or a "wizard," as some people would like to term him. But alas! I was no wizard in a situation like that. Truly, I did use this plant in making a cross with the Alpine strawberry, but I did so because it was a helpless little female, and it was growing right in the dooryard. That may be opportunity—but genius, never. The progeny of this cross was vigorous and productive, but not very reliable. One of these was Ettersburg No. 114.



TREBLA—A New Evergreen and Ever-Bearing Strawberry. Variety believed to be capable of yielding twenty tons to the acre and full sister to another seedling, which is practically unproductive. One plant of this variety was thirty-eight inches across and had 125 fruiting crowns.

Ettersburg No. 80 (distributed by the Pacific Rural Press) is well known in California, where many people in various parts of the State esteem it as a variety of sterling merit. No. 84, a sister of No. 80, is less well known. It has a more delicious berry than No. 80, and is more of the texture of the ordinary strawberry. It is a stronger grower, and has the reputation of being an all-summer variety in favored localities.

How Trebla Came.—In a certain cross between Ettersburg No. 114 and No. 84, producing only a few seedlings, two very remarkable varieties came into existence. Both of these produced well at two years of age; but one of them has never produced any berries to speak of since. However, the plants are immense in size. One I measured was 38 inches across and had 125 crowns. The other variety was formerly known as No. 222, but it now known as "Trebla." Trebla sounds as though it might have some relation

(Continued on page 292.)

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California Weather Record.

The following rainfall and temperataure record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., February 29, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	.67	29.68	31.55	64	36
Red Bluff	.66	18.36	17.64	72	38
Sacramento	1.20	17.00	13.95	66	44
San Francisco	1.12	25.55	16.33	70	48
San Jose	.59	15.10	11.64	72	40
Fresno	.68	9.84	6.48	68	42
Independence	.12	9.68	6.34	60	—
San Luis Obispo	.90	24.42	14.08	76	40
Los Angeles	1.62	18.97	10.96	78	50
San Diego	.40	11.49	7.31	72	50

THE WEEK

WE ARE writing on February 29th—a thing possible only once in four years, because it requires 365¼ revolutions of the earth on its axis to fill the time needed by our planet to make its circuit of the sun. As it is impracticable to introduce a fraction without abandoning the obvious advantage of making the diurnal revolution our time-unit, we are obliged to jump a cog in the wheel once in a while to catch up with our proper relation to the sun, which, in the long run, is by far our most important thing to maintain; for the year, and not the day, is the standard of measurement in the solar system to which we belong. On this well-known phenomenon and the fact of our human attitude towards it, we wish to base the suggestion that in purely human affairs we shall also be wise if we jump once in a while from the path in which we have been running to another path which seems to have a clearer upward grade. To one climbing toward a ridge by using the trails of grazing animals, this is so familiar that the method is almost unconsciously adopted. In affairs less material and obvious, we do not adjust ourselves to upward courses so readily. We need to think about it and to discuss directions in which different courses seem to lead, to be sure that a present path carries us only on a level or downward, and that a new path, to which we can leap, is surely upward. This is the exercise to which we invite the reader of these columns this week. We take the general theme: what should the future course of our State executive horticulture be? It is timely to discuss this theme, not only because it is leap year, and we think that we ought to jump to a somewhat different path to go upward, but because Dr. Cook has announced his retirement and thus opens the way for a change. And though we shall proceed to consider such a change, not abstractly, but somewhat concretely, in the light of recent events which seem to us significant, and though we shall make free use of personalities, as signs of tendencies and dispositions which we think should be avoided and abandoned, we have no personal ill-will to gratify nor any personal interest to serve. We have reached an age which is out of hearing of the call of personal ambition—except to do well, and in the public interest, the few things which many years have taught us to do. And we would deny no man his right to that same liberty and pursuit of happiness. But, naturally, there will be different views of what constitutes truth and value to the public interest, and between such different views the public itself must decide.

We believe that the State institution for the executive advancement of fruit-growing should now leap to a clearer upward pathway. It has drifted along until it has become entangled with other institutions made for public instruction and for research, and is duplicating their tracks across territory in which they hold the right of way; it is building barricades across the advance of legitimate and necessary business interests; it is at war with itself on the matters of inspection and interior-quarantines, as we have already pointed out, and it is doing such things because it has no proper conception and grasp of other things which are just now most important to do. But this is all in the abstract; if the reader please, we will now proceed to shovel the concrete.

WHAT MADE MOSES GREAT?

FOR thirty-five years California's executive horticultural work has been largely pest-killing and exclusion, and the effects of it may be conceded to have been incalculably valuable. It was given that turn by Matthew Cooke, of blessed memory. There was no entomologist in the State in 1880 who believed in pest-killing, so Matthew boxed his compass as a box-maker and started out in that direction, blindly but zealously and efficiently. It was a great emergency and he rose to it. Since his time conditions have radically changed; the University has educated an army of trained pest-killers; barrels of manufactured insecticides and fungicides are easier to buy than beer; spraying machinery is freely and enterprisingly advertised by manufacturers; full information of pest-killing preparations and the use of them is given continually in our agricultural journals and books and in the circulars of the county horticultural officers. Thus, whosoever will can clean himself of pests and the State should see that he does it, largely by commercially pinching out poor fruit and the growers thereof, as has been suggested—with whatever police regulations may be necessary thereto. When this is agreed to our State executive horticulture can be largely in the line of commercial pomology, which is now our greatest need. And commercial pomology is a more important industrial thing than pest-killing, which is only incidental to it. Let the State advance along this broader, higher line of promotion for fruit growing; let State officers demonstrate how better fruit can be sold, more profitably to good growers and more cheaply to a world of consumers. If the State can make all the fruit which goes on sale, good for something, the problem of greater profit will be at least half-solved. Such work by the State will also be the greatest possible advertisement of our product in the eyes of the world.

Now Moses was the greatest pest-killer of antiquity, and for swatting flies and bouncing grasshoppers and frogs he has had no rival to this day. But let it be remembered that it was not these achievements but his release of people from bondage and his establishment of the greatest commercial race on earth which gave Moses rank among the most distinguished of mankind. Our conviction is that our fruit interests require, not a bug-killer, but a pomological Moses with such new laws as he may need to enable him to proceed toward making fruit products more profitable. We are face to face with a commercial, not an academic problem.

HIRED AND FIRED!

THE committee hired by the Visalia Fruit Growers' Convention to move toward the standardization of the horticultural laws of the State was fired by the San Bernardino convention—that is, almost. As shown by the report in our last issue, Dr. Cook is the lone survivor of the old committee. It reminds us of the story of the eagle and the owl. A little owl, hard pressed by a hungry eagle, made a quick dart into a squirrel hole, but the eagle swooped and pulled out all his tail feathers. The little owl, in the refuge of the squirrel hole, turned his head to observe the extent of the injury and exclaimed in thankfulness: "By gum, I have lost my tail, but I have saved something!" And so it is with this committee: it is almost a total wreck—all hands lost but the cook!

So far as anybody cares what happened to this committee, the formal firing of it by the San Bernardino convention is simply funny. But in its relations to courtesy and consistency between the consecutive conventions of fruit growers, the operation at San Bernardino was high-handed, dangerous and illegal. The transactions of the Visalia convention were complete, the body adjourned sine die and its transactions must stand forever. Other conventions can ignore its transactions, or can undertake other transactions which would render earlier ones of no avail, but they can no more abolish these earlier transactions than they can obliterate a page of history. Dr. Cook ignored the Visalia transaction by never calling its committee together, and that he had a perfect right to do (the wisdom of the action being an entirely different question); but to undertake to invade the transactions of the Visalia convention, which was clearly within its rights in making them, is a petty manifestation of the same attitude over which Europe is now at war. We do not expect Dr. Cook to see this. He has given the attorney general's office a busy four years in the effort to teach him that he is a creature of law and not the creator of it, and yet he does not seem to have retained much impress of the effort. And even that does not much matter. The danger in the lack of respect for an earlier assembly, which the San Bernardino convention was induced to manifest, is that it opens the way for all sorts of personal malice or stupidity to attempt to re-write history for its own purposes and that will very soon reduce the interest which California fruit growers take in these unique assemblies and thus destroy their influence. Dr. Cook had done enough previously to prostitute these conventions to his own mistaken purposes. In this last transaction he has used dynamite to secure his own way, which he could have secured just as well by doing nothing at all. For the Visalia convention placed its com-

mittee in his power just as completely as the San Bernardino convention has done. Whatever he does, then, he will be still following the lead of the Visalia convention. The personnel of the committee is not a matter of any importance, and yet that seems to be Dr. Cook's only reason for invoking this vain and illegal ruction.

DR COOK WILL RETIRE.

WE ARE sorry that Dr. Cook had to announce at the San Bernardino convention that he would soon retire from the State commissionership of horticulture because of ill-health or the fear of its approach. We wish every one with whom we have to do, or try to undo, to feel like a fighting cock—for then there is some fun in the game. We are honestly sorry that Dr. Cook ever felt impelled to put his health to such a strain as he has valiantly endured during the last four years. We would like to emphasize that point, but Dr. Cook would not believe it honest and would charge it up to us as some new kind of a slam. But we are sincere, because we have a conviction that a round plug never did and never can feel good in a square hole. There must always, in the nature of things, be some stress upon the central tissue in the effort to fill the corners without bulging the sides. And this is what Dr. Cook has been trying to do for four years. He should have a rest, but we are sorry that he needs it. Perhaps there is no more significant indication of his inappreciation of the fitness of things than his misplaced desire to relieve Governor Johnson of the responsibility of making appointments, by naming his own successor. For one of the San Bernardino resolutions said of Frederick Maskew, in nominating him for State commissioner, many good, true and well-deserved things, and pointed its pyramid with these words: "Who will maintain the same high standard of practical and scientific efficiency which has characterized the administration of Commissioner Cook." Think of that: offering to help the governor to make an appointment guaranteed to be just like the last, which has given him more trouble than any other he has made in the whole course of his administration! The governor does not need that kind of help, and Mr. Maskew does not deserve such a handicap. It is the same old, round plug in a square hole.

Besides, the use of a fruit growers' convention as a nominating agency for an executive appointment is an outrage upon the history and traditions of over a third of a century. If the action at San Bernardino should be accepted as a precedent, the end of these beneficent popular assemblies will be clearly in sight.

WHY NOT MR. MASKEW?

AS DR. COOK'S appointment of his successor is, we presume, subject to ratification by Governor Johnson, it is still proper to speak of it without personal prejudice, and according to one's conviction of what is for the public interest. Mr. Maskew is a man capable of original thinking, of good reasoning power, of independent and self-reliant judgment, of firm decision and unswerving action. He is also fully possessed of the exact knowledge which the foregoing mental traits need for intelligent operation. He has also clearly demonstrated ability beyond question in technical executive matters. In all these things he is a square plug for a square hole, but Mr. Maskew is an academician. That brings us to a brief re-statement of the conviction which we have expressed before, that in the emphasis which has been placed upon certain lines of work the administration of our horticultural laws hitherto has not brought State aid to meet the greatest present needs of our great fruit industries. It is true that the laws themselves have been turned too far aside from these greatest needs, and that is explained by the fact that each succeeding horticultural executive and his supporters have secured laws fitted to their own waist measures. That is one of the reasons why these laws need a thorough overhauling. In a way, they are too largely academic and not sufficiently industrial and businesslike in their points of view and their subject-matter. They have exalted the killing and control of pests overmuch—losing sight of the fact that research and extension teaching are the proper sphere of other State institutions—and the other fact, that if the State will make fruit-growing more profitable by regulating and promoting trade, the business will induce the growers themselves to fight for it and be eager to kill their own pests—which is really only an item of successful production. To bring this about it may be necessary to have all the protective provisions, and officers to enforce them, which we now have; it may be even necessary to have more and better provisions and officers. We are not claiming that existing safeguards be relaxed, but that they should be made more rational and consistent and be no longer regarded as the greatest function of our State executive horticulture.

WHAT THE STATE SHOULD DO FOR FRUIT.

BY INSISTING that the State shall do for the fruit industry broad economic and commercial work, and by gradually requiring that growers learn to handle their own producing problems largely, with proper penalties against those who endanger others, we shall come to serving this industry better by State enactment and executive activity and develop, among individual and associated growers, a spirit of understanding and control of incidental difficulties of production, perplexing though they may seem to be. And this result is to be attained, it seems to us, by getting the greatest possible amount of good fruit and food products into the hands of a world of consumers at a minimum cost of distribution; by getting all the bad fruit into hopeless unprofitability, by condemnation or otherwise. When this is done, most growers will attain to something like the efficiency in pest control which our best producers already manifest, and all others will be pinched out of the business by economic laws or by penalties against pest-breeding. We see no future for pest reduction by paternal effort to protect and perpetuate what should be blotted out as imbecile and unprofitable.

We have mentioned only one line of statesmanlike executive work for the extension of our greatest industry, which California should push forward. To mention others would only be to multiply instances of which there are many. As we think of these things we are firm in the conviction that there should be a radical change in the point of view and policies of our State horticultural work. Mr. Jeffrey saw a great light a few years ago, but that now appears only as a glimmer through the nebular hypotheses of Dr. Cook. Our conviction is that the next State Horticultural Commissioner should be a man of experience and mastery in the growth and handling of commercial fruits; a man who knows the value of academic things and how to use them to advantage; who could organize the State fruit work for the greater profit of fruit growers; who would enlarge the scope and dignity of Mr. Maskew's work and not mess in it; who would have intelligent initiative and experience to bring to the support of Col. Weinstock's efforts; who would remember the past, but press forward to better things. We have no candidate. Qualified men can be found in all parts of the State.

Queries and Replies.

Querists must give name and address.

Currant Mildew.

To the Editor: What shall I do with currant bushes which get full of mildew soon after they bloom, and when starting to ripen the berries are covered with a crust.—H. K., Oakland.

Spray now with lime-sulphur to clean the canes and then powder the leaves thoroughly with fine sulphur after the blooming if you see the trouble appearing. Apply when the leaves are wet with dew, if possible, for it stays in place better.

Bad Creeping Grass in Lawns.

To the Editor: I am sending a sample of grass that is coming up in my blue grass lawn. Please tell me what it is, and is it liable to run the blue grass out?—G. M., Carpinteria.

Whether this is one of the sneaking grasses which they rather enjoy calling "devil grass" (with proper emphasis) at the south, and whether its nature perhaps entitles it to rank with Bermuda in the deviltry it may play with a blue grass lawn, we are not sure. It does, however, belong to that horticultural group of creeping, joint-rooting intruders, although it has botany of its own. Frank J. Smiley of the Botany department of the University tells us: "The plant is Agrostis stolonifera, commonly called "Water Bent-grass." It is a native of Europe, but has been introduced into southern United States and into California as a pasture grass and is likely to spread in low moist places. Some of its varieties become troublesome weeds in Europe, where it is reported that they are sometimes difficult to control."

Possibly, however, the whole situation is not quite so easy as that because there is a variety of the species, stolonifera, which has some horticultural standing as a lawn grass and may be included in some "lawn-mixtures" offered by seedsmen. But whether you have the one agreed to be bad or the other which some hold to be good does not matter much if its different hue in the lawns offends you by color or by the patchiness which it produces and its disposition to become rubbishy on the surface. We can only suggest that it it does offend, the only treatment can be to grub it out when the ground is safe—pulling out, of course, as many long rooting-joints as you can. It is possible that you encourage this grass by keeping your lawn too continuously wet. If so, keep your blue grass growing by using a larger amount of water at longer intervals. This is the right way, for several reasons.

Sparks from the Citrus Convention.

[Written for Pacific Rural Press.]

MATURITY STANDARD OF 8 TO 1.

Fred Mason, Oroville: Nature shows when oranges are ripe by the color.

We do not believe in sweating to bring color to conceal inferiority.

Butte county conditions are such that the 8 to 1 standard is unjust.

W. W. Hinsey, Fair Oaks: The 8 to 1 standard is the great menace to the citrus industry of the north.

In one season it cost Fair Oaks 50 per cent of the crop, or $30,000.

Sacramento county oranges are on the verge of rotting when they have gained 8 parts soluble solids to one of acid.

They are the finest oranges in the world when they test 7 to 1, according to letters from customers.

We printed this season a notice of our olives on each orange wrapper, and in our returns on that we are getting letters from many parts of U. S. and Canada saying our oranges this season not shipped under the 8 to 1 test are the best they ever ate.

Many Fair Oaks oranges test as high as 15 per cent solids, a very high sugar content, but because they had 2 per cent acid, could not be shipped as 8 to 1 fruit.

Hobart Webster, Porterville:

The 8 to 1 standard saved Tulare county from ruin.

The question is not, "How much does it delay shipments from unfavored locations," but "How much more will a consumer buy after he eats the first oranges."

Before the 8 to 1 test was announced in 1914, the growers were getting desperate. As the yield increased, and the worse the conditions became, the earlier they shipped the fruit, because only the earliest shipments were bringing any money.

Since 98 per cent of the Tulare oranges were held for the 8 to 1 condition, not only Tulare but all of Southern California has benefited. Nearly 100 per cent of the growers are still in favor of the standard.

For the week ending Dec. 25, 1915, the Cal. Fruit Growers' Exchange, which sells only 8 to 1 oranges under its advertised brands, sold on the New York auction 17,806 boxes of oranges averaging $3.06. Outside interests at the same time and same place sold 9,964 boxes, some up to standard, some not, averaging $2.53. During the next week the Exchange sold 18,394 boxes averaging $2.53 while outside interests sold 9,964 averaging $2.14.

If, by good care, your soil or climatic conditions are such as will not produce fruit that is up to the government-suggested standard by the time it is colored, it is up to you to defer shipment until you can offer the consumer an orange that is good to eat.

W. L. Crowe, Lindsay: There are a few orchards in Tulare county that produce fruit early in the season, of high color, high sugar, and high acids, but which would not stimulate demand for another.

Some of the "earliest" fruit in Tulare county has proved to be the latest. It is very largely a matter of proper care of the orchard.

E. M. Chace, U. S. Dept. Agr., Los Angeles: Color of fruit can be regulated by manipulation of the tree.

Butte county has very little reason to object to the 8 to 1 standard. Of 11 growers who sent sample fruits regularly one had 8 to 1 fruit Nov. 4, 1915, two weeks before Tulare county came on, though 80 per cent color did not come until Nov. 25 except on one sample.

One orchardist couldn't get water for a month when he needed it. His oranges colored beautifully, but would not come up to the standard so early as his neighbor's. Last season, with plenty of water, he came up to standard two weeks ahead of the same neighbor, who in turn had water trouble.

Oranges with 15 per cent or more of solids and a high acid are characteristic results of lack of water.

Fruit lacking water colors beautifully, but is so sour that no very extensive number of people would buy the same kind twice.

MAKING NITROGEN AVAILABLE.

Prof. W. P. Kelley, Riverside Experiment Station: In converting the ordinary forms of soil nitrogen into the soluble nitrate form in which it is available for plant food, organic matter to support bacterial life is one of the most important factors.

Manure is slower to nitrify (its nitrogen to change into nitrates) than green cover crops plowed under.

Barley straw and similar bulky materials tend even to temporarily reduce the nitrates in the soil. Bacteria breaking down the cellulose of straw use nitrates, converting them into less soluble forms. These ultimately may be rechanged into nitrates, but meanwhile other nitrates should be supplied.

Small amounts of alkali or other soluble salts interfere with nitrification.

Most Southern California soils have nitrifying bacteria which will work on any of the common forms in which nitrogen is applied, provided they have organic matter and chemical and physical soil conditions that are favorable.

One of the first products of the decomposition of organic matter is ammonia gas, which unless quickly combined in moisture, escapes to the air and is lost.

NITRATE MOVEMENTS IN SOIL.

Prof. I. G. McBeth, Riverside Experiment Station: The brown soil incrustation often seen after orchard irrigation sometimes contains 100 times as much nitrate as the same amount of soil from 6 inches below.

These nitrates are unavailable to the trees whose roots cannot reach them on account of frequent cultivations and drying of surface.

They get there by being dissolved in furrow-irrigation water which evaporates from the surface of the soil and leaves them behind.

Soils fertilized heavily with nitrogen as compared with similar soils unfertilized, had four times as much nitrate in the upper six inches in Sept.; about twice as much from 6 to 18 inches deep; and just a little more 18 to 30 inches deep. Winter rains carried the nitrates down so that there remained scarcely any more in the upper 6 inches of the fertilized than the unfertilized plats; but four times as much 18 to 30 inches deep.

Furrow irrigation when water evaporates from the surface, shoves nitrates sidewise and upward so their greatest concentration is at a line along center between the furrows. In heavy soils, if the water from two furrows does not meet between them by seepage, the concentrated nitrates are left in two lines.

The way to realize greatest value of nitrogen fertilizers is to plow them under deep furrows so they will be in reach of the roots.

To keep them down, flood irrigation will be necessary with prompt cultivation to prevent capillary rise of the water and deposit of its dissolved nitrates at the surface.

Cover crops use much of the surface nitrogen, locking it up in insoluble forms during the rainy dormant season, but nitrifying quickly when plowed under deeply in tree-growing season.

WHAT WE KNOW ABOUT FERTILIZERS.

Director H. J. Webber, Riverside Experiment Station: There are only "mighty few things of which we are fairly certain."

The need of organic matter to aid in making fertilizers available and to keep soil in proper physical condition needs to be re-emphasized.

Wherever melilotus has failed as a winter cover crop, the trouble is probably wrong methods. It does grow successfully in most soils.

Melilotus is the best cover crop we have. We want a better one. It does not grow fast enough in winter. Perhaps a strain may be developed which will grow as fast in winter as purple vetch.

Cover crops fix nitrogen until danger of its leaching away is gone.

It would pay to buy alfalfa at $8 to $10 a ton to use as fertilizer for the nitrogen alone. But alfalfa also contains potash, sulphur, and phosphoric acid which would be a clear gain, as well as the improvement of the soil by addition of protoplasm and organic matter.

In alfalfa we have one of the strongest and best nitrogen fertilizers we can use. The hay becomes available as plant food two or three weeks after it is plowed under.

California ought to grow all the nitrogen fertilizer used in California.

Alfalfa may ultimately be fed to stock and the manure used more economically, but orange growers can hardly be stock growers.

Nitrogen is the next most important to organic matter. You get a nitrogen reaction right away, but usually not so with potash and phosphoric acid.

Nitrogenous mulches such as alfalfa and bean straw are likely to be more or less wasted unless they are disked into the soil. If top mulch is to be kept on, it had better be of a cheaper kind such as straw.

[Dr. Webber's statements are supplementary to the outline of his address given on page 252 of our issue of February 26.—Eds.]

PLANTING AFTER BLASTING.

To the Editor: I am planting quite a large almond acreage. We have had an unusually trying year for work. We blasted the holes and planted the trees in holes that were quite wet. In fact the bottoms of these holes were soft. We tried hard to bar down any cavities or chambers formed by the explosion but in spite of this I find that the rains have settled the ground and also the trees in the holes a great deal. Now these trees were planted with the stump of the bitter almond —where it was budded—just about level with the ground. I find now that the bud is down in the ground from two, three, four, and in a few extreme cases, six or seven inches below the surface. Will you kindly advise me just what I should do?

Will the bud grow up any as the tree grows this spring?

Will the tree do well with the bud so deep in the ground?

Should I dig up those that are from five to seven inches and leave those that are two to four inches below?

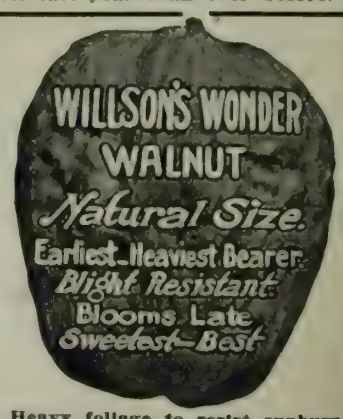
I was advised by some one today that the bud would grow up, but am inclined to doubt it. I could hardly dig up the entire acreage that has settled, but I could dig up the worst ones—say a few in each acre—and replant. The holes were dynamited about 4 feet from surface.—B., San Francisco.

[The bud does not grow higher than set. It sometimes looks that way because the surface soil is shifted by wind, cultivation, irrigation or otherwise.

We should do just as you propose. Let those alone which have only sunk a little and re-set those which have sunk a good deal. If the soil is heavy, 2 or 2½ inches too deep would not matter. If the soil is sandy 3 or 4 inches would not hurt—if you leave it a little hollow around the tree. All deeper than this limit (according to the nature of the soil) we should re-set.

Of course it is not wise to plant over a recent blasting. Blasting should be done early, when the charge is so deeply set, and the ground settled before planting.—Eds.]

Colonel Weinstock addressed a meeting of 500 farmers and merchants at Turlock, last week, at which time he advised the growers to broaden their association of melon growers to include other melon growing districts of the State. It was brought out at the meeting that Turlock melons reached more markets last year than ever before.



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Thinks Standard Prunes All Right.

To the Editor: For the benefit of those of your readers who are in doubt regarding the "Standard" prune, and growers who judge it by the imperfect fruits from young and immature grafts, I wish to state a fact that seems to have been entirely overlooked by those who are knocking this new prune.

No fruit tree of several years' growth that has been cut back and grafted will produce a first-class fruit until the new top growth becomes fairly mature. The first crop will ripen late and when dried will shrink 25 to 40 per cent more than fruit produced a year or two later.

About the poorest lot of prunes I ever picked and dried, was a first crop of French prunes from grafts on peach trees of several years' growth. When grafting the trees I used scions cut from a tree that always yielded a fair crop of very large jet-black fruit that averaged around the 40 point when cured. The prunes from grafted trees were very light in color and weight and bore but slight resemblance to those from the original stock.

One of my neighbors has had three crops on his grafts and says "Standard is the only prune I'll plant in the future."

If picked when nicely colored but still hard, "Standard" will develop a flavor even finer than when allowed to ripen on the tree. This point will appeal to shippers of green fruit. Thousands of acres now being planted to other varieties will be grafted to "Standards" before they begin to bear fruit.

J. T. Green.

Morgan Hill.

AVOCADO VARIETIES.

[Written for Pacific Rural Press.]

The originator of Santa Barbara softshell walnuts is now testing out avocado varieties in Santa Barbara with the help of his daughter. He does not contemplate profit from his work other than the satisfaction of being useful in his youthful, genial old age. His name is Joseph Sexton, and his hope is to find the best few varieties for his district that will ripen fruit early, medium, and late so as to have fruit throughout the year. He says there are about 85 named varieties in the State, of which he has about 50. Below we give their observations concerning some of the better known varieties. These results may easily be very different in other parts of the State.

One of the first buds Mr. Sexton ever set was of the White variety, Sept. 10, 1911. In August, 1914, 7 ripe fruits were picked, the largest weighing 7½ ozs. The second crop was 100 fruits, largest 9 oz. The third crop ripened June 1915, 60 fruits, the largest 9½ oz. On June 28 he picked off 403 fruits of the fourth crop leaving 100 to ripen in Oct. and Nov. The tree bloomed in Oct. for the fifth crop of which the last were picked about Jan. 1, while there are now buds, blossoms, and small fruits developing. The flesh of the fruit has fine flavor but is stringy.

The Harmon has been shipped East and back again, but is subject to dry rot of the nose and the stone gets loose in its cavity. The flesh is thin and it cracks if it hangs on the tree long after it ripens.

Some of the Ganters crack on the tree after ripening, and have nose rot.

Nutmeg is a Hawaiian variety, the original tree of which Mr. Sexton saw while on the island. It has fine fruit, is growing well in January and the new growth has a very ornamental red color.

Blake is a small fruit of fine flavor analyzing about 28 per cent fat. At Pasadena it stood a temperature as low as 15 degrees F.

Taft has a desirable low-spreading growth of thrifty color and large trees, but has not fruited. Such growth is desirable to avoid wind which injures fruit. It is believed to be one of the best three varieties.

Blakeman and Maserve are the other two of the three best commercial varieties. Blakeman has larger fruit than Blake. Sharples is another good one. Cardinal has very ornamental new red growth in winter.

As a result of the agreement between the Central Water Users' Association and M. B. Moon, chairman of the bond holders of the Sacramento Valley Irrigation Project in Colusa and Glenn counties, greater activity in agricultural development is assured for the west side of the Sacramento valley this year than ever before. Large planting of alfalfa, fruit trees and rice which have been held up pending a settlement of this water controversy, now seem assured.

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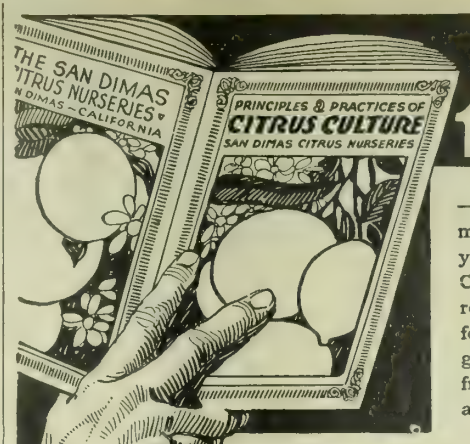
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Lemon Lessons Gathered During 1915

[Address of C. T. Tengue before the Fruit Growers' Convention at San Bernardino.]

The year 1915 has gone down in history as the most disastrous in the history of the lemon business.

The California lemon crop was marketed at a loss of approximately thirty cents per packed box to the grower. The bad results obtained were due to several causes:

First: The reduction of the protective tariff from one and one-half cents per pound to one-half cent per pound permitted the importation of heavy supplies of foreign lemons during the spring and early summer months in the face of the largest California crop that the State had produced. Competition thus forced prices to a ruinously low level in the early spring and there followed the coldest summer all over the United States known in history. Heavy supplies of stored fruit, much of which was aged and in bad condition, was forced onto the market when there was little demand. The result was an almost completely demoralized market condition.

Postmortems are usually held, not for the benefit of the dead, but for the living. Adversity, tribulation and even death often result in benefit to the living. Let us hope that the lemon business will ,in the long run, benefit from the experiences of the past year.

Benefits Expected.—Some of the benefits that I shall hope for, are: An increase in the protective tariff on lemons. Surely it should be easy now to demonstrate that our industry should have a duty that will protect it against our markets being flooded with cheap, poor quality foreign lemons, produced by cheap labor, and shipped to our markets by cheap water transportation.

Second: The bad results of the past year will make the growers and packers scrutinize more carefully their cost sheets and endeavor in every way to get their costs down as low as possible, and, at the same time, increase the quality and quantity of their production.

Third: The excessive amount of decay reported in many cars on arrival in Eastern markets and the object lessons of how this decay affects values, will certainly cause growers and packers to bend every effort to seek the causes. Nothing affects good results in the lemon business so seriously as excessive decay, and the good or bad reputations of any brand, and its ability to command the highest market price in any market, depends largely on the record that that brand has made for good keeping quality.

To Supervise Packing.—Appreciating the importance of this, the California Fruit Growers' Exchange, through which is shipped eighty per cent of all of the lemons of the State, has permanently added to its forces a field man, or supervisor, of all of its lemon packing houses.

Mr. G. W. Hosford, one of the ablest and most experienced lemon men of the State, has been employed in this capacity and is making regular rounds of the Exchange houses studying the records of these houses, pointing out to the managers the weak places in their methods of picking, handling, grading and packing. To my mind this is one of the most important steps in advance taken by the Exchange within my knowledge. Hitherto the Exchange said to the local association: "We will take your fruit and market it to the best our ability, leaving it entirely to your judgment as to how that fruit shall be handled and packed." The result of this naturally was that good association management got good results and bad management bad results, and the figures gotten by bad association management were used to discredit the Exchange system of marketing by those interested in so doing. This Field Department will undoubtedly result in greatly improving the quality of the pack from the Exchange houses. Even this early, improvement is noticeable in the standardization of grades and in less decay by reason of better handling and by the proper classification of green, light green, and ripe fruit at the washing machines, which means that much of the ripe fruit which has been allowed to be packed under extra choice and choice brands at the expense of good keeping quality, will not, in the future, be packed under those brands, but will be packed under ripe brands and sold on its merits.

Brighter Future.—Out of all of the grief of the past year, therefore, has come better business methods on the part of the grower, packer and seller, which is resulting, and will result more and more as time goes on, in placing in the markets of America a better California lemon, which undoubtedly is the best lemon that the world produces when it is handled properly, and when this fact is generally recognized among the jobbers, retailers and consumers of the country, as it will speedily be through the Exchange system of national advertising, with a reasonable tariff, there should be no difficulty as the California crop increases of gradually forcing the foreign lemon out of American markets, resulting in an American-grown crop supplying an American market, which is as it should be.

Development in orchards in the Porterville section this spring promises to equal that of three years ago, up to that time the record-breaking year.

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Great Apple Yield.

[Written for Pacific Rural Press.]

"They say you sold $2,000 worth of Rome Beauties from four acres; what was the main reason for such success?" we asked of A. A. Warren, who has many acres of apple and pear orchards on the flats of the canyon leading up to Oak Glen in Riverside county.

"Water is the main thing. Rome Beauties are thirsty trees; they need more water than any other variety we have here. I have my own intake and over 3,000 feet of pipe leading to the orchards, so I just water the trees whenever I get time. From early in July until the apples are picked in October, they are watered at least once every two weeks. That gives them color and size, which are the main market requirements.

"We got over 2500 boxes in 1914 from about 400 trees 11 years old. A heavy snowstorm the last of April, 1915, spoiled our crop last year. The first grade apples were sold to the wholesaler at $1.25 per box—the rest were sold as culls at about $20 per ton. The box apples had to be strictly fancy and 80 per cent full color.

"Pruning is important, to get the color; and we must spray in this country. We use 200 to 225 pounds pressure with a Bean Power Sprayer. Lime-sulphur cleans up the trees in winter and two arsenate of lead sprayings about 15 days apart usually keep the worms out. We combine iron sulphide or soluble sulphur to control powdery mildew which would affect Rome Beauties pretty badly."

Mr. Warren's neighbor, J. W. Crouch, with 25 acres including many Winesaps, had fine prospects for a crop of that variety last year in spite of the freeze, but lost most of them because of worms which infested them in August, though he had sprayed for them till June 1.

BLIGHT-FREE WALNUTS.

[Written for Pacific Rural Press.]

In the quest for blight-immune walnuts, A. L. Linquest of Goleta has come near success. On ordinarily level land, among 75 acres of 25-year Santa Barbara Softshells are about 12 acres of seedlings of a variety called Kaghazian, planted at the same time. So far as Mr. Linquest knows, there are few if any others in the State.

He claims eight tons of blight-free, tight-shelled, practically all white-meated nuts from the 12 acres, though some blighted nuts have been picked from under the trees. Some of them have been kept unbleached for two years and were then sweet, though slightly dried.

Ordinarily the variety does not bear so heavily as the Softshell, but the practical immunity from blight often brings the crop considerably above the latter. Very little if any blight has been observed on the twigs, leaves, or wood.

They bloom a month later than the Softshells, which may help account for freedom from blight, but they also ripen later—scarcely ever are they harvested before Nov. 15. Mr. Linquest thinks they might be earlier if irrigated.

The nuts vary as do all seedlings, but many are of the Eureka type, some are more pointed. They are often borne in clusters—as many as 15 have matured in one cluster. Trees bearing nuts of Mayette shape are now used for grafting wood to work onto black walnut stocks planted in spaces wherever other trees die.

ADVICE ABOUT TWIG BORERS

To the Editor: I would like to know if something has been found to paint or spray the scions after grafting so that twig borers or bud moths won't bother them?—E. A., San Jose.

[Nothing has been demonstrated to be effective. Arsenate of lead has been proposed as a poison likely to kill a bark biter and whale oil soap as likely to repel by its bad smell, but we are not aware that any one has reported positive results.—Editors.]

A $5000 canning plant is handling 80 tons of olives continuously for the Hemet-San Jacinto Growers' Association which was organized last September and started to build Nov. 20. J. A. Campbell, the veteran olive canner of the State, is in temporary charge of the plant.

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THE ALPHA AUTOMATIC PRESSURE GOVERNOR

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Peaches Need More Light.

To the Editor: I have 1000 9-year old Lovell peach trees that have never produced heavily enough to pay for care and first cost. Last year with one irrigation before harvest about July 20 the crop amounted to about 54 tons green.

These trees are planted 24 ft. on the equilateral triangle method—86 to the acre. The soil is for the most part rather sandy with good drainage. The trees have been topped each year, the object being to produce heavy, stiff branches and to cause the throwing out of fruit spurs in the lower part of the tree—this system having been successful on Muir and Elberta trees. The result however, has not been all that could be desired. The short spurs start in the spring and do well for a time, but the heavy growth in the top apparently shuts off light and air to such an extent that growth stops on the short spurs.

When winter pruning comes on, in order to get the tree in proper shape and down to a point where it would not break, the greater part of the fruit buds would be cut off. Would it be advisable to do little if any thinning in the tops of the trees? Would the opening up of the tree from the bending and breaking of the over-loaded limbs have a tendency to cause the fruit buds and spurs to form in the lower part of the tree?

The trees were irrigated in September directly after harvest for the purpose of giving strength to the fruit buds for the following year, but before the trees were dormant. No new growth followed irrigation. —W. G. F., Red Bluff.

[You have been giving your trees good rational treatment in irrigation, etc., but to get more fruit you must let them retain more bearing wood. If you did less cutting above, the top-load would probably swing open the tree and encourage new growth below as you suggest, but it would be more rational to open the canopy above by removing some of the central branches and give the trees more of an open-center. If you do that now and do not cut back the new top-growth so much, you will get more peaches both this year and in the future because the shoots which break below on the old wood will make a thrifty growth and set fruit buds for next year's bearing.—Eds.]

NEW DESIRABLE CAPRIFIG.

[Written for Pacific Rural Press.]

Seven generations of caprifig wasps in a year have been produced on the Pseudo carrica capri trees according to Francis Heiny of Brawley. This enables Imperial Valleyites to save the breba or winter crop of Smyrna figs. The hot weather develops and matures the wasps faster than in other districts. This combined with the fact that the Pseudo carrica capri fig fruits contain pollen in all of their crops and that they hold fruit all winter, brings the wasps out while the winter figs of the Smyrna are receptive. Mr. Heiny has one such capri tree with about 2,000 figs on it this mid-January, from which he expects wasps to emerge in February.

The variety was accidentally discovered by Mr. Heiny among some supposedly female fig trees which Dr. Francesci of Santa Barbara had imported from Italy and sold to him. The first crop on this tree dropped, and when the second crop of 15 figs was well set one October, Mr. Rixford saw them and later sent some wasps from the California Nurseries at Niles. The wasps infested the Pseudo carrica figs, multiplied, and have spread over the whole valley, where the fig is now one of the most promising fruits.

FROST INJURY TO GRAPE CANES.

To the Editor: I am sending you a cane of muscat grape. In the late fall or winter the bark cracks and dies back to the root, and ruins some of my vines. What is it and what can I do for it? The best thrifty vines are mostly affected. The soil is both sandy and heavy sandy loam. The vines are one and two years old and it works in spots. It is not the vines with black-knot which are affected.—J. S., Hardwick.

[Answered by Prof. Bioletti.]

[The vine cane shows the symptoms of injury by autumn frosts. Vines which are growing vigorously and which have not ripened their wood when the autumn frosts come are very liable to be killed back, sometimes to the arms and sometimes even to the ground. The remedy is to promote the drying out of the soil by ceasing cultivation sufficiently early to allow the vines to mature their wood before the frosts.]

GRAPES AT CUCAMONGA.

[Written for Pacific Rural Press.]

Wine grapes are very largely being interset with peaches, apricots, and walnuts, or being worked over to Sultanas in the Ontario-Cucamonga district. Time was when many Muscats were raised there for raisins, but oranges took their places. A few Muscats are left in that district, but their time of ripening (late Sept.) usually makes drying hazardous, especially because of the long time required on the trays or cloths on account of their size.

Thompsons are being tried but with little success, according to F. W. Whitney who has 16 acres of grapes between Ontario and Cucamonga, of which three acres are Thompsons and two of Muscats. He says Thompsons in that district have generally been pruned long and the canes twisted together in circles over the crowns as the Sultanas are trained. Whether from lack of sunlight or other causes, Thompsons seem to be shy, uncertain bearers here and not so prolific as Sultanas. Some will be trellised on wires next season as in the Fresno district, perhaps with better results.

The prevailing grape of the district in new plantings and graftings is the Sultana, on account of its good regular bearing, easy drying, and resistance to mildew.

-hardy citrus trees



Thrifty citrus stock—including Washington navel and Valencia oranges, lemon and grape-fruit. Prime, sturdy, two-year-old budded stock—caliper ¾ inch and up. Straight stems. Trees in perfect condition—grown in exposed positions. Best citrus stock that proper soil conditions and scientific culture can produce.

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We have three citrus nurseries—Escondido, Anaheim and Los Angeles. If you are near these points we can save you money by shipping direct from nurseries. Take no chances with inferior trees — get healthy, robust stock. The Germain reputation for highest quality is back of every tree. Special prices on large shipments.

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FOR CALIFORNIA SOILS

WESTERN MEAT COMPANY

704 Townsend St. San Francisco

CHERRY TRAINING.

[Written for Pacific Rural Press.]

"In this valley everybody used to be afraid of pruning cherry trees on account of gumming, but we find that they do not gum so badly when cut in summer," says F. W. Duncombe of Beaumont.

But they must be formed while young, and Mr. Duncombe believes in selecting three limbs, as well as possible to avoid the basin which is so often formed in old cherry trees by growth of main limbs closing up to center so it holds rain, leaves, etc., to decay the trunk.

Two limbs are left at the second winter pruning on each of those left the year before; and a year later the number of framework limbs is again doubled as a general rule. Allow variations only to balance the tree, and save only the main limbs which will not crowd each other unduly when the tree is old.

No center limb is left, as the tree should be open. High color is one of the high points of Beaumont fruit; and it can be obtained best by a maximum of sunshine to the center of the tree. Where a moderate or large-sized center limb is cut out, it weakens the unions of the remaining limbs.

After the third winter pruning, only light topping back in summer is practiced. One limb, Mr. Duncombe pointed out had been cut back in 1914, had grown a long shoot last summer which was topped back and a new shoot had grown several inches. Practically every bud on the limb grew out ¼ to ½ inch long, and a number of fruit buds have developed just below last winter's cut. The light summer pruning stops endwise sap flow and forces it into the lateral buds, making them form strong fruit buds more abundantly.

A LANTERN WAX-HEATER.

The Placer County Farm Adviser prints in his monthly bulletin that a gallon of grade "D" asphaltum to which has been added one pound of rosin makes a good grafting wax. The rosin is added to prevent running during the hot weather. It is necessary only to heat the asphaltum to get it in the proper shape for application.

A. L. Teagarden of Mt. Vernon has an old lantern which he uses to melt the asphaltum. The globe is removed and a funnel-shaped cylinder put in its place. The lower end of the funnel fits over the wick and is of the same diameter as the bottom of the globe. The top end is about five inches in diameter and is open. A small can containing the asphaltum is set down in the funnel.

The pruning wounds of a large number of trees can be covered in a few hours with the aid of this heater. It could also be used to apply the mixture to grafts.

CREOLIN FOR CORN-EAR WORMS.

We have published a remedy found by Sam'l Haigh of San Jose effective against the corn-ear worm, by spraying the silk with creolin, one tablespoonful to a gallon of water. Mr. Haigh advises it only for garden use as he believes it would be too expensive to pay in field work.

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Put back into the ground at least a portion of the natural elements you take out of it.

Use Hauser's Organic Fertilizers.

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at less than cost of production. Late Valencias. Navel, Grape Fruit, Eureka Lemon, guaranteed quality name. Special inducement to Nurserymen. Mission Nurseries, adjoining old Mission Grounds, San Fernando, Cal. Phones, San Fernando. Red 1053; Los Angeles, Main 9341; Home 60288.

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AVOCADOS We have a splendid stock, both in field, and established in cans—Harmon, Rodolph, Meserve, Taft, Murrietta 2 Pound, Murietta Purple, Ganter Northrup, Chappelow, and the choice new Val de Flor. Write for prices on these, and anything else in Fruit or Ornamental Trees. We have the largest assortment in Southern California. Established 1876.

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Deciduous Fruit Trees

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We have a large surplus of Peach and Apricot Trees in the best and latest varieties. Also a large variety of Roses—two years old—field grown. Send for price list.

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C. & S. AXLE GREASE belongs to the white race—it is palest in color—made of paraffine and vegetable oils—lasts longer and lubricates better.

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who are ambitious and tired of working for others, and wish to acquire land of their own. Land is in Tulare County, between Pixley and Spa, mostly graded and checked, and has been in Rice last year, producing from 30 to 40 sacks per acre. Also fine for alfalfa, grain and fruit. Electric pumping plants, reservoirs, ditches and buildings. For rent on shares or sale on crop basis, on long time and easy terms.

Address: R. C. Fairall, Pixley, Cal., or R. Schiffmann, owner, Chamber of Commerce Building, Pasadena, Cal.

Ground Carbonate of **LIME** for Fertilizer. Send for Bulletin and Prices. Western Rock Products Co. Balboa Bldg., San Francisco.

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Write for prices, stating quantity and variety wanted.

W. A. T. STRATTON, Petaluma, Calif.

The Redlands Chamber of Commerce is pushing a movement to get a local sub-station of the Riverside Citrus Experiment Station. They are working also to get a farm adviser.

Ridding the Farm of Weeds.

[Editor's Note.—This is the second of a series of five articles on weed eradication that have been prepared by Mr. O. W. Newman, Ass't Sec'y State Commission of Horticulture and which will appear in coming issues of this paper.]

ERADICATION OF WATER GRASS.

This weed infests low marshy places, frequently becoming a pest in alfalfa fields where the drainage is not good. It is not apt to be serious when the conditions for the alfalfa and the stand of alfalfa are good. In rice this grass has become a very serious pest. Chas. E. Chambliss says:

"During the past three years this grass has taken complete possession of more than 2,000 acres of rice land in Sacramento valley, and is now present in alarming quantities on a considerable acreage, which will soon be rendered unprofitable for rice growing unless active steps are taken for its complete eradication or control."

The seed germinates at the same time as the rice and the plants grow to maturity in about sixty-five days. If this first crop is allowed to go to seed a second crop will develop before the rice is ready to harvest.

Control: To prevent the further spread of this grass **sow clean seed.** It would be well if this could be an absolute command to the prospective rice planter. Have seed tested by the county horticultural commissioner or the farm adviser, and if it is not clean seed do not buy it, or have it cleaned until it will pass the test.

When water grass is present prevent it from going to seed if possible. Individual plants produce as many as 40,000 seeds.

Plow, harrow and irrigate land in the fall. This will tend to germinate weed seeds and leave the land clean for spring sowing. In bad cases crop rotation will be necessary, using, if possible, some hoe crop. Summer fallowing is also practiced with good results.

Ditch banks should be kept clean as well as levees in the field. For cleaning the banks a strong solution of sodium arsenite should be used, 4 pounds to 100 gallons of water. It is better to purchase this material already made up, if possible, as it is very poisonous and hard on the eyes and skin.

Screens should be placed in the headgates, using a very fine mesh screen for the inner gates. They should be cleaned very frequently, so as not to obstruct the flow of the water.

The following warning to rice growers has been issued to aid in checking the spread of water grass, by the Rice Committee of the Sacramento Development Ass'n:

Look our for water grass and other dangerous weed pests.

If your land is free of these, keep them out.

If your land is slightly infested, eradicate at once.

If your land is badly infested, take drastic measures with two purposes in view—first to prevent their spread, second to eradicate or control them.

Use clean seed—this is most important.

Use clean water—screen it if necessary.

Pull the grass out of your fields. Cut the roots below the crown with a spade or other sharp tool.

If too thick to pull, grow cultivated crops and cultivate well. A later bulletin will tell how to do this.

If your land is foul, don't plant rice this year. You will get a light crop and a low price and your weed problem will be worse next year. Clean your land and clean it now. This will be most economical. Urge your neighbor to clean his at the same time.

Remember rice is a profitable crop—the most profitable that can be grown on much of the rice lands—and that it will continue profitable only if these weeds are kept under control.

Water grass seed in your rice means a lower price for your crop.

Water grass seed on your land means no rice in the near future.

Don't underestimate the importance of the rice weed problem. The profits of the industry depend upon its being solved, and it must be solved right away.

Don't imagine you can kill these weeds by growing barley. You can't. To kill them after they are well set is a big job and will cost money.

Don't be afraid to spend money when they first appear. This is the time to kill them, the time when eradication is easiest and cheapest.

Land owners leasing lands for rice culture should require lessees to keep fields, borders and ditches clear of these weeds. Put it in the lease and enforce it. Reserve the right to do it at the expense of the lessee—then do it at the right time if he does not.

Ditch companies should keep their ditches absolutely free of these weed pests. County roads must be kept clean.

The R. C. Merryman ranch of Exeter the past season averaged $1.96 f. o. b. packing house for their navels. This is the biggest year they have ever had. They sell through the Exchange, but pack on their own ranch.



KILMOL got him

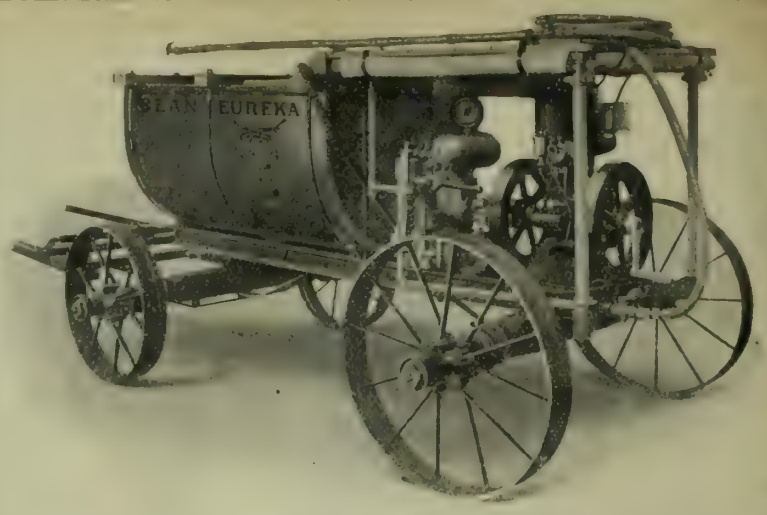
One squirrel or gopher can do more damage for his size than anything on four legs. But Kilmol gets 'em every time—no uncertainty—a *sure* way at last.

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Simply saturate a waste ball with Kilmol, put *one* ball in tunnel, ignite in from 3 to 5 minutes. The deadly gas does the rest—does it *quickly*—one treatment is enough. Results absolutely guaranteed or money refunded. Government, State and County officials use Kilmol. **Ask your local dealer** Write for information on squirrel and gopher eradication.

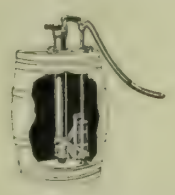
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This is the Bean Little Giant for spraying and whitewashing. Most powerful barrel pump on the market. Large air chamber and no stuffing box. Porcelain-lined Cylinders and Threadless Ball Valves.

that have made the Bean line famous. The book describes in detail the Bean Patented Pressure Regulator, Bean Threadless Ball Valves, Bean Porcelain-Cylinders, the Pump Without a Stuffing Box, Bean Underneath Suction, the Bean Refiller, the Bean Eccentrics, the Bean Rocking Bolster, Bean Direct-Connected Engine and Pump, Bean Interchangeable parts, and many other features almost as important.

A Complete Line

The Bean line includes sprayers of every size and for every purpose—from our handy little Bean Junior to our massive Double Giant. No matter what kind of crop you grow or how many acres you have, there's a Bean for you.

Check the Coupon, Sign Your Name and Address on the Margin, and Mail for Our New 1916 Catalog.

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211 West Julian Street
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BEAN SPRAY PUMP CO.
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Gentlemen: Send me your 1916 Catalog of Hand and Power Sprayers. I am specially interested in

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ELECTRIC APPLIANCES in the household not only add to the convenience of all members of the family, but they are economical and time-savers. **ELECTRIC APPLIANCES** include **CHAFING DISHES, COFFEE PERCOLATORS, VACUUM CLEANERS, ELECTRIC IRONS** and every other appliance that is needed in the modern home, not forgetting **ELECTRIC FANS.**

We carry these appliances in many of our branch offices, and will be glad to have you call and inspect them. Where we do not carry them we will be just as glad to give you our expert advice.

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Branches in all principal cities and towns of North-Central California.

Col. Irish Prefers a Farm to a Bank.

"No accounting for tastes"—as the old lady said when she kissed the cow. He will probably get some hot shot on this statement.

To the Editor: Much trouble is caused by prejudice and by misunderstanding. We farmers, being brethren in distress, should tote fair and strive to understand each other.

Your correspondent, Mr. Doane, spots me as a politician, because I proposed a solution of rural credits by a simple amendment to the law, by which reserve banks would be authorized to receive long-time, 4-per-cent farm mortgages as security from the auxiliary banks. This would use banking machinery already in action, requiring no added cost nor salaries. Were I a politician I would join Mr. Doane in asking the creation of new machinery, commissions and salaries.

Mr. McClellan demands paternal government care of the farmer, because the National banks are paternal pets of the Government. He says: "I wonder how many people ever stop to think about the example of paternalism that we have in all our towns, even the smaller ones, in the shape of our National banks, who deposit interest-bearing bonds with the U. S. Treasury and draw down 90 per cent in National bank notes which they can loan to the farmer at as high a rate of interest as they can get."

Well, now, let us start a National bank, capital $25,000. The incorporators have to pay gold for $25,000 worth of U. S. 2-per-cent bonds, and get back, Mr. McClellan says, 90 per cent in bank notes, or $22,500. These banks are liable under the usury laws of the state in which they are located. Their average rate of interest is 6 per cent.

Now let us see what our bank is going to get out of it. At 2 per cent, its bonds bring it $500 interest. Its $22,500 in notes at 6 per cent bring it $1350, a total on its investment of $1850.

Out of that it must pay rent, insurance, taxes, and salaries of a president, cashier, and bookkeeper, the least office force with which it can do business. To me it does not look like a tempting snap. I would rather take my chances as a farmer, with $25,000 invested in land and improvements, with all the risk of flood, drought, bugs and fungus.

Our farmers need long loans, at as low interest as is compatible with good business. All this could be secured through the reserve banking system.

We need also less taxation, for that burden already amounts to more than 4 per cent on our gross income. The tax-eaters naturally want rural loan commissions, more salaries, more office-holders, more taxes to eat. They are able readily to divert the attention of farmers from the annual increase in taxes, by talking about loan commissions, and state paternalism, to produce cheap money.

Mr. McClellan regrets that there is opposition when it is proposed that "the Government shall loan money," at a reasonable rate of interest. But the Government has no money of its own, never had any money, and never will have any money. It taxes the people to get money, which belongs to the people and not to the Government.

Oakland. **John P. Irish.**



Pull Out Stumps
With the Famous Hercules!
Triple-Power

Pull an acre or more of stumps a day. Pull any stump in 5 minutes or less. Don't have loafer land when it's so easy and cheap to *pull the stumps out!* Make 1000% profit by using the Hercules. $1281.00 the *first year* on 40 acres! $750.00 every year after. Let us *prove* it.

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112 24th St. Centerville, Iowa

WHAT CANNERS PAY FOR LABOR.

The wage board convened by the Industrial Welfare Commission of California has recommended minimum wage standards in the fruit and vegetable canning industry, which employs throughout the canning season some 10,000 women.

The wage board consisted of E. H. Kennedy, R. I. Bentley and A. G. Griffin, representing the employers; Isabel Schmitz, Erma Corey and Jennie Balistreri, representing the employes, and Katherine Philips Edson, of the Industrial Welfare Commission, who acted as chairman.

The wage board came to a unanimous agreement to recommend the following minimum rates:

	Per	Box of
Cutting	100 lbs.	40 lbs
Apricots	$0.225	$0.09
Pears	.375	.15
Peaches, cling	.225	.09
Peaches, free	.125	.05
Tomatoes, per 12 qts.		$0.03
Canning	Per dozen cans	
Fruit, No. 2½	$0.015	
Fruit, No. 10	.036	
Tomatoes, No. 2½	.01	
Tomatoes, No. 10	.024	

The new minimum rate on apricots will mean an increase of from 1 to 4 cents, per box of 40 pounds, to the women employed in 43 per cent of the canneries packing this fruit. Nearly one-fifth of the canneries packing free peaches will pay 1 cent more per box of 40 pounds, while 58 per cent of the cling peach canneries will put a wage increase in force. There will be increases in 36 per cent of the pear canneries, the same running from 1 to 3 cents per box. It must be stated, however, that a large number of factories heretofore have paid the newly established minimum.

An 800 per cent increase in the use of lemons for hair wash resulted in one ward from Exchange advertising in a local paper of an Illinois town last summer.

Not a "Mechanical Horse"

The first automobiles were spoken of as "horseless carriages." When they began to supplement horses instead of replace them—to do things impossible for horses to do—this term became obsolete.

The Yuba BALL TREAD tractor does the work of horses and it does things impossible for horses to do.

The orchardist uses it to pull tools that horses are unable to handle. He uses the Yuba to handle the heavy double disc cultivator—which at one operation does the work of the horse-drawn weed cutter, tooth harrow, the light single disc and the clod masher—and he gets close to the trees!

The grain farmer works his Yuba day and night, plows deeper, does his work when the land is in the right condition, and is less dependent on the weather.

Sandy roads or muddy fords are easily crossed by the freighter.

The Yuba BALL TREAD replaces 12 or 18 horses—does more and it achieves results impossible with horses. The catalogue tells why. Send for it.

THE YUBA BALL TREAD TRACTOR

THE YUBA CONSTRUCTION CO.
Department R.P 8
433 California Street
San Francisco, California

Gentlemen:
Kindly send me a copy of your booklet "The Yuba Ball Tread Tractor."

Name .....
P. O. Box.....Town .....
State .....
Size of Farm .....acres.
CHECK CROP RAISED
...Fruit....Grapes
...Grain ..Rice
.....Alfalfa
....Hops
..Hay



The Yuba Construction Company
433 California Street
San Francisco, Calif.

THINGS TO KNOW ABOUT SUDAN GRASS.

[Written for Pacific Rural Press.]

Here are a list of questions and the answers to same about Sudan grass as compiled and sent to us by George C. Johnson, which will serve to enlighten many of our readers on this interesting new fodder crop.

How much seed to the acre when dry farmed? Ans.: two and a half pounds, sowed in rows with an Egyptian corn plate in the planter. How much seed to the acre on irrigated land? Ans.: five pounds drilled or sown broadcast. Will it grow more than one year? Ans.: No; it is an annual. Will it stand light frost? Ans.: Yes. Will it stand alkali? Ans.: Yes; it is harder to get a stand, but when started does not mind alkali, growing very rank. How long after seed is planted can it be cut? Ans.: In about 60 days, then every 30 days if irrigated. How much hay will it yield to the acre per season? Ans.: Ten tons or over on good land with water. What is its feeding value? Ans.: Moisture 4.46 per cent, ash 7.56 per cent, fat 1.53 per cent, carbohydrates 6.95 per cent, crude fiber 32.34 per cent, nitrogen free extract 47.17 per cent; Nutritive ratio, 1:7.3. Sudan grass has more than twice the feeding value of timothy hay per acre on account of the larger yield. Will it cross with other plants? Ans.: Yes, it will cross with all saccharine and non-saccharine sorghums, but its worst fault is that it will cross with Johnson grass and then becomes a pest to anyone getting such seed. Many acres have been ruined in this manner in Texas. Can it be put in silo? Ans.: Yes, alone or mixed with alfalfa makes a better balance.

The Southern Pacific Co. has announced a reduction of 25 cents a hundred pounds on nursery and florists' stock from California points to the East.

CALIFORNIA'S ETTERSBURG STRAWBERRY.

(Continued from page 281.)

to three times, but if you will spell it backward, you will readily agree with me that it has a much closer relation to conceit.

Trebla is that wonderful evergreen and everbearing strawberry that in its initial test produced at the rate of three quarts of husked berries to each and every plant, or at the rate of 25,000 quarts per acre. Knowing the conditions under which this record was made, in fairness to it, I feel that I am not over-estimating its ability when I say it is capable of yielding 40,000 quarts or twenty tons of berries per acre. More than this, it is a variety so distinct that it is a radical breaking away in strawberry forms with striking possibilities for the plant breeder.

Being a Good Stumbler.—When you look back over the ancestry of Trebla, and note the general worthless character of its ancestors, you want to call this man Etter a genius to so twist Nature to give up a progressive secret to the horticultural world. But remember what I said about shallow-pated, would-be geniuses, groping around with a poor light, seeking in dark places what is laying in the open before them. Truly, I went through some dark and unusual ways to get an evergreen and everbearing strawberry and thus crystallize my predictions. But while I was thus engaged, I crossed Chesapeake with No. 20 and produced a more thorough everbearing variety, but not with all the other qualities of Trebla.

The moral to this story is: It is better to be a good stumbler into something good than to be a real genius always trying to find a way to "break in" and never getting anywhere.

Some Good Stumbling Blocks.—To continue the story, if you would like to know what I have stumbled into, I will say it seems to me that I had stumbled into everything. When I say everything I am speaking with inside information, with a knowledge of much I have not disclosed to the world. Again, I am such a poor prophet that to protect myself, no matter what turns up, I can say: "I knew it was coming." Some of this, as one may gather from my story, is so close to the surface that it is in the reach of anyone who is willing to grow a few seedlings. By this, of course, I mean if he strikes a lucky number. Again, the roundabout, crooked, unreasonable, idiotic plays one can make in combination, and still get surprising results, makes one wonder where it will eventually wind up. It literally means that one does not need very much brains if only he be persistent in crossing. And if I may offer a real tip to the beginner, look back over the ancestry of Trebla, dismiss your reason, and go ahead full speed.

How to Cross Strawberries.—In hybridizing strawberry blossoms, the process is simplicity itself. You may need a penknife, but not necessarily You will need a piece of tissue paper two or three inches square which is used as a hood to hold the male blossom in place over the newly opened female blossom. The stem of the plucked male blossom is inserted in a hole through the center of the tissue paper, the blossom placed over the female blossom. Now fold the paper back and tie with a small piece of cord. This is all there is to it for practice work. As the male blossom withers, the pollen sacks burst and the dust is brought into contact with the pistils. By using a pistillate female parent, all that is necessary is to plant side by side with a prospective male parent, and insects will do the rest. This, of course, is not scientific; but it is practical.

Observation of New Varieties.—As time goes on, I am continually learning something new about these hybrid strawberries. Those who write and tell me their experience in the cultivation of them make it possible for me to give this information to the public. Whether good or bad, it is all acceptable. Various correspondents corroborate my admonishment about putting these hardy, half-wild plants in too rich ground where they all go to foliage. Some are unwilling to wait until the second season for berries. In several cases where too good treatment failed to give results worth while, neglect of the beds gave a big crop the following season. Where they have been put on moderately fertile to poor land, good results have been the rule. On moist, rich land leaf-spot is always worse, No. 121 being particularly susceptible to it. Several of my newer varieties are almost, if not quite, immune to leaf-spot. As regards hardiness against colds, they seem as able to resist cold as are the ordinary varieties.

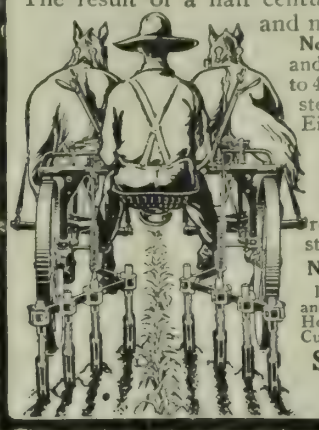
What Cultivation May Do.—We must live and learn, as the saying is, but sometimes our desire to get results by careful methods stands between us and our knowledge. For years I believed that reasonably good cultivation would give best results. Now, I am forced to believe that with varieties such as No. 80, 84, 89, 112, and 121, where the plants run wild and cover the ground, we get more and better berries than where we have been in the habit of giving spring cultivation. Where the plants had not been disturbed for three years, having taken possession of the ground, there was a perfect carpet of berries. They were of fine size, perfectly free from dirt, better color, flavor, and general quality than from cultivated plants. Stranger still was the behavior of those uncultivated plants when we had a three days' spell of 100 degrees in the shade. The cultivated plants of the same varieties suffered severely, while the uncultivated ones suffered not at all. In this case I will say no irrigation was practiced. All this is very significant because it means that these new varieties are so hardy that here, where originated, they will grow wild where the regular varieties will not succeed even with good cultivation.

Hardy Against Rain and Frost.—But this is not their only adaptation to our needs. A man writing from Turlock says that No. 80 will stand with very little injury rains that

Planet Jr. Cultivators

have no equal anywhere

They produce the best crops and biggest profits wherever used. The result of a half century's experience of a practical farmer and manufacturer. Fully guaranteed.



No. 76 Planet Jr Riding Cultivator plows, hills and cultivates corn, potatoes or similar crops 28 to 48 inches apart. Specially hardened cultivator steels. Pin-break or spring-trip standards. Eight styles—*lower prices than ever before.*

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P. & O. No. 40 Combined Corn and Bean Planter



Furnished with open center or solid concave tires.

The Combined Corn and Bean Planter here illustrated is a machine built by one of the largest manufacturers of planters in the world, particularly to meet the requirements of the Pacific Coast trade.

It is not a made-over machine but is built from the ground up for Coast needs. This fact, together with the reputation of the P. & O. Company for building tools right in every detail, insures absolute satisfaction to every user of this planter.

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FEATURES:

Equipped with a full set of plates for planting any of the different kinds of corn or beans commonly planted in California, including Egyptian and Kaffir corn.

Adjustable to any width rows from 28 to 44 inch. The check rower machine is adjustable for checking rows 3 ft. 4 in., 3 ft. 6 in., and 3 ft. 8 in.

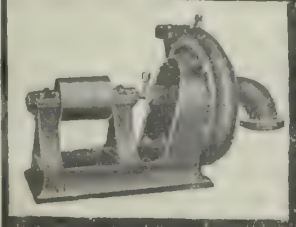
Accurate planting insured by the sight feed. Sight feed has a large opening, and the seed is visible at all times to the operator as it drops from the hopper to the upper valve.

Quick, detachable runners held on the shank by one bolt. Easily removed for sharpening.

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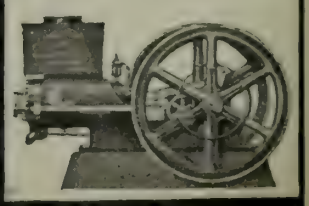
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will ruin ordinary varieties while ripening. From New Meadows, Idaho, I have it that during the blossoming season, Ettersburg strawberries will stand rain, hail, and frost and still make a crop where ordinary varieties were ruined. My observations on No. 89 in particular, are that it will stand frosts without injury while in blossom that actually destroyed a large percentage of the blossoms on some of the other varieties. This hardiness of blossom alone is a mighty big factor in the strawberry world.

In Hot Valleys.—Rose Ettersburg has proved to be well adapted to the San Joaquin Valley. It is a variety that requires considerable heat to develop its best quality. From the hot valleys in Arizona, good reports come from Ettersburg No. 80, where it is superseding the Arizona Everbearing as a better berry in several respects. The Arizona Everbearing is a one-crop berry here just like No. 80. It is large, but rather soft and of low flavor. This variety and the Minneola are both of Chiloensis stock, and of all the hundred or so of regular varieties I have here, they are the only two I would so consider. The foliage, blossoms, runners, and fruit all show the Chiloensis type.

The New York Agricultural Experiment Station, at Geneva, reports success with No. 80, 84, 89, and 112. Maryland says No. 80 is good. Good reports also come from Michigan. As soon as eastern growers appreciate the fact that their hybrid buck strawberries will grow on land too poor to grow ordinary varieties, it is highly probable that they will become popular because they will overcome some of their most trying places.

Shipping Characters. — The shipping qualities of such varieties as No. 80, 89, and 121, and of some of the newer varieties, are remarkable. I have shipped them from Ettersburg to Eureka, a distance of 82 miles, over rough mountain roads 64 miles, and they arrived in perfect condition. They were neither carefully picked or packed in special containers, or transported in light springed wagons. They were carelessly picked, even to overripe berries, packed in 5 to 7 pound boxes, 4 to 6 inches deep, and for over half the distance were hauled on what was practically a dead-axle wagon, the vehicle being a large platform spring wagon without a ballast. Some of these berries thus hauled 34 miles were kept in good condition for four days after arrival.

Credit must be given to the extra shipping quality of berries grown here without irrigation, but we must not forget that a berry of solid structure, of such specific gravity that it will almost sink in water, must in the very nature of things have merit peculiar to its class. Again we must give credit that a berry, such as these beach hybrids, having just about double the days of life in condition after they become red, must be of special merit as shipping stock.

It has been laid down by certain authorities that a shipping strawberry must have prominent seeds to protect its surface from abrasion when packed. However true this may be with ordinary varieties, my opinion is that it will not hold good with what is now in existence among my hybrids. Most varieties of strawberries have very delicate and fragile skins that are exceedingly easily broken. Then I have noticed among some hybrids that even though they may have sunken seeds, they will stand an amount of banging around and scarcely bleed, that would put the ordinary variety into a shapeless mass.

Will There be a Crisp Strawberry?—A variety may have fruit that is soft and loosely constructed, or it may be soft, but filled to the brim with juice. In either case, the juice of the berry is held in cells, and it is the toughness of these cell coverings that makes the berry resist handling. Some of the ordinary sorts have much fiber that naturally strengthens the framework of the berry. Varieties like No. 80, 89 and 121 have practically no open core as is characteristic of the ordinary varieties, but what might aptly be termed a cling core analogous to a cling peach. Like a cling peach, as compared to a freestone, they also have some fiber, but the whole structure is more meaty and filled in solid. A fruit of this type, with tough cell skins (if I may be allowed to use such a term), has every advantage in the way of a fruit to stand handling.

It is the lack of fiber, and the thoroughly filled and closely compacted cells, full of juice, that makes the crisp apple. I believe that we shall attain the same thing in a very marked degree in strawberries. I don't predict this as a prophet, or guess at it trying to be a prophet, but I have seen enough to believe that a crisp strawberry is attainable.

[To be concluded next week.]





John Deere Plows for Light Tractors

For Orchard and Vineyard

Practical—work with any standard tractor. One-man outfits—controlled by man on the tractor.

No levers—one reason why these plows work so successfully. Plows leveled and depth regulated by screw device. Can be run close to trees and vines without injuring branches.

High and Level Lift—Pull the rope and all bottoms raise high and level. Another pull lets them down.

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All bottoms raise high like a double bail, high lift horse plow. You know from experience what this means. Plows do not clog or gather trash on the turn.

Extra wide and semi-floating front truck.

Equipped with either three or four famous John Deere 12-inch bottoms with Quick Detachable Shares—the shares that can be taken off and put on in one-fifth the time it takes to change bolted shares.

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MADE especially for use in the West. Work successfully in every soil where a disc plow should be used.

Plow anywhere from five to twelve inches deep.

One-man outfits—controlled by man on the tractor. Work with any standard tractor.

Can be used either for field or orchard work simply by changing the land axle.

All levers down close to plow when at work—plow can be operated close to trees and under limbs without injuring them.

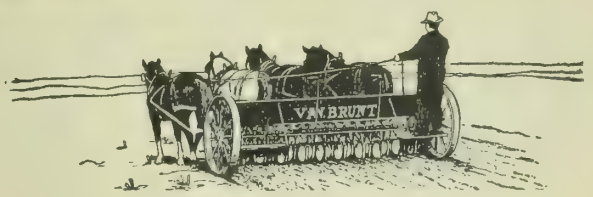
Easily transported—special lever at the rear for lifting discs high and level.

Over fifteen inches clearance under beam; twenty inches between discs.

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Can be reduced to four discs by taking off one intermediate section and telescoping connecting rods.

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THEY plant any small seed, alfalfa to bearded oats, peas or beans. Quantity per acre easily regulated merely by shifting feed gauge levers.

All the ground planted without wasting seed. The Van Brunt adjustable gate force feed and special agitator in the hopper compel seed to leave hopper in even, continuous streams.

An even stand of grain is certain. Pressure springs compel discs to make furrows of equal depth and seed is protected until it reaches bottom of furrow. Single or double discs. Write for free booklets.



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SYRACUSE chilled shares fit perfectly—extra shares go on easily. Share draws up snugly to its place—a smooth joint formed always.

Syracuse 601 Series, wood beam, sloping landside plows are superior for general purpose work in light soils—the 16 Series, wood beam, with side shifting clevis, for hillside work.

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John Deere, Moline, Illinois

General Agricultural Review.

CITRUS AND SEMI-TROPICAL.

The Corona Lemon Co. has been taking out its frost pots emptying them in a specially economical way.

Co-operative citrus distribution to the jobbers last year cost 1.2 per cent of the gross sales. The year before, the cost was 1.4 per cent.

Over 50,000 grapefruit trees were planted in Imperial county last year, according to horticultural commissioner F. W. Waite.

A 10-year grapefruit tree about 10 feet tall was washed out on Harry Cook's orchard near Redlands. One of its big roots was over 15 feet long.

The California Fruit Growers' Exchange sells to about 3,000 jobbers who sell to about 300,000 retailers who sell to nearly 100,000,000 people.

The National Orange Co. is irrigating several hundred acres of oranges on steep soil with surface irrigation pipe discharging into basins between the trees.

No orange in the world equals the Valencia Late in keeping quality on or off the tree and in seducing money out of the other fellow's pocket, according to C. C. Chapman of Fullerton.

Two cars of oranges were shipped last week to Salina, Kansas, by Bishop and Merryfield of High Grove. Orders were received and prices named by wire while the fruit was still on the trees.

The newly organized Strathmore Fruit Growers' Association elected the following officers: T. H. Radley, president; S. A. Warson, vice-president; J. Leon Linden, secretary; A. W. Shaw, Chas. F. Stegemeier, L. A. Jones, and Geo. G. Cole, directors. This new association will market through the Tulare County Citrus Fruit Exchange, handling about 100 cars next season.

The following committee has been named by State Market Director Harris Weinstock, to confer with the State officials on a system of State control of the citrus output: W. E. Sproutt, Sec'y and Manager of the Tulare County Citrus Fruit Exchange; P. F. Goswell, El Monte; A. Gregory, Redlands; C. C. Chapman, Fullerton; C. C. Teague, Santa Paula, E. M. Lyon, Redlands; P. J. Dreher, Pomona.

GRAIN AND FIELD CROPS.

E. E. Bush of Corcoran contemplates planting about 600 acres to rice on his land there.

Large shipments of flour and wheat from the Middle West to California are reported.

H. W. and W. E. Meek Co. shipped the first asparagus from Antioch on Feb. 23.

Green pea shipments by the carload are said to have commenced from Brawley.

About four carloads of lettuce are ready for shipment from Heber, Imperial county. Part of this will be shipped East.

The acreage sown to grain and alfalfa in the Livingston district this year is reported to be considerably larger than usual.

It is estimated that there are over 8000 acres of land seeded to sugar beets in the Visalia district this season, which is over 1000 acres more than last year.

It is expected that the crop of new potatoes in the lowland districts will be very late this year on account of excessive moisture in the ground preventing planting.

Three hundred bales of Mendocino hops belonging to J. A. Ford, Kirk Ford, and J. Wooley were purchased last week by Geo. Proctor, Santa Rosa hop dealer, at 12 cents.

The Irvine Ranch in Orange county will have 2,300 acres of lima beans again next year. Perhaps because they are not irrigated, the yield on this ranch is only 10 sacks per acre.

The sugar beet factory at Corcoran, which has not been in operation for several years, will open this season. The new management will endeavor to contract for 50,000 acres of beets.

Milton Wasserman, who is an extensive hop grower of Sonoma county, is planting prunes between the hop rows on 50 acres of his land. He expects within the next three or four years to grub the hops out.

The February report of the International Institute of Agriculture made up from data supplied by each country, shows that war needs have increased the crop area of the world 7 3-10 per cent.

H. K. Wiley, alfalfa seed expert of Springfield, Idaho, recently visited the Orland project with a view to investigating conditions there for the purpose of raising alfalfa seed for market.

The Rice Growers' Association of Yolo county held their second meeting on Feb. 26, with G. H. Hecke as chief speaker of the day. One of the purposes of this association will be to get lower freight rates for this year's crop.

State Market Director Harris Weinstock has called a meeting of all delta farmers to be held at the Palace Hotel, San Francisco, on March 9, for the purpose of discussing ways and means of standardizing and marketing delta products, especially vegetables.

Ernest Rapp of the Laramie Broom Corn Co. of Ogden, Utah, was recently in the Imperial Valley investigating the possibilities of raising broom corn in the Valley. He declared that the facilities there for growing that product were of the best.

At the close of the Exposition the Sperry Flour Co. of Stockton purchased 26 lots of wheat placed on exhibition by Australia and New Zealand and planted them on a 25-acre tract near Stockton. Before doing so they were tested in the Sperry Flour laboratory to determine their worth in making flour.

The Sherman Institute Ranch under Supt. J. R. McClellan of Arlington nearly filled two silos of 90-tons capacity each from 20 acres of Indian corn last year. He expects to fill the silos next season from considerably less than 20 acres of King Phillip flint corn, seed of which is already secured.

The San Joaquin Fruit Co. of Orange county has used 1400 tons of lima straw in the past two years as mulch on 60 acres of oranges and lemons. They will apply 1000 tons next year on other acres at the rate of 5 to 8 tons and will continue the practice till their 400 acres are so treated, then repeat every three years.

DECIDUOUS FRUITS.

It is reported that more young fruit trees are being planted around the Chico district this spring than ever before.

Apricot prices are pretty sure to be higher next season than they were last, according to Manager W. S. Mudd of the Hemet Canning Co.

Hemet apricots were in full bloom Feb. 22. They indicate the lightest crop in years, according to president E. O. Eggen of the Hemet Cured Fruit Association.

"We will certainly summer prune our apricots hereafter," say A. E. Goodrich and Son of Hemet who have been experimenting on a large scale for several years.

Efforts are being made to combine into a Southern California organization the Cured Fruit Associations of Ventura, Santa Ana, Hemet, Banning, and Elsinore.

Hemet Cured Fruit Association sales this year totaled about $80,000 according to Manager C. G. Hamilton. The last 90 tons of apricots have just been shipped out on one order.

A meeting of the Reedley peach growers was held last week in the interest in the newly organized Cali-



Cuts Operating Costs

THE Rumely OilPull has firmly established itself on the Coast and has successfully met Coast conditions. It is a cost cutter from the start, burning "Stove Tops" and the cheapest distillates *at all loads, under all conditions—all the time.*

As one Coast owner writes in, "We have three different tractors and find your Rumely by far the cheapest to operate. This is due to your ideal system of building a tractor, and your carburetor which handles low gravity, cheap oil."

Then, the strong construction of the OilPull, and the high quality throughout, naturally cut down upkeep expenses.

Notice that on the OilPull the air intake on the carburetor extends high up out of the dust. The oiling facilities are particularly efficient and all working parts are well protected.

Oil cooling is another advantage—no bother with cooling water and no danger of radiator freezing.

As a threshing engine and for all belt work the OilPull is as efficient as on the draw-bar. It is throttle governed—there is no fuel waste and the power is steady and uniform. The temperature of the engine is so regulated that it will run equally well on full load, light load or on no load There is, of course, absolute freedom from sparks.

You will find that the OilPull will handle all your power jobs, draw-bar or belt, and save money at each operation. Two sizes, 15-30 and 30-60 horsepower.

Ask our nearest branch for an OilPull catalog?

Advance-Rumely lines include Rumely traction plows, the light weight GasPull tractor and the new All Purpose small farm tractor, threshers, steam engines, hullers and huskers—all dependable machines and backed by Advance-Rumely service.

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Beekeepers' Supplies Everything for the Honey-Bee
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fornia Peach Growers' Association. About $1320 in stock subscriptions was secured.

The Hemet-San Jacinto Growers' Association expects to begin the erection of a $40,000 cannery in March to handle olives, honey, peaches, apricots, etc. Their present temporary plant will be dismantled.

The Ehmann Olive Co. is planning to set out 24,000 fruit trees on 200 acres in Happy Valley, Shasta county. Six thousand olive trees will be planted with rows of peaches and plums between them.

Growers of the Northwest recently organized the Fruit Growers' Agency with headquarters at Spokane, Wash. This organization plan is built upon a uniform contract in which the grower is permitted to set the price for which his fruit may be sold.

Fowler peach men met last week and were addressed by Pres. Glass, Vice-President Niswander, and Fred Nelson. Every man at the meeting had taken stock before at the rate of $20 an acre and one man subscribed as high as $100 an acre. Additional subscriptions received amounted to $1610.

Peach growers of the Sanger district held a meeting on Feb. 24, at which Pres. W. Glass and Manager Sunderland spoke for the Association. Most of the farmers attending this meeting had already signed up and subscribed for stock also, but at the close of the meeting $1000 more had been added to the fund.

Kenneth McKay, manager of the Hood River Fruit Growers' Exchange, Hood River, Ore., was a recent visitor in Watsonville and while there urged that the Watsonville Apple Distributors affiliate themselves with the Northwest Fruit Growers' Exchange, pointing out the many advantages of such a union.

The newly-organized Apple Growers Auxiliary of the Humboldt County Farm Bureau recently met and elected a Board of Directors consisting of: M. F. Gardner of Petrolia; Jas. Hubbard of Shiveley; Geo. Wrigley of Elk Grove and Pres. Geo. W. Cummings of Shiveley and Secretary Robt. L. Werner. Growers from Arcata, Bayside, Shiveley, Mattole, Rohnerville, and Elk River have signed up.

OLIVES AND NUTS.

M. L. Requa of Oakland is planting 200 acres to almonds in the Loam Ridge tract near Orland.

Orange Cove olive growers have started the movement for the formation of a local olive growers' association and the erection of a local pickling plant.

The Tulare cannery will continue operations for some time longer, having on hand 60 tons of olives yet to be packed. The pack so far has been 1300 boxes or about 26 tons.

J. H. Wheeler of Napa county has been advised by Exposition authorities that the jury of awards had given him one of the highest medals of honor for the walnuts he exhibited.

Three almond trees three years old and six inches in diameter, having been planted as two-year stock, bore three pounds of nuts each last year on the Devore ranch in San Bernardino county.

Olive growers of the Wyandotte section of Butte county met recently and organized the Wyandotte Olive Growers' Association. Over 50 per cent of the acreage in olives joined the association at the first meeting and it is believed that practically the whole acreage will join.

MISCELLANEOUS.

A National Farmers' Association designed to bring together all farmers in the United States was formed at Kansas City on Feb. 22.

March 6 is the date tentatively set for the organization meeting to be held in Humboldt county for the purpose of giving Eureka a farm center.

The Southern Pacific bought the California Development Co. for $3,875,000 to turn over to the people of Imperial Irrigation District, taking District bonds in payment.

Since the Imperial Valley levee showed its strength, Los Angeles financiers have been offering money on farm loans there at 7 per cent interest, lower than ever before.

Shade trees will be planted along the State Highway from Bakersfield to Tejon for a distance of 19 miles in an effort to make that one of the most attractive shaded boulevards in California.

The annual meeting of the Riverside County Beekeepers was held recently, electing the following officers: B. L. Powell, president; W. C. Hoare, vice-president; R. J. Brown, secretary and treasurer.

The establishment of a Contra Costa farmers' market in Oakland is under consideration by the growers of that county, who desire to try their hand at marketing their produce without the aid of middlemen.

The California Nursery at Niles has presented the city of Oakland with an exact duplicate of the 100 species of conifers, or cone-bearing trees, which were planted in front of the Hoo Hoo building at the Exposition.

The warm weather of last week has made a crust on top of the ground and the farmers in some sections of Fresno county are rushing their cultivating. The ground is not dry by any means, but this crust on top is not good. C. R. Stockdale is not worrying a bit. He takes his rotating harrow and harrows all his land before starting to plow, leaving the surface of his soil nicely pulverized, preventing it from cracking, and drying out; also giving him more time for plowing. The soil is in better condition when he is finished because none of it is plowed too early and none too late.



The Salof Self-Setting Gopher Trap.

Only trap having free passage Will entirely rid your place of gophers in one season. Will catch all sizes. If you want a trap that will give results, try this one. If your dealer can't supply you, will be sent postpaid for 50c; 3 traps, $1.00. Circular free. A. SALOF & CO., 3914C 39th Ave., Oakland, Cal.



CHUBBUCK'S IDEAL GOPHER TRAP

Larger than runway; jaws pull rodent in; catches large or small gopher and holds it. Farmers say it's worth dozen other makes. Big sales. **Price 50c.** If not at your dealer's will send it to you postpaid; 2 for 95c; 6 for $2.70; 12 for $5.10. Money back if you are not satisfied. Free circulars. E. J. Chubbuck Co., Dept. B San Francisco, Cal.



As your mileage mounts higher and higher—7,000, 8,000, 10,000 and even 20,000 miles in many cases—you will more fully appreciate our slogan, "No load too Savage for Savage Tires."

And Savage tires cost less than most of the so-called standard makes. You buy them direct from factory through employed distributors. The middleman's usual profit is saved, and we give it to you in higher quality—extra miles. Adjustments are made on the basis of 4,500 miles.

It is easy to obtain Savage Tires. You can buy them of distributors near you or mail your order to our nearest sales branch. Either way the price is the same.

Ask for the address of your Distributor and for our interesting Tire Book No. 1318. It describes Savage Tires and Grafinite Tubes and explains our money-saving sales plan.

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BRANCH STORES:

San Francisco, 1125-27-29 Van Ness Avenue
Los Angeles, - 700 W. 7th Street
San Diego, - - 936 2nd Street

SOUTHERN PACIFIC
SUNSET OGDEN & SHASTA ROUTES
First in Safety

CHOICE OF Four Routes EAST

NEW ORLEANS—OGDEN—PORTLAND—EL PASO

"SUNSET ROUTE" — Along the Mission Trail and through the Dixieland of Song and Story. Two Daily Trains to New Orleans via Los Angeles, Tucson, El Paso, San Antonio and Houston. Connecting with Southern Pacific Steamers to New York.

"OGDEN ROUTE" — Across the Sierras and over the Great Salt Lake Cutoff. Four Daily Trains to Chicago via Ogden and Omaha; or via Denver and Kansas City to St. Louis. Shortest and Quickest Way East.

"SHASTA ROUTE" — Skirting majestic Mount Shasta and crossing the Siskiyous. Four Daily Trains to Portland, Tacoma and Seattle—through Oregon and the Pacific Northwest.

"EL PASO ROUTE" — The Golden State Route to the Southwest. Two Daily Trains to Chicago and St. Louis via Los Angeles, Tucson, El Paso and Kansas City.

Southern Pacific Service is the Standard.

Best Dining Car in America.

Oil Burning Engines—No Cinders, No Smudge, No Annoying Smoke.

Awarded Grand Prize for Railway Track, Equipment, Motive Power and Safety-First Appliances, San Francisco Exposition 1915.

For Fares and Train Service, Ask Southern Pacific Agents.

Mechanical Power on the Farm.

GAS ENGINE IGNITION.

[Written for Pacific Rural Press by W. H. Sanders, Yuba City.]

In recent issues many of your subscribers have discussed starting a gas engine without the aid of batteries, or direct from the magneto.

Now this is a common practice with most standard engines put out now days if purchaser so desires, and is done by using a high tension magneto, many makes of which give a spark at only a half turn, and there is no need of spinning the engine or turning it over several times as your subscriber from Palermo does, and these high tension magnetos are usually geared to crankshaft and thus avoid all friction or belt-drive troubles. This latter relates to one-cylinder engines.

Should your subscribers now using batteries desire to convert their engines to a batteryless engine they could do so by getting any of the standard high-tension magnetos installed. Say, for instance, the Bosch high-tension magneto could be installed on any common one-cylinder engine or engines with more than one cylinder.

If the make and break spark is used it would be necessary to change the jump spark, and the make and break device taken off, which would be done by your dealer if he is thoroughly acquainted with his business.

If the jump spark is in use the change should not take long.

This does not relate to small engines which can be spun or turned over several times with ease, but relates to any size in common use, as a half-turn of the fly-wheel will give a spark sufficient to start without difficulty.

This change would in common cases cost downwards of $50 according to magneto selected.

Where dry batteries are used, and engines are in use a long period of time without stopping, it is advisable to use a double set of batteries and a double switch, thus using one set for an hour and switching over to the other set, as resting will often recuperate a set of batteries so they will be much stronger and last longer. This would not be advisable where a low-tension magneto is used as the batteries are only used to start from.

In buying batteries be careful and do not accept any with a broken face or any that have been sweating, or in other words, such as have an appearance of salt on them, also do not keep the battery tester on the tying posts of a cell or battery longer than is necessary to find out its strength, as it will have a tendency in some cases to cause a short circuit and be harmful to the battery.

It is also a very good practice to keep all terminals clean from rust and grease, and keep the ends of insulated wires scraped clean. This can be done when changes are made from old batteries to new ones.

Above all things keep the batteries dry. With a low tension magneto where the batteries are only used to start from, a set of batteries will last a long time, but the service might not be as satisfactory as with the high tension magneto, as the batteries will have to be used to start from, and without them a low-tension magneto would be practically useless unless you had a very small engine which could be spun at a very rapid rate of speed, say possible 200 r. p. m.

The batteries with a low tension magneto will gradually get weak, just the same as a set left on a shelf in a hardware store or anywhere else for a long time, as there is a mechanical action going on in the dry cell to some extent even if not in use, though not to any great extent; it always has a tendency to weaken more or less.

MATERIAL SCARCE—TOOLS HIGH.

"On account of the war" is becoming a tiresome answer to those consumers who are almost daily asking why the price of this or that has been so materially increased in the past year and a half. That the buyer of farm machinery will also face a general increase in price for his implements seems certain from the following extracts of a letter received by a California implement manufacturer from the East, who has to buy large quantities of raw material:

"The price on steel bars, plates, pig iron and sheets have now advanced to prices averaging 50 per cent greater than they were in June, 1915. Proportionate increases are also in effect on such items as soft center and solid steel for cultivator shovels, plows, harrow discs, malleable castings, bolts, springs, etc. Lumber of all kinds has advanced and paint has practically increased 100 per cent. Leather belting, tool steel, babbitt steel, wire nails, and fuel oil are also advanced 20 to 60 per cent.

"Ths will mean an advance in price on all farm tools of approximately $.75 to $1.00 a hundred pounds and possibly more. The steel mills reports sufficient orders on hand now to run their mills for nine months without taking another order, and the condition is getting worse all of the time.

"It is, of course, very uncertain just what will be done in time for another year's business commencing July 1, but it will undoubtedly be to your interest and the interest of your customers to keep them fully advised as to this condition, so that they will be prepared for the heavy advance next year and make their plans accordingly. There will be a shortage of farm tools for spring shipment due to the great difficulty in getting shipments of raw material at the present time, even on orders that have been placed many months ago."

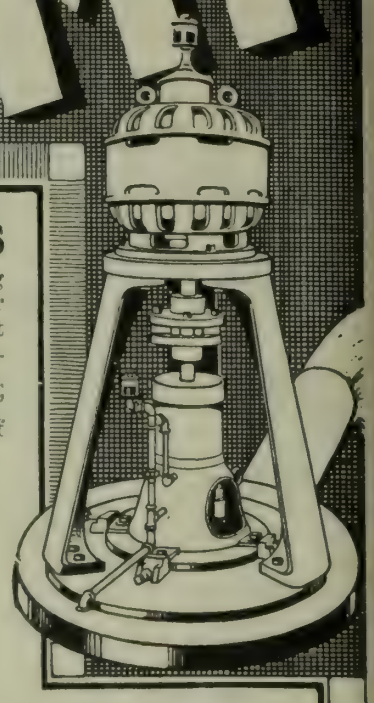
CHOPS PRUNINGS IN ORCHARD.

[Written for Pacific Rural Press.]

Tree prunings are chopped up in the orchard for the San Joaquin Fruit Co. of Orange county. A Ross Little Giant feed cutter is mounted on two 4x6's laid edgewise as a bed on wagon wheels. It is set just in front of the rear wheels. A heavy sheet-iron hopper holds the prunings as they are pitched onto the wagon to be run through the feed cutter. Over the front wheels is a Root and Vanderwoort 5 h.p. gas engine which runs the cutter by belt.

The ranch includes 600 acres of walnuts and 400 of oranges and lemons.

Layne & Bowler PUMP



Preparedness

—this one word is attracting more attention than any other national question of today. But laying aside the subject of national or military Preparedness, let's "get down to brass tacks" and consider the question of your individual Preparedness in providing ample crop protection.

Here in the West, the success of crops depends upon an absolutely reliable water supply. Every rancher knows this to be an indisputable fact. You can't be thoroughly prepared to raise successful crops, you can't be assured of the most profitable crops, unless you install a pumping system that can give reliable, unfailing service year in and year out; in addition a pump that will positively produce the cheapest water.

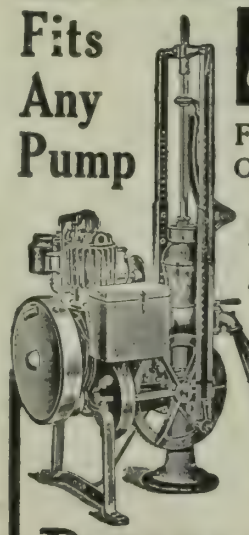
Be adequately prepared by installing the Layne & Bowler Pump, built to meet your individual requirements.

Write for Catalog No 25.

Layne & Bowler Corporation, 900 Santa Fe Ave. Los Angeles, Calif.

READ-MILLER CO.

Fits Any Pump



All You Want Of It

FROM 270 TO 2450 GALLONS OF WATER PER HOUR WITH THE

FULLER & JOHNSON FARM PUMP ENGINE

This Farm Pump Engine has been rightly called *"the mainspring of the farm."* Can be attached directly to any pump without extra fittings, special platform or foundations. It works in any kind of weather and will supply all the water needed for home or stock in the hottest and calmest days—for household or garden use—for washing buggies—fighting fire—for cooling porches—sprinkling lawns, etc.

No extras to buy. Comes complete in one crate, ready for instant use.

Remember there are 73 years of honest manufacturing experience behind this Farm Pump Engine.

It is not to be compared with cheap articles of the same sort which are *built merely to sell.* This engine is *guaranteed* and once you use it you'll say it's the best investment you ever made.

Our Low Price will surprise you.

Power

The Farm Pump Engine is also a complete power plant in itself. Relieves you of turning cream separator, churn, washing machine —in fact, anything that can be hitched to it. Runs steadily and easily and without vibration.

FREE BOOKLET

Let us explain in detail just what this pump can do and why it will pay you to own one. Send for our free booklet.

Pacific Hardware & Steel Co.

San Francisco.

Water

Andrew Cock, who has charge, showed us an orange stick ¾x2 inches across which had been cut to a 3-inch length. The orchards are pruned annually so not many sticks so large as this are found.

They cut the brush from 26 acres of six-year oranges and lemons in 1¾ days, using two men at a cost of $4.20 per day and two mules to haul the outfit through the orchard at $2 per day. The use of the machine is rated at $1.50 per day. It chops all the brush to pieces 2½ to 4 inches long and spreads them through the orchard where they will lighten the soil and will not have wasted the fertility used in growing them.

GASOLINE STRAINING DANGEROUS.

In a letter to this office J. N. Odell writes: "Apropos of an article in a recent issue of your paper advising people to strain gasoline through chamois leather, I am enclosing a clipping which may interest you. An automobile dealer tells me he tested this and found that the hazard described is existent and extremely dangerous."

The article follows:

Ross Brooks, chief of the Oklahoma City Fire Department, recently pointed out a new danger to automoble owners and motorists arising when a chamois skin is used as a strainer for gasoline, says the Pacific Underwriter. The danger and its remedy was alluded to by the chief as follows:

"It is a strange fact that not one motorist in a dozen knows that he is literally taking his life in his hands when he pours his gasoline through a funnel in which he has placed a chamois skin to act as a strainer. Statistics of fire departments in many cities show that an overwhelming per cent of auto fires are caused by this apparently trivial cause.

"Static electricity is formed by the friction of the gasoline passing through the chamois, which a careless motion may generate into a spark, causing a frightful explosion, which has several times occurred in the midst of a party of motorists, and the cause of which has until recently remained a mystery.

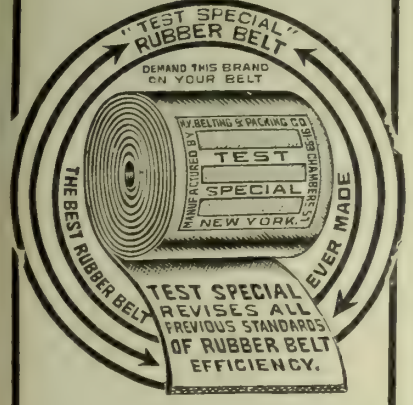
"So long as the funnel fits tightly into the mouth of the tank there is no danger. That carries a ground which keeps the electricity from gathering into a dangerous amount in the funnel. But when the funnel is held in the hand, or is separated from the conductor (in this case the metal tank) it becomes charged with one of the most powerful and deadly agents in the world, electricity. In many cases the motorist goes on his way, not knowing that he brushed elbows with death. For unless a ground is formed as the gasoline filters through the chamois, a spark will inevitably lean from the funnel to the nearest point of contact with the tank. Many persons have been burned and scarred for life, and several have been killed, through ignorance of this electrical phenomenon. Formerly somebody was supposed to have inadvertently struck a match when these sudden explosions occurred, but now investigation shows that the true reason is due to the fatal oversight of using the chamois skin in a suspended funnel.

"The moral of the whole thing is, never, under any circumstances, put gasoline through a chamois skin. The danger always exists, for electricity is a peculiar agent and it is an impossibility to know when the funnel being used so innocently by the ignorant motorist has received its maximum capacity of the statical current."

BELTING

that

Must Make Good



When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a **free sample** of **Test Special** together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

New York Belting & Packing Co.

519 Mission Street, San Francisco.

Established 1846.

Fill out this coupon—Mail it today

A pocket memo booklet giving speed and power tables will be sent **Free** to all who mail this coupon.

NEW YORK BELTING & PACKING CO.,
519 Mission St., San Francisco.

Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

..... Cal.

H. P. of.... { Gasoline Engine... / Steam Engine .... / Electric Motor....

Diameter in Inches.. { Driving Pulley.... / Driven Pulley.....

Width of Belt.....Ply.....

Distance between Centers of Pulleys .....

Revolutions Per Minute of Driving Pulley .....

Kind of Drive..... { Cross..... / Straight..... / Perpendicular.....

Kind of Machinery Driven .....

My Dealer's Name .....

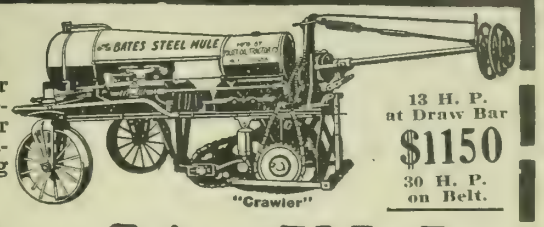
My Name.....

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ONE MAN WITH

This Tractor Does All Farm Work

The Bates Steel Mule is the *only* tractor built that will replace horses for *every* farm operation from plowing to harvesting.



13 H. P. at Draw Bar
$1150
30 H. P. on Belt.

The Bates Steel Mule

PATENTS PENDING

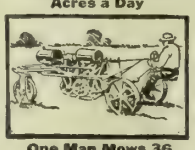
No New implements are necessary—the tools you now have will do the work cheaper, quicker and better when hitched to a Bates Steel Mule. Works on any soil all the year 'round. In successful use anywhere.


One Man Plows 10 Acres a Day


One Man Harvests 40 Acres a Day


One Man Drills 50 Acres a Day


One Man Discs 35 Acres a Day


One Man Mows 36 Acres a Day


One Man Cultivates 31 Acres a Day

13 H. P. Plus at Draw Bar.

One Man Operates It

The Bates Steel Mule is the only real one man tractor. Saves help, time and money. Has a heavy duty, four cylinder motor, two speed transmission, hardened cut gears running in oil, and Roller Bearings. This wonderful tractor is backed by a broad, strong guarantee.

For Further Details See

BATES STEEL MULE CO.
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Pacific Coast Distributors.
320 N. San Pedro St.
Los Angeles, Cal.

Manufactured and Guaranteed by
Joliet Oil Tractor Co., Joliet, Ill.

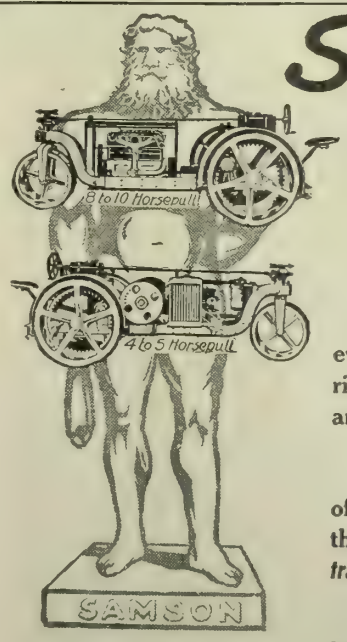
"Crawler" Works On Any Soil

30 H. P. on Belt

AGENTS

Imperial Valley Hdw. Co., El Centro, Cal. — Drew Carriage Co., Ontario, Cal. — John Deer Plow Co., Seattle, Wash.
H. C. Powell, Visalia, Cal. — Chas. Prunner, Exeter, Cal. — R. D. Hotchkiss, Vina, Cal. — R. C. Fairall, Pixley

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Los Angeles, Sacramento, Cal. Portland, Ore. Seattle, Wash. Reno, Nev.
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SIEVE-GRIP

Reg. U. S. Pat. Off. and Foreign Countries

TRACTOR

You want a practical, work-every-day tractor—one that is built right and backed by an experienced and reputable firm.

Fourteen Years

of tractor construction have taught the Samson Iron Works how to build *tractors that increase farm profits*

Sieve-Grip tractors are sturdy and simple—their prices are fair—4 to 5 Horsepull, $675 f.o.b. Stockton; 6 to 10 Horsepull, $1150.

Just drop a line to us right now and we'll send you "Samson Siftings" and our latest booklet P. R. 7

SAMSON IRON WORKS, Inc.
STOCKTON, CAL.

An Advocate of State Banking

To the Editor: While there is a lull in the verbal strife between the two versatile and talented Colonels I would like space to say something upon a subject which is, I think, of more importance than the one which has engaged the attention of my two esteemed friends. I refer to the question of cheap money for farmers. Measures pending in Congress are no doubt admirable in their provisions and calculated to do a great deal to relieve the existing conditions. Congressional action is necessarily slow and decidedly uncertain. Many years may elapse before any of the pending plans come to complete fruition. Such legislation must be national in its character and it will be found exceedingly difficult to adapt it to the various conditions existing in different parts of our country. For this and other good reasons it would seem that it would be the part of wisdom if this matter was left to the individual states to solve as local conditions demand.

Though the proposal to have the State take up this question was voted down at a recent election it by no means follows that the great majority of our people do not favor it. Fear of strengthening an already too potent political machine and of entrusting a great economic project to a number of job-chasing politicians caused many whom I have met to vote against it and no doubt was the principal cause of its defeat.

The tendency in California is toward small land holdings and intensive cultivation. There is usually a long interval between the settling upon the land and the procurement of a suitable and proper income from it. During this period the average farmer becomes pressed for money with which to carry on the work of proper development and because he cannot procure it in the usual way at a low rate of interest from the local bank many men, who would have succeeded and become prosperous farmers, fail. Every such failure works harm not only to the individual but to the community and to the State at large.

No security can be, or is, better than good land, yet it is the most difficult security upon which to borrow money in reasonable amounts. Bankers seem to lose sight of the fact that as custodians of the money of the public, they owe that public an obligation and should assist in the upbuilding of legitimate industries in which the people are engaged, so far as is consistent with safety.

I can call to mind only one community in this State in which banks have pursued, and still pursue, a liberal and just policy toward the borrowing farmer. That is the city of Stockton where, unless conditions have changed radically of late, any deserving farmer can borrow 50 per cent of the actual value of his land at six per cent. The prosperity of the farmers of San Joaquin county and the sound financial condition of the banks mentioned testify to the wisdom and profitableness of this procedure.

In most localities the farmer who would borrow meets many difficulties, must pay a high rate of interest and in many cases is compelled to pay a bonus to a broker for borrowing what money he requires. There are some banks which refuse to loan directly upon country property which will accept a loan upon the same property from a broker who charges from two to five per cent for his services. Besides the brokerage the farmer must pay an interest charge of eight per cent and from three to five times the actual cost of sending a man to inspect his property. The banks are loaning the money of the people. Their own money is safely tucked away in government and other bonds and in improved city real estate. The Federal government lends them 90 per cent of their capital besides paying them two per cent upon the government bonds in which it is chiefly invested. Of all the tens of millions of dollars loaned by the National banks of this State, not one dollar belongs to the banks. The public supplies the money they loan and also provides the reserve fund which protects the loans.

Our National banking system is the most efficient device for enriching the few at the expense of the many, that human ingenuity has ever heretofore devised.

It is useless to call attention to an evil unless one can suggest a remedy. The remedy that I suggest is the carrying on of a banking business by the State. Bankers will cry "Socialism," "Paternalism," "Politics." There may be a trace of each to be found in the plan, but you will find the same thing in many others of our government activities. What these are the intelligence of your readers will recall without my enumerating them at length.

The State could carry on this business with a very small addition to its political machinery. We have an elaborate system involving a State and County Treasurer. There is an Assessor to fix values in every county and there is a Board of Control to supervise the whole business.

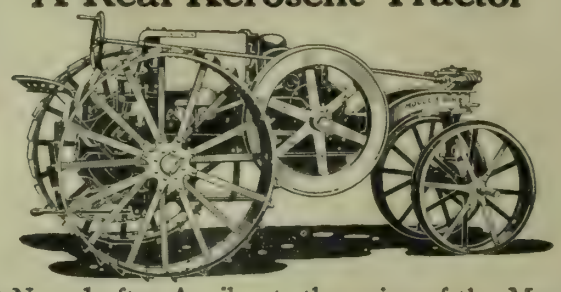
I will not trespass on your valuable space to go into smaller details. I am sure that the plan is feasible. I have given it years of careful consideration and am prepared to answer any objection which may be raised against it. It would not interfere with banks for loan and discount nor for the ordinary commercail transactions, but it would do away with the evils of our existing system of banking.

Savings banks would be only slightly affected, though many of these require a radical change in their procedure, as the following incident will show: A friend applied to a large savings bank for a loan on country land. The cashier told him that the bank was anxious to make good country loans and asked how much was wanted. "Four thousand five hundred dollars," was the reply. "Too small," said the cashier. A few days later he applied for a loan for a client who wanted twenty thousand dollars. "Too large, too large," was the reply.

I hope that this rambling screed will evoke a general discussion of this question. State banking will mean cheap money for farmers and that will mean prosperity for the country as well as the cities, for the latter depend almost entirely upon the former. H. J. Corcoran.

Esparto.

Mogul 8-16
A Real Kerosene Tractor



ON and after April 1st, the price of the Mogul 8-16 tractor will be $725 cash f. o. b. Chicago. All bona fide orders received up to April 1st will be accepted at the present price of $675 cash f. o. b. Chicago.

We are making this announcement early so that our thousands of friends who are thinking of buying Mogul tractors will be posted on future prices.

After all it is not the **price** a man pays for a tractor which is of the most importance, **but what its power costs. A Mogul 8-16, burning kerosene, in five thousand hours of work will more than save its original price over the cost of the same power produced by a gasoline tractor.** Remember the **Mogul 8-16 is a real kerosene tractor,** planned and built originally for using this cheap, plentiful fuel.

This readjustment of price is of minor importance compared with the wonderful saving which a Mogul 8-16 will make. It is necessary owing to the advance of prices in the raw material market. There is no change in the original policy to sell the Mogul 8-16 at the lowest possible price, always maintaining Mogul quality, but materials are almost unobtainable, even at an advance in price of from 50 to 100 per cent over prices of a few months ago.

Orders placed at once will stand the best chance of being filled in time for spring work. **See the Mogul 8-16 dealer, or write us.**

International Harvester Company of America
(INCORPORATED)

Crawford, Neb. Denver, Col. Helena, Mont. Portland, Ore.
San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

A Word to the Wise, Etc.

We tell them to buy and that seems to be all that is necessary; but the proof of the pudding is in the eating, you know, and the real reason for so many orders at this early season is because of the sturdy construction and simple method of attaching.

The Jackson AUTO-TRAILER



You Should Have One.

Send for Catalogue and Prices.

MARTECO COMPANY

ORIENT BLDG.. SAN FRANCISCO

ENGINE PRICES REDUCED
March First

TREMENDOUS ADVANCES IN RAW MATERIALS HAVE FORCED OTHERS TO RAISE PRICES

We are Reducing Prices

And by Doubling Sales will give you a High Quality Engine for Less Money and Get us Your Orders.

1½ H. P. $44.00—2 H. P. $60.25—3 H. P. $84.50—4 H. P. $107.75.
Larger Sizes Priced on Same Basis.

All Engines have Starting Magneto, Pulley and Tools.

Calif. Hydraulic Eng. & Supply Company
68 FREMONT ST., SAN FRANCISCO

State Butter Record Smashed

A seven-day official record of 34.135 pounds of butter from 532.4 pounds of milk was completed February 25, by the five-year-old Holstein cow Alba Sadie Cornucopia Creetia, owned by Mrs. Anita Baldwin of Los Angeles, according to Supt. W. H. Taylor.



Alba Sadie Cornucopia Creetia (139651), Who Now holds State Record for Weekly Butter Production.

This is .295 pounds more than the State record made last year, and Alba Sadie is sailing ahead to smash the 30-day record of 128 pounds, made three years ago. Her test has been averaging five per cent.

This cow was bought by Mr. Taylor for $1550 in Colorado for another party and was later bought by Mrs. Baldwin. Earl Sturgis, who had charge of Tilly Alcartra, while she was making her world's record, is now officially recording Alba Sadie's performance.

The ration being fed daily is 76 pounds of carrots; 12 pounds equal parts bran and barley; four pounds soy beans; two pounds cotton seed meal; 10 pounds alfalfa hay and 20 pounds of oat hay.

Last year, two months after this cow was shipped from the East, she made 28.85 pounds of butter in seven days. She is a granddaughter of Sadie Vale Concordia, who once held the world's butter record.

Banks Should Loan Money on Dairy Cows

Practically all of the money that has been loaned to farmers on dairy cattle in this State in the past has come through the various creameries in the State. That such a condition is not a good one for the dairyman is obvious, as it practically places him at the mercy of the man to whom he sells.

Banking officials argue that the creamery man is the only one who can loan with safety on dairy cattle, because of his opportunity of keeping in closer touch with the collateral (cattle) than would be possible for the banker or other money loaner.

Maybe that is true as the law stands in California. If so our livestock interests should get busy and see that the law is changed. In the middle west bankers are evidencing a desire to promote the dairy industry and the following argument by F. W. Merrill of the De Laval Separator company is suggestive of why the dairy farmer needs and should have the hearty co-operation of his local banker or money lender.

It is safe for the bankers of a community to finance the dairy cow proposition. There are, of course, chances to lose out on a deal of that kind, but our bankers as a rule are conservative. They know their customers well and can manage the undertaking in such way as to come out even if they will study the proposition from all angles.

A large majority of our farmers, whether they are on the small irrigated farm, or on our dry land farms, or are located on humid sections, are not financially able to pay "cash down" for dairy stock, and even if they were—there are not many men who want to go away to purchase just the few with which they want to start. It would be too expensive for each farmer to follow a plan like that. Even if this were possible, it would not be a good policy because there would be no community interest, no co-operation among the farmers for the production of uniform stock, and a large number of failures are likely to occur, resulting from the purchase of poor stock.

Dairying is a co-operative proposition from the breeding of the cow to the sale of the finished products. No matter where you look for successful dairying, in foreign countries or in our own prosperous dairy sections, you find it most profitable and most successful from every point of view if there is a form and spirit of co-operation among all those interested. No community is financially able to start and develop four or five dairy breeds, but any community can develop one to the extent that in 15 or 20 years it would have a surplus of dairy stock to sell, and the fact that the stock were all of one kind would advertise the proposition everywhere and bring buyers from far and near. Why do we go to Jefferson county, Wis., to buy Holsteins or to Waukesha county, Wis., to buy Guernseys? Because the people of those counties decided 25 years ago to breed one kind. The best feature of this proposition is the opportunity it affords for good breeding. A few high class, well bred bulls—bulls whose sires and dams are animals of merit, could be used exclusively in the community and breed up the native stock. After all is said and done—there is no better way to start dairying than to grow into it, by purchasing purebred bulls and breeding them to native cows which show dairy qualities.

The bankers should have it understood among the farmers that they are buying the foundation stock, and the object of buying is to enable them to get started along the right lines and to build permanently. I think it is not asking too much of the farmers to have it distinctly understood before purchases are made that they will, by the continuous use of pure bred bulls, breed up the stock they already have to a high standard. So instead of having for our slogan, "Buy Cows," let us make it "Buy Bulls."

The idea of purchasing cows for the farmers is not for the bankers alone, but for all business men. In some of our northwestern states the realty men, who are interested in the permanent development of the country and are locating people for that purpose and not for mere speculation, are devising plans to assure the newcomer of a permanent living. To do this they provide the settler with some dairy cows and one or two good brood sows.

They know that if a man will milk cows he has something to sell every day in the year—his living is provided—he has no store bills accumulating beyond his ability to pay. If drouth comes he does not have to pick up and move. He must necessarily raise a variety of feeds. He has some manure to put on the land, and thereby keep up its fertility, and increase its water holding capacity. He erects some permanent buildings for his stock, and when all the farmers are doing this it gives the country stability and permanency.

WOULD SILAGE INCREASE PRODUCTION?

To the Editor: I have a herd of eight Jersey cows which gave an average of 206 pounds of butter fat last year. I fed alfalfa hay and green alfalfa when it was obtainable. I want to know how much I could reasonably expect them to gain by feeding them silage five months in the winter.—V. I. T., Manton.

[Answered by C. G. McFarland, Tulare.]

[I would say that your subscriber could easily expect an increase of 25 per cent in returns by feeding good corn silage five months in the year.]

SUDAN GRASS

ALFALFA---SEED POTATOES

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Shropshire Breeders, Attention!

A representative of Bishop Bros.' firm, whose noted San Ramon flock of Shropshires was awarded 15 first, 9 seconds and 6 championships at the P. P. I. E. Live Stock Show, will go East about April 1st, to fill orders for registered rams and and ewes of that breed.

Other Orders Solicited—Prices on Application.

Individuals or Carload Lots.

Personal Selection of All Stock Will Insure You Sheep of Correct Type and Good Breeding.

For further particulars apply at San Ramon Rancho, Contra Costa County, California, or at Office, 166 Geary Street, San Francisco.

Sons of MARY KING of FERN RIDGE

Panama-Pacific Guernsey Bull, Winner of Third Prize.

We are offering 1-year-old son of Mary King, out of Imp. Kathleen of Lewison, 23315. She by Governor of the Chene, the only bull on Guernsey Island, which American buyers never could take away. She produced as high as 50 pounds of milk testing, 4.5 per cent fat.

Another son, 6 months old, out of Cherry's Lady of Lewison 24207. She has given as much as 46 pounds milk, testing 4.6 per cent fat. This will make a great show Bull. Will register, and name to suit buyer.

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WHAT OUR DEFLECTORS WILL DO: Immediately stop bank cutting and loss of ground. Turn current away from bank. Form new channel in center of river. Protect bridge abutments and approaches. Cut out objectional sand bars. Build up your land by depositing silt along bank line. Will not interfere with navigation. Let us send an engineer to inspect and report on the cutting conditions of your land.

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Send for sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

How a Milking Machine Helps.

[Written for Pacific Rural Press.]

H. D. Fowler of Modesto is paying $20 an acre rent for 40 acres and is milking 25 cows. He says that he is making a good living out of it, and is not killing himself either. The drudgery of the work has been removed by the installation of a Calf Way Milker. The cows are milked in an hour and twenty minutes by one man. No stripping is found necessary with these machines and Mr. Fowler is of the opinion that the practice of following the machines by stripping is not good as the cows have a tendency to hold back more of the milk to be stripped. After using the machine for six months, he is convinced that the cows' bags are in better shape than from hand milking, that their milk is cleaner, and that dairying is a pleasure rather than a drudgery.

Another thing that Mr. Fowler is constantly on the lookout for is high-producing cows and sometimes gets one that is a bad kicker. He says that he has never had any trouble in getting them to stand for the milker.

He belongs to the Stanislaus Cow Testing Association and says that he can't afford to keep a cow that does not average a pound of butter fat per day during the milking period. His 25 cows average nearly 1½ pounds.

He gets up at 6 a. m., his cows are milked and ready for breakfast by 7:30. After breakfast he goes to work in the field while his father separates and cleans up. He can work in the field until 5 p. m. and then come in and do his milking and sit down to supper by 7 p. m.

He expects to add 10 more cows to his herd as he can manage that many more without any trouble and he is raising plenty of feed for thirty-five.

Rice By-Product for Hogs.

To the Editor: Can you tell me what should be fed with rice middlings to make a well-balanced ration for hogs? As rice middlings are high in carbohydrates, I want to know what should be fed with it, and in what proportion, to get the very best results. I want to give it a trial.—W. M. M., Manteca.

[Answered by Prof. F. W. Woll, Univ. Farm, Davis.]

[Rice middlings is probably a new name for rice bran or rice meal, a by-product from rice mills, which makes a valuable feed for swine and other farm animals, when from fresh stock and free from adulteration with rice hulls. It is considerably lower in protein and higher in oil (fat) than either wheat bran or middlings, while it contains more carbohydrates than wheat bran and less than wheat middlings. A good quality of rice bran will contain, on the average, the following amounts of digestible components: protein 7.9 per cent, carbohydrates 38.1 per cent, fat 8.8 per cent, nutritive ratio 1:7.3. It is preferably mixed with ground grains (barley, Indian corn, milo, etc.) in feeding hogs, in equal parts by weight, and fed in a slop with skim milk, about one part of grain to three or four parts of milk; two or three pounds of grain being fed per one hundred pounds of hogs. For growing animals, an addition of a small amount of tankage, say 10 to 12 per cent of grain mixture, will be advisable, especially if skim milk is fed in only small amounts or not at all. A good grade of tankage furnishes a cheap source of protein and makes an excellent component of rations for young pigs when supplied in the proportion stated. Linseed oil meal, cocoanut meal or cottonseed meal may also be used to increase the protein content of the ration, but they are relatively more expensive than tankage for this purpose. Cottonseed meal can only be fed in very small amounts to pigs with safety, making up not over one-fourth of the grain mixture, and even then only for a period of four to six weeks at a time, owing to its toxic properties.]

KEEPING MILK SWEET FOR PIGS.

To the Editor: Is there anything that can be added to skim milk to prevent it souring that will not be injurious to small pigs?—P. B. L., Tulare.

[Formaldehyde, borax and salicylic acid have all been used in the past by unscrupulous milk dealers as a preservative of milk and we suppose any of them would suit your purpose, but we do not know how much of either to use with safety. Lime water might do the trick and would not be dangerous. Use one gallon of lime water to 10 gallons of milk and see whether it has the desired effect. Anyway it seems to us you are going to a lot of trouble for nothing, as sour milk is, if anything, better feed for pigs than sweet milk. It would be a good idea to heat your milk to a temperature of 150 degrees F. before feeding. This would probably keep it sweet somewhat longer and would also guard against tuberculosis infection from the skim milk.—Editors.]

COWS NOT PASTURED.

[Written for Pacific Rural Press.]

The cows which produce milk to be bottled and sold in Holtville, Imperial county, are not pastured at all in summer, but are fed about 30 lbs. each of freshly cut alfalfa twice a day in the mangers and dry hay ad libitum in corral feed racks. The green alfalfa usually wilts before it can be brought in, and no bloating has ever occurred In the corral the cows average about 30 pounuds of hay per day.

In winter the cows are turned on green grain to pasture when it is not too wet; and then they do not seem to care for the cottonseed which is fed at other times to keep them up in flesh during winter.

There is not enough rain ordinarily to muddy the corrals; and they are easily kept clean with a buck scraper.

An inquiry for 40 Duroc boars in a bunch had to be turned down recently by Peters, Lamson & Walker of Devore because they were nearly sold out.

REMCO
REDWOOD PIPE

All diameters from 2 inches to 12 feet. Much cheaper than any metal pipe. Will carry 30 per cent more water than metal or cement pipe of same diameter. Will outlast any metal pipe except cast iron. Cannot be injured by roots or displacement. Furnished for any pressure from 0 to 400 feet, and guaranteed for 100 per cent overload.

Write for further information, prices, etc.

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Cheaper than metal tanks. Last longer. Cannot rust. Not affected by chemicals in water. Thousands in use in the West.

We make them in all shapes and sizes, from 200 gallons to 500,000 gallons.

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1608 HOBART BLDG., SAN FRANCISCO.

40 Shorthorn Bulls and Heifers

REGISTERED AND TUBERCULIN TESTED.

NOW, at my farm at Perkins, 6 miles East of Sacramento.

This stock was purchased from the best herds in Nebraska for my California trade, and are as fine a lot of one and two-year-olds as I could secure. Inspection invited. Call and see them before purchasing elsewhere.

Also have a few registered **BERKSHIRE GILTS** for sale.

I will leave shortly for the East to fill orders for Shorthorns and Herefords. Write me at once of your wants so that I may fill your order on this trip.

H. L. MURPHY

PERKINS, SACRAMENTO CO., CAL.

Brighton Herd of Shorthorns, Established 1880.

HILLCREST STOCK FARM

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SHORTHORN CATTLE

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FOR SALE, SINGLE OR CARLOAD LOTS



KING LANCASTER,

Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.

THEY HAVE GRAND CHAMPIONS BEHIND THEM.

Dairymen of San Joaquin county recently held a banquet at the Hotel Clark, Stockton, at which the State law on tuberculin testing, which goes into effect October 1, was discussed.

Princess of Meadowbrook 25185, Guernsey cow owned by the Elliott Brant Rancho of Owensmouth recently made a new State record of 14,000 pounds of milk and 825 pounds of butterfat in one year.

Making Alfalfa Produce More.

[Written for Pacific Rural Press.]

Fertilization of alfalfa is commanding more and more attention in Stanislaus county, due to the considerable falling off in yield which has been pretty general there during the past few years.

An experiment in this respect which is out of the ordinary was carried on by J. M. Bomberger on his ranch north of Modesto last year. He applied 220 pounds of gypsum and 80 pounds of sulphur to the acre, using it on two checks, and setting aside two other checks, having equally as good a stand, to compare results with. At the end of the season those checks which were fertilized had produced about one-fourth more than the two left without fertilization.

Another experiment which Mr. Bomberger is trying out this year is with alfalfa seed. Last summer he observed that a scattering lot of alfalfa on the south bank of the drain ditch which runs through his ranch, matured a fine lot of seed. The alfalfa had been left on account of its being too wet to cut with the mower.

After watching the development of the seed grown along the bank he decided to see if he could not get a better germinating seed by cultivation. With that in view he has plowed up a three-foot strip, leaving a foot strip of alfalfa in two checks. By cultivating in this manner he believes that the sunshine reflected from the ground and the better circulation of air will improve the germinating qualities of the seed.

When asked why the life of alfalfa on so many ranches is short, he stated that in his opinion it is cut too close in the fall, just as it is becoming dormant. He maintains that close feeding weakens it to such a degree that quick sprouting foxtail gets a start on it in the spring and uses up a good deal of the plant food that the alfalfa should get. He has found it a good practice to leave a three or four inch stand in the fall instead of pasturing it close as is the common practice.

1480 Hogs on 25 Acres.

[Written for Pacific Rural Press.]

A specialized purebred Duroc hog ranch where convenient use of alfalfa pasture reaches the top notch, is that operated by Peters and Lamson near the Mexican boundary south of Holtville. Not over eight sows and their pigs are kept in each of ten woven wire pens enclosing 1¼ acres each of alfalfa. Every three weeks in winter and every ten days in summer, these pens are irrigated, while the pigs and sows are transferred for the same length of time to ten similar pens just across an alley. Alfalfa gets good growth while they are off.

The object in keeping not over eight sows together is to prevent them from piling up at night. That would make them come out in the morning with fever and watery eyes and might start them to pneumonia.

Opensided shades of old hay or straw on hog wire stretched over a frame on top of fence posts at the pen corners supplement the shade-trees. Sun heat does not penetrate hay like it would shingles or metal roofs.

Water is piped to each pen from a high galvanized iron tank into which it is pumped.

"Cool clean water to drink and plenty of shade will pull them through any summer. Wallows are unnecessary. They might be desirable if they could be kept clean and frequently drained, but there is no drainage here. Stagnant, foul places breed germs. We have no mudholes. There are always loose panels lying handy to set up around wet places until they dry. We keep the animals clean so the dip or spray we have to apply frequently for lice will take effect," says L. L. Lamson, who has charge of this ranch.

Dwarf milo corn or barley and tankage are bought to complete the ration. One grain is used when the other is more expensive. The pigs are usually about eight weeks old when taken from the brood pens to the alfalfa pastures. They eat about 2 per cent of their weight every 24 hours, a mixture of 95 per cent soaked corn and 5 per cent tankage. The corn is to be ground in the future.

As the pigs grow older, a creep is arranged so they can get to self-feeders in which corn and tankage are separate. Pigs under 100 pounds eat as much tankage as 7 per cent of the total, while at greater age they come down to 3 per cent. No milk is needed with the tankage and alfalfa—milk is hard to keep sanitary—and they have no cows anyway. After the creep is put in, the sows will not get all the feed they want, because they must not be permitted to get fat.

The alley between the alfalfa pens contains a dipping vat of permanganate of potassium or a coal tar preparation. The animals must go through this every time they are changed to the other set of pens.

Every pig and hog was recently vaccinated, and the brooding and fattening pens are separate, but those are other stories.

Professional Directory

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Largest and best equipped soil laboratories in West.
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GRANDSONS OF TILLY ALCARTRA

At Prices within Reach of Every Breeder and Dairyman.



A Grandson of Tilly Alcartra.

We have several splendid grandsons of this now famous cow which we can deliver to you at prices which will suit the pocketbooks of every dairyman wishing to improve the quality of his herd, whether it be a grade or pure-bred herd. These bulls are sired by our herd bull, Prince Alcartra Korndyke and out of A. R. O. cows, and are the only living grandsons of a cow having a record of over 30,000 pounds of milk in a year. Such an opportunity for increasing production has never been offered **DAIRYMEN AND BREEDERS** in California, price and quality considered. Buy one of these bulls and solve your low production problem. Write

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."



Grand Champion Sow, P. P. I. E.

Medium Type POLAND-CHINAS

Choice breeding stock, both sexes, from Panama-Pacific International Exposition prize-winning strain. 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows. $2145 cash awards. Write to

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BIG TYPE POLAND CHINAS

Gilts from Weanlings to one year old. Bred or open. Boars from weanlings to 8 months.

THE BROWNING STOCK FARM,
W. H. BROWNING, PROP. WOODLAND, CAL.

Jersey Bulls

EMPRESS LASS, Grand Champion Jersey Cow at Alaska-Yukon Exposition, and several times at California State Fair, gave 82.32 pounds fat during December, 1915, under dairy conditions.

Her Grandsons and other Bulls from good-producing cows for sale.

PRICED RIGHT.

N. H. LOCKE CO.
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Oak Grove BERKSHIRES

CHOLERA IMMUNE

Our herd is Cholera Immune, the only Immune Berkshire herd in the State.
Fine herd boars in use and they are second to none on the coast. Our sows are of equal merit.
We know that we can supply what you want.

Write Us or Call.

OAK GROVE DAIRY FARM
H. G. ARMSTRONG, Prop.
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REGISTERED SWINE.

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.
Write or call and see us
SWINELAND FARM,
W. O. PEARSON, Prop.
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GET STARTED RIGHT
Registered Duroc Jerseys.
$10 each PIGS $10 each
are money makers.
What's the use of raising "Scrub Hogs" when purebreds may be had at this price? They grow faster. Send today,
NEW ENGLAND CALIFORNIA CORPORATION.
RIPON, CALIF.

With the Live Stock Men.

DAIRYING.

The Oakdale Creamery of Oakdale is now putting out 7800 pounds of butter daily, the largest output since the plant was started.

Jake Mull of Tulare is the owner of a Jersey calf only 11 inches tall, weighing only 20 pounds, but perfectly normal otherwise.

Cows on the San Joaquin County Farm near French Camp are averaging 30 pounds of butterfat per month for the 41 animals under test.

An important conference was held on March 4 at Eureka between the directors of the Humboldt County Farm Bureau and the creamery operators of that county.

A three-year registered Holstein bull was bought last fall for $250 from a San Bernardino dairyman for the Sherman Indian School ranch near Arlington. About 50 Indian boys and girls are learning agriculture and domestic science at the ranch, by doing the work.

The six-year registered Guernsey bull, May King of Fern Ridge 17432, owned by C. W. Main of Corona, is by imported King of May and out of Yeoman's Hayes Felois. He took third prize at the Panama-Pacific Exposition, having been fitted for only a month previous to the show.

St. Mawes Beauty 295047, the Jersey heifer bred and owned by Ed. Cary of Carlton, Ore., which was awarded first place in the two-year-old heifer class at the Panama-Pacific Exposition has completed a year's authenticated record of 10,239 pounds of milk and 586.8 pounds of fat.

H. E. Cornwall of Stanislaus county sold four bulls and two heifers to C. F. Austin of Milford Valley, Utah. Two of the bulls are from his blue ribbon cows at the 1914 State Fair. Mr. Austin bought about 90 head of grade dairy cows around Modesto and will use the Cornwall stock as his foundation herd.

After two conferences with State Market Director Col. Weinstock, the committee from the Bay Counties' Dairy Co. have been unable to arrive at any definite agreement with the San Francisco milk distributors' association. It is understood that the producers are asking 16¾ cents per gallon for milk beginning July 1, 1916, while the distributors claim that there are many dairymen who are producing milk for 15c and still making a good profit. Col. Weinstock is endeavoring to ascertain the cost of producing milk before recommending any fixed price per gallon.

HORSES AND SWINE.

Peters, Lamson & Walker of Devore and Holtville have 60 registered Duroc sows now and expect to work up to 100.

H. S. Boudier & Son of Napa county recently shipped a registered Duroc-Jersey sow to Jas. Cass of Cayucos, Cal.

Starting with 10 bred gilts 6 to 8 months old, in August, 1914, J. E. Hollingsworth of Hemet has increased his herd to 225.

Members of the Imperial County Boys' Pig Clubs held their first get-together banquet at El Centro recently, dining on roast pig.

The stallion, Indices, property of the Gridley Percheron Horse association, died last week. The association loses several thousand dollars as the horse was a fine one.

Hogs do better in Imperial Valley without wallows, according to a well-known breeder, because where they have them, they continually run back and forth to the water and out again.

N. D. Dutcher & Son of Livermore recently lost two valuable stallions in a fire—King Clyde, a Clyde, and British Oak, a Shire—which have been in the Dutcher stud for several years.

Dr. J. A. Crawshaw of Kings county has ordered from a breeder in Indiana two young sows and a boar of the spotted type of Poland-Chinas. At present there are no specimens of this type on the Coast.

Gorham and Rankin have sold the "Double Square" ranch in Nevada to Ed Partridge of North Dakota, together with 5000 to 6000 head of horses. This ranch has become famous for its horses, one of their regular customers being the U. S. government, which purchased several carloads yearly for use in the cavalry.

H. L. Murphy of Perkins writes us from Lexington, Ky., as follows: "I am writing to inform you that I have just purchased the great herd boar of Elmendorf Farm, Rival's Robin 2nd 195518. I think this is the greatest boar I have ever seen. This boar at the head of my herd mated with the type of sows I have, should give great results. I also purchased some sows. I go from here to Missouri to buy Shorthorn bulls."

The Oak Knoll Hog Ranch of Napa have moved 340 head of their O. I C registered hogs to a ranch that they have recently bought near Salida. They intend to fit up the place as a modern hog ranch. They have also purchased the old Butter's place near Ripon and will keep part of their herd there. The Oak Knoll people do not believe in having their eggs all in one basket so are branching out into the Berkshire game, having recently bought several fine brood sows and a boar from A. B. Humphrey of Escalon.

Chas. R. Hanna of Riverside is negotiating for a son of the Poland-China boar, Pritchett's A Wonder. Mr. Hanna has a bunch of beautifully built registered hogs including the two-year sow, Glenview Beauty, of his own breeding. He figures that this sow alone returns him interest every year on $1000 valuation. She has eight fine pigs now. Her bones are not as large as some, but are sound and compact. He has a 23-months boar sired by Iowa King and

Special Live Stock Market Report.

There has been no change in the local cattle market the past week, although light cattle continue to be scarce. There are still some cattle in packers' feed lots in Nevada and California and these will probably supply this market till the grass cattle start to come. A recent visitor to Idaho and Utah reports plentiful supplies of both light and heavy weights in those two states.

Lambs are a little stronger than reported last week and while there have been a few straggling bunches of spring lambs on the market it will take another three weeks to bring out supplies for anything like a general trade. Idaho and Utah are both reported to be extremely short on sheep and lambs, which strengthens an already strong feeling here.

The hog market continues to get stronger and the same condition is apparent in markets all over the country. Shipments have started from Idaho and Utah to this market but have not as yet assumed any importance. Too many light hogs are being offered to hold up quotations on that end well and it looks like good business to hold them in the feed lots for more weight.

WOOL.

Wool is now selling at the highest point in 30 years in face of the fact that 75,000 bales went through the local port during January and shipments from Australia continue to be heavy. Whether it is wise, in view of this, to delay selling, seems problematic. The Australian market is 10 per cent off and the London sales opened the last day of February 5 to 7½ per cent lower all the way round. Buying is reported to be still going on actively in the country considerable wool being contracted for at Red Bluff from 22 to 26 cents. At best the situation looks risky and the man holding wool, either in storage or on the back, would seem to be gambling.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

HORSES AND MULES.

8 JACKS FOR SALE from 1 to 6 years, or will trade for fillies or heifers. We took all prizes for mules at State Fair, 1913. Kelley & Son, R. D. 3, Box 93, Lodi, Cal.

FOR SALE—Large-boned, purebred mammoth Jacks. Best of breeding. Prices and terms reasonable. Satisfaction guaranteed. J. A. Dickinson, Fresno, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

DAIRY CATTLE.

FOR SALE—Twelve head of young purebred (not registered) Holstein cows. All had the first calf and are very heavy producers, free of tuberculosis. Cheap, if taken in one bunch. Come and see them, or address for further information. M. Hugener, Grover Ranch, Byron, Byron, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

DAIRY COWS FOR SALE—30 head Holstein and Durham grades springing with first and second calves. Also other dairy cows, all ages. Thoroughbred bulls used Timbercrest Ranch, R. F. D., Redwood City.

WANTED—About 25 good dairy cows to be paid for in 12 equal monthly installments. Payment secured by mortgage on stock. Party reliable. Box 205, Pacific Rural Press.

VANADERA HERD OF JERSEYS is now offering fine heifer calves from register of merit cows with official yearly records. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs butter as two-year-olds. A. A. Jenkins, Tulare.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

HOLSTEIN BULLS—Purebred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

FRANK MEACHAM, Petaluma, California.—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class, thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TWO REGISTERED HOLSTEIN BULLS out of A. R. O. dams. Sired by King Mead. Ready for service. J. B. Harlan Co., Woodland, Cal.

TWO REGISTERED HOLSTEIN BULLS old enough for service. Very light in color. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

REGISTERED HOLSTEIN BULLS — Serviceable age From finest strains. Panama-Pacific Dairy. Sutter Creek, Cal.

FOR SALE—Nine Guernseys, including Glenwood Bull, $2,000. One made 425 pounds fat. I. J. Scott, Pomona, Cal.

FOR SALE—Two fine two-year-old registered Guernsey bulls from imported stock. T. W. Powell, Route 2, Lodi, Cal.

TWO CARLOADS GRADE JERSEY COWS and Heifers of fine milk strain. Also 11 head of yearling Holstein Heifers, cheap. E. H. Webb, Escondido, Cal.

ELEVEN REGISTERED HOLSTEIN COWS—Priced to sell as a bunch at very low figure. K. W. Abbott, Milpitas, Cal.

HOLSTEIN-FREISIAN CATTLE and Berkshire Hogs. H. B. Goecken, Breeder, Goecken Heights, Livermore, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

PALENDALE HERD of Registered Holsteins. Young bulls for sale. J. A. Pelanda, Modesto, Cal.

REGISTERED JERSEY BULLS from register of merit cows. D. F. Conant, R. "B," Modesto.

BREEDERS OF A. R. O. Holstein Friesian cattle exclusively. Dirk Dairy Farm Lemoore.

CREAM CUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls from tested cows for sale.

FOR SALE—16 good milk cows. H. G. Nickel, ½ south, 2¼ west of Dinuba, Cal.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAllister & Sons, Chino, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

BREEDER of Registered Holstein Cattle. Ernest Otto McClure, R. 2, Modesto, Cal.

BREEDER OF REGISTERED HOLSTEINS—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd. D. & H. Rowles, Modesto.

JERSEY BULL—8 months old. A bargain. O. J. Ames, Oakdale, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

SWINE.

BIG TYPE POLAND CHINAS—One to a carload. Any age, either sex. 600 on hand. They have plenty of size, extra good hams and shoulders, strong arched backs, great length, depth and thickness of body, with good looks as well. Many are sired by IOWA WONDER, a 1000-pounder in show condition. I believe his pigs are the best in California. Visitors say they are the best they have ever seen. He sires the kind that grow faster and larger, have more, better and stronger pigs, and are more practicable and profitable—the kind that are highly satisfactory. Extra special prices on account of being overstocked. I have hogs galore. Prices will surprise you. Satisfaction guaranteed. Write Geo. A. Smith, Corcoran, Cal.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—Everything registered and Cholera Immune. Have two young boars of service size and a few bred gilts to offer. These are extras in every way. Price very reasonable. Have recently received some bred sows from the East that are from Grand Champions and are bred to Grand Champions, from the best and most popular blood lines. Will have an attractive lot of pigs to offer from the coming spring farrows. These will be the equal of any raised in this country. Am booking orders now for same. Write for prices and catalogue. C. B. Cunningham, Mills, Sacramento County, Cal.

YOUNG POLAND CHINAS—Large type boar, "I. B. A. Wonder," won first in class and Reserve Champion P. P. I. E. 730 lbs. under two years in breeding condition. Sows bred and sired by "I. B. A. Wonder." Also weanling pigs, either sex. Trios unrelated. None bigger. None better. $15 and up. Will please you or money refunded. W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEYS—Prize-winning stock from Iowa, Nebraska and Wisconsin. 75 head—bred sows and gilts. Also weanlings in groups of from one to five and boar unrelated of Crimson Wonder, Golden Model, Alvancer, Golden Hero, Orion, Chief and Colonel blood. Price $10 and up. Haden Smith, Route 1, Box 97A, Woodland, Cal.

BLUE RIBBON HERD OF DUROC JERSEY HOGS—With 125 head of choice gilts and boars sold in year of 1915. I am going to sell 150 head in 1916. They sell because they are choice, and people are given a Square Deal on good ones. I have no $10 and $15 kind. I don't have to auction them off. John P. Daggs for prices, Modesto, Cal

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BERKSHIRES I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

REGISTERED BERKSHIRE WEANLINGS, both sexes, unrelated, $10 each. Also older boars and open gilts, or bred to a fine son of Grand Leader 2nd. J. M. Bomberger, Modesto, Cal.

DISPERSION SALE—Registered Poland Chinas. Grand big sows. Herd boars and pigs of all ages. Write quick for low prices and descriptions. Roy J. Turner, Trowbridge, Cal.

BLATCHFORD'S PIG MEAL weans easily and safely; no trouble; no milk. Write for free folder, "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

DUROCS OF QUALITY—Predominating bloods of Defender, Buddy Ky, Crimson Wonder. C. T. Thompson, Bishop, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

out of a cross between Otts Big Orange and Long King's Equal.

The Glenn county Berkshire association was organized recently, with fifteen members, representing five to six hundred purebred hogs. The officers of the association are W. S. Guilford, president; L. H. Tweede, vice-president; Carl Ley, secretary-treasurer. Board of directors: James Mills, L. H. Tweede, G. M. Clare, O. L. Roper, G. O. Lovett, Wm. Durbrow and W. S. Guilford. This new organization proposes to help establish more pure-bred herds in its district; its members agree not to sell a registered hog worth less than $20; and to hold hog sales which will be kept up to a high standard.

CATTLE AND SHEEP.

Livestock worth $1,223,500 has been shipped from Klamath county, Ore., between July 1, 1915, and Feb. 10, 1916.

More than thirty carloads of Nevada cattle have recently been shipped to the Montezuma hills in Solano county for pasturage.

The Supply Department of the Panama Canal will shortly establish a large cattle ranch on four thousand acres of land in the vicinity of New Culebra. It is proposed to purchase 10,000 cattle and to fatten them on the ranch for the use of the Supply Department.

The University of California recently completed a six-weeks test at Davis fattening 249 lambs for market. The results indicate that silage, whether made of Indian corn, dwarf milo, or sorghum, can be economically used in a ration which includes barley and alfalfa hay.

Richard Glanville has sold his Clear Creek ranch in the Winnemucca district of Nevada to Liotard, a Golconda sheep man. The property consists of approximately 1,700 acres of land with first right to the waters of Clear Creek, and the purchase price is said to have been in the neighborhood of $30,000.

Instead of herders being compelled to stay awake at night to shoot in order to keep coyotes away from their flocks they will be able to have it done automatically by a new invention which has recently been perfected by several sheep men near Salt Lake. The invention consists of an apparatus that stands on a tripod and consists of a tank from which dioxide gas is fed into a gun. It can be set to explode at various intervals and will run fourteen hours without attention. Attached is a light which burns constantly and throws a glare 300 yards. It can be operated all night for 7 cents.

A Chicago exchange says this about the sheep market in the east: "The sheep market has surprised nobody connected with the trade. The handwriting was on the wall in legible characters. Mutton and lamb have got into the same category of luxuries as lobster and terrapin, and the only limit that can be detected is the capacity of the consumer to buy the stuff. Mutton is not, however, carrying the entire load, as pelts are commanding $2.25@2.50 each, and pulled wool has never sold as high since Noah stocked his justly celebrated ark. Bets have been made that before the Colorado lamb crop has gone to the shambles $13 will be paid for fleeced lambs at Chicago, and Robert Matheson, who is rarely known to forecast higher prices, says the 1916 lamb crop will put more money into growers' pockets than

MISCELLANEOUS.

L. A. Bridinger shipped two Saanen bucks to L. D. Stocker at Hermosillo, Mexico, last week. They were selected from Mr. Bridinger's prize herd on the Braley stock ranch at Santa Rosa.

The Widemann Goat Co. recently filed articles of incorporation in Monterey county. This will be the largest concern of its kind in the world, the business consisting of the buying and selling of goats and the manufacture of condensed milk. Gonzales is the principal place of business.

Easton and Ward of Burlingame report having sold a Shire stallion foal, Rampton President, to a buyer in San Benito county. They have just recently purchased three foals from Henry Wheatley of Napa, one of which was a first prize winner at the P. P. I. E.

Louis Hestorf of Monterey county recently shipped a carload of dairy cows to W. C. Crow of Crows Landing.

ORGANIC MANURES HELP NITRIFICATION.

Dr. W. P. Kelley of the graduate school of tropical agriculture of the University of California at Riverside, reports that in observing the nitrification of dried blood in soil from plats where the University has carried on experiments with different types of fertilizers for the past eight years, he found that the dried blood was more rapidly changed into a form available for plant food in soils which had been consistently fertilized with organic manures than in soils which had not been so fertilized, and that nitrification proceeded more rapidly when the concentration of the dried blood was reduced.

SWINE.

CHESTER WHITES (O. I. C.'s)—Bred gilts, $30. Bred sows, $45. Weaned pigs, $10. Also a fine herd boar 20 months old. D. Bache, Hollister, Cal

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen A. Day, Box 1140, Sacramento.

RANCHO RUBIUS—Durocs all sold except one service boar and a few October pigs. Spring litters will be "best ever." Elmer Lamb, Ceres, Cal.

ROSELAWN STOCK FARM—Registered Poland Chinas and Shorthorn cattle. Young stock, both sexes, for sale T. B. Gibson Estate, Woodland, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Price and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money makers. Satisfaction or mney refunded. Geo. V. Beckman & Sons, Lodi, Cal.

PLAINFIELD STOCK FARM—Registered Berkshires and Durocs. Young stock for sale, both sexes. H. M. Bullard, Woodland, Cal.

PIGS OUT OF SUPERBA—Panama-Pacific Grand Champion Poland China. Booking orders now. Chas. R. Hanna, Riverside, Cal.

REGISTERED DUROCS—Fall farrowing. Choice boars and gilts. Crimson Wonder and Model strains. Felton & Hoyt, Hanford, Cal.

BIG TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS—The big little half-ton kind that have quality. Prize winners. Hale I. Marsh, Modesto.

REGISTERED DUROC-JERSEYS—Service boars and fall pigs. Also wo mature sows—bred. S. S. Southworth, Napa.

REGISTERED DUROCS of guaranteed breeding. Bred gilts, service boars and fall pigs. H. E. Boudier & Son, Napa.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

REGISTERED HAMPSHIRES—Winners at P. P. I. E. Stock of all ages. W. T. Gatton, Box 231, Gardena, Cal.

REGISTERED POLAND CHINAS—Stock from champion herd at Exposition. Dimmick Bros., Lemoore, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED BERKSHIRES—Big-boned. Cholera immune. Riccomi Bros., Mountain View.

REGISTERED BERKSHIRES — Weanling pigs, $10 each. G. A. Casey, R. 7, San Jose.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES — Prize-winning stock. Sunnyside Stock Farm, Perkins, Cal.

REGISTERED BERKSHIRES—Young boars for sale. Alexander and Kellogg, Suisun, Cal.

REGISTERED POLAND CHINAS of the big-bone type. For prices write James D. Twohey, Livermore, Cal.

ROSS' DUROCS—A tip-top lot of weaned pigs. Also 27 bred sows and gilts. R. J. Ross, Route A, Modesto.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

PURE-BRED BERKSHIRES—Stock of all ages. Brae Bourne Ranch, Route 3, Box 172, Santa Rosa, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderas Ranch, El Cajon, Cal. M. S. Allen, Manager.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. T. D.. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRE PIGS—Write or call. Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Lakeport, Cal.

REGISTERED POLAND CHINAS—Large type C. M Stetson, Route "A," Ceres, Cal.

DUROC-JERSEYS—Registered boars and gilts. John Decker & Sons, Turlock.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

FAIR OAKS RANCH, WILLITS, CAL.—Registered Duroc and Berkshire Swine.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

CHAS. GOODMAN — Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED BERKSHIRES—All ages. Choicely bred. U. Hartman, Ripon, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

READOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED DUROCS—All ages Either sex. W. A. Pack, Hollister, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

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REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco, or H. J. Macomber, Paicines, Cal.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale Sired by Landseer 379318, grandson of imported Villager 295884.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON-NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

HEREFORD BULLS—H. H. Cable, Diamond G. Ranch, Esparto, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

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FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

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BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers, Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets, Hanford, Cal.

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DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

FOR SALE—Milch Goats. Toggenburg buck. Grade does. Geo. Langlois, Auburn, Cal.

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SIRE — Imp. Ferbrache's Cocot, No. 17285.

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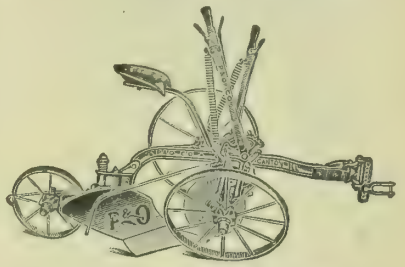
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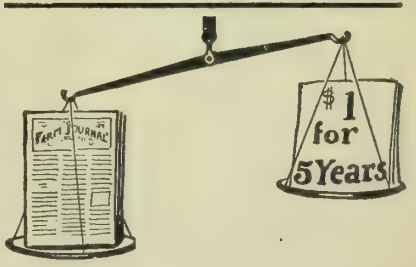
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Some Questions About Hog Selling.

To the Editor: I have understood from numerous published statements, that California produces only a small proportion of her pork products. It has been given out as about 6 per cent of the amount consumed by the people of California. According to reports issued by the federal government (statements of Senator Smoot of Utah on the floor of the Senate January 13th, 1916) there were exports in the year 1913 of cattle, hogs, horses, sheep, mules, and so forth, $5,600,000, while for the year 1915, they were $96,200,000. In a report furnished by the Secretary of Labor to Senator Stone of Missouri and published in the Congressional Record January 13, 1916, the total exports from the United States to belligerent countries of Europe, to Canada, Japan and Asiatic Russia, etc., were as follows:

Articles	1915	1913
Bacon	$ 6,978,754	$2,380,999
Hams and shoulders	2,768,800	1,853,314
Beef, fresh	1,345,320	37,055
Beef, canned	463,638	48,495
Total ...	$11,556,512	$4,319,863

In view of the published statistics, it will be interesting to receive some explanation as to why the farmers in central California are being offered four and one-half cents per pound for actual grain-fed hogs.—M. A. R., San Joaquin Valley.

[We agree with you that the basis of price fixing with livestock is a baffling one to the ordinary layman, so we secured the following advice from a responsible acquaintance with a complete understanding of the subject. From him we learn that if all the hogs which have been butchered during the time for which you give figures were ham and bacon the increase in exportations would have had, probably, a more beneficial result on the price of live hogs than it did. But the marketing of those two products does not nearly solve the problem. From all accounts soft corn and high grain prices seem to have had more to do with the eastern prices than anything else, as the farmers figured there was more money in selling their grain than in feeding it and accordingly dumped their hogs. This condition prevailing all over the country caused some of the biggest runs of hogs at all of the markets ever experienced.

Now, as has been said, if all of the hog was bacon and ham the increased outlet would have taken care of these heavy runs, but there is the lard, fresh meat, etc., to be taken care of also, and at that time lard could not be shipped to Germany, our heaviest customer, and the surplus of cuts which had to be marketed fresh bore down that market. The result was that the supply was greater than the demand and that occasioned a lowering of prices to retard further offerings.

The exportation of meats of all kinds to countries at war in Europe does not affect our market as there is no increase in exportation of either pork or beef from this coast on that account. The only way that our market would be affected would be to the extent that these exports would affect prices in the east, and the weakness of their market this winter has undoubtedly had some effect on the situation here.

All we can say about the fellow who bought your hogs at four and one-half cents a pound is, that he was a better buyer than you were a seller. The lowest price paid for hogs weighing 150 to 250 pounds, delivered and weighed off cars in San Francisco during 1915 was six and one-quarter cents, that being the market for about three weeks. That was the first time that hogs had sold at that price in this market for a long term of years, our present quotations showing a much higher level.

The local buyer naturally has to have something for his work and the shrinkage in shipping, but two cents a pound is too much. You can market your hogs direct if you have a carload, and any of the San Francisco packers will quote you prices f. o. b. San Francisco which are good for a week. If you haven't enough for a carload, arrange with your neighbors to make up a carload between yourselves.

At the present time California is producing about 50 per cent of the pork consumed in the State, although it was not more than 35 per cent two years ago.—Editors.]

RELATIVE VALUE OF BEETS AND BEET PULP.

To the Editor: Will you please tell through your paper, what the food value per ton is of cow beets for a dairy, and how they compare with beet pulp, also the price per ton? I am now feeding beet pulp, but have a chance to get the fresh beets if wise to make the change.—E. H. F. O.

[Answered by Professor F. W. Woll, University Farm, Davis, Cal.]

[I take it that cow beets is another name for some variety of mangels or common beets. Varieties of this field crop vary considerably in water content, and therefore also in feeding value, but there is no appreciable difference in the average figures for mangel and beet pulp as regards the percentages of total feed components or digestible nutrients which they contain, and they may on the average be considered of similar feed value, ton for ton. Neither of these feeds has a definite commercial value, as they must be fed on or near the ranch where they are raised, or the factory, respectvely. As ten tons of wet beet pulp will make about a ton of dried pulp, one can arrive at a fair basis for comparison of values by assuming that mangels are worth about one-tenth of the prevailing market price for dried beet pulp, say $2.00 to $2.50 a ton. Sugar beets which contain approximately twice as much dry matter as mangels would be worth at least twice this figure for stock feeding.]

WHO HAS LITTLE POLAND CHINAS?

To the Editor: Please inform me through your columns, where I can get the Little Poland China hogs.—J. W. Wimmer, McKittrick, Cal.

[We presume you mean medium type Poland Chinas. Many of our advertisers breed that type and we will leave it to their progressiveness in booking orders to get in touch with you. Some of them state in their announcement that they have the medium type.—Editors.]

On account of the recent importations of Corriedale sheep to this country from New Zealand, breeders have organized the American Corriedale Association. It is understood that the new association will maintain a flock book for all sheep of this breed tracing to Corriedale flocks recognized by the Sheep Breeders' Ass'n of New Zealand.

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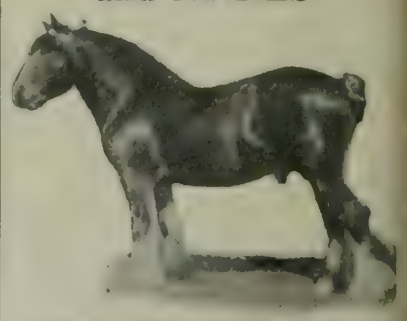
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Raise the Horse That is Wanted.

There is no doubt but that the army horse buyers who have been active in all horse markets of the country have been discriminating buyers, and horse dealers in California maintain that instead of taking the culls, these buyers have taken only the best.

According to Carl N. Kennedy of the Oregon Agricultural College the condition in Oregon is worse than in California because the small, inferior horses which should have been sold are now on hand for the foundation of future herds. While we have many good mares on the farms of this State, his comments on the situation there are equally applicable here.

He says that many people are asking what is to be done to improve these horses so that those who are in the business at the present time may stay in it and derive a satisfactory income from their investments. The very first thing that will have to be done before advance is made is to replace the scrub stallion with a good pure bred stallion just as fast as it is possible.

In the next place these stallions must be given better care and more feed during the winter.

With sires such as are being used at the present time it cannot be expected that horses will be improved, since the sires themselves would scarcely make marketable geldings. We cannot get good, big, marketable horses from small, under-sized scrub stallions As long as we use mongrel sires we will raise a class of horses which will not only be hard to sell at a profit but hard to sell at any price.

With the advent of the auto and other forms of gas power times are changing and there is not now the demand and use for certain kinds of light horses that there has been in the past. To meet these changed conditions horsemen must change their method of breeding and raise what the market calls for.

WHAT FEEDS FOR COWS ON 10 ACRES.

To the Editor: As I am new in California and starting a dairy on ten acres, would like to know what crops would be best for me to plant. I would like to raise as much of my feed as possible. Would also like to know a good ration for a milk cow. —J. A. A., Merced.

[Alfalfa is probably the best thing for you to grow on your ten acres, at least for the time being. Later you might use a small patch of your land each year for stock beets, as they would be valuable as a supplement to alfalfa hay and would also be valuable for rotation purposes, assuming of course that your soil is not too heavy, otherwise they might be hard to cultivate, but we have seen stock beets growing well in pretty hard ground. Of course many dairymen here feed nothing but alfalfa hay, but it is being more generally recognized that better results are obtained where other feeds are used in connection. Corn silage would be the thing for you if you had more land or could rent outside land. Dried beet pulp is also a good feed to use in connection with alfalfa hay. The best ration to use varies according to the price of the different feeds. Prof. Woll has answered several queries along this line in these columns recently which should be of help to you in that respect.—Editors.]

WILL BEETS FOR DAIRY PAY?

To the Editor: Will it pay to raise beets for stock around this part of the country? The soil is sandy. If so, when should I plant, and how should I cultivate?—A. A. F., Livingston.

[Beets are an excellent feed for stock as a supplement to alfalfa hay and will improve the physical condition of your land. Both the Long Red Mangel and the Yellow Tankards are good beets for stock feeding. You can plant any time now. Plant thinly in drills two and a half feet apart for horse cultivation, using about five pounds of seed to the acre. Cultivation should begin as soon as the rows can be seen and kept up, not only to conserve moisture but to keep the lower strata of soil reasonably loose so that the soil may be displaced by the expanding beet. Beets should be thinned when the seedlings are small, say from two to four leaves, standing eight to ten inches in the row, according to the soil. Beets can be grown for winter feeding by sowing early in the fall on irrigated land. They can be sown later in the fall and during the winter and make a crop by rainfall. Or they can be sown late in the winter for midsummer feeding, being kept growing by irrigation after the rains are over.—Editors.]

BOILER FOR 300 BOTTLE DAIRY.

To the Editor: Would a one and a half horse power vertical steam boiler supply enough steam to operate a single bottle washer and to sterilize about 300 bottles at a time in a sterilizing oven; all other utensils such as buckets, cans, etc., to be sterilized by live steam? Would the bottles that have been washed in water containing washing powder need to be rinsed or would steaming be sufficient?—H. F., San Luis Obispo.

[A 3-horse power boiler would be better for your purpose than a 1½-horse power, as the sterilizing oven and bottle washer would sometimes pull the water down in the smaller boiler; and the additional cost in the larger one would be slight. If you use washing powder in the water to wash the bottles, you should rinse them off after steaming.—Editors.]

SHEEP FOR RANCH USE.

About 130 sheep are kept entirely for ranch use by the Santa Margarita Land and Cattle Co. of San Luis Obispo county. They lamb January to March on natural grass pasture at the home ranch and run in the hills till grain stubble is ready for fall and winter grazing. There are four ranches under the same management, aggregating about 75,000 acres. E. W. Black is foreman for the Reese Estate which owns or leases these ranches. Purebred rams are used.

W. J. Hackett of Ceres and R. H. Hogg of Denair recently sold Jersey bulls to Nels Larson of Modesto.

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SPRING TROUBLES WITH POULTRY.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Several inquiries as to what ails the poultry now that the weather is improving call for some consideration. Fowls that have been properly sheltered and fed during the winter months should be so busy laying that they have no time to think of anything else. But those that have not been so favored are liable to several diseases in the early spring months.

In some localities a slight cold soon assumes the form of roup if it is not noticed right away. If one or several hens are noticed sneezing there should be no delay about it. The very first thing is to give a dose of physic in some form; one of the most convenient is a dose of Epsom salts, a tablespoonful to a gallon of water, taking all other water away from them. If this is not possible, give the salts in a small quantity of moist mash, seeing that it is evenly distributed. This "first aid" is often all that will be needed if caught in time, but to make sure give a dose of powdered sulphate of iron in a little moist mash the next morning, a tablespoonful of the powder to a dozen hens. This is a tonic, and being mineral, supplies the hen with a much needed element in the blood.

I don't like doctoring the drinking water, because in most cases it keeps the hens from drinking all they need and when they are not quite up to the mark they really need to drink more. Epsom salts is colorless and almost tasteless, so this can be done without harming the hens.

In case the cold has not been taken in time, and roup has gotten a hold, it is safer to send the case into hospital at once. Washing the eyes and nostrils with peroxide of hydrogen, giving nourishing food, and a pill made of red pepper and carbonate of iron, once a day will often put them on the right road; if they don't mend quickly with these simple remedies souse their heads in coal oil and give a good physic, following it up with good feed, soft warm mash is best, and a liberal dose of sulphate of iron, half a teaspoonful to a hen.

Birds sometimes carry diphtheria germs, dropping them among chickens that are feeding. This I know from experience, as I lost some good hens one spring where a flock of birds lighted to eat the remnants of the chickens' supper.

As this yard was some distance from the rest of my flock the disease was confined to that one yard. If the smell is recognized as diphtheria it is safer to kill and burn the fowl at once, as it is dangerous to attempt a cure.

Some hens will respond at once to a little tonic, and the very best is the cheapest, nature's own remedy—a grass run. Get the ailing birds out on the grass and they will soon pick up, providing you feed them right and keep them clean.

For all contagious diseases, for worms and many other chicken troubles, there is nothing that will give so much satisfaction for the least expense as a good spray pump and a few gallons of distillate. Where chickens have worms, you may give all the medicine you like, but if the worm eggs are left on dropping boards, floors, and feed boxes, they are again taken into the hens' system to create another batch of worms. Take the spray pump and distillate along and destroy the eggs and your hens will soon be free from worms, especially if you feed something to rid them of them.

Ration for Rabbits.—One of our subscribers asks how she can fatten rabbits? Feed them oats—or oatmeal—milk and bread, carrots or ground barley, but not alfalfa meal. That will never fatten rabbits. Rolled barley is not bad, but oats or oatmeal is much better, in fact it is the best fattener for rabbits.

CHICKENS SUPPORT ORANGE ORCHARD.

[Written for Pacific Rural Press.]

Fourteen dollars a day net from the eggs of 850 White Leghorn hens hatched last June and run in a 5-acre orange orchard, is the record of N. Wilson of Ontario for the week ending Feb. 5.

He bought a thousand baby chicks June 13, 1915, hatched from the eggs of selected Hoganized hens. They laid their first egg Nov. 26. There was a big daily increase until 10,235 eggs were laid in January. They laid 534 eggs Feb. 8 and 536 Feb. 9, so Mr. Wilson expected 15,000 eggs in Feb. The week ending Feb. 5 he sold 11 cases for $124.80 after express to Los Angeles was paid. The feed of whole gyp corn, and bran in self-feeders, and alfalfa hay costs $3 per day, so the net was $103.80 for seven days' eggs.

No roosters are kept, but Mr. Wilson realizes the value of his fowls and expects to get some of the best Hoganized roosters next summer. He will then raise enough of his own chickens to replace his flock every two or three years. He figures that with so much run and shade, the hens, which are so bright and vigorous now, should produce a large percentage of fertile eggs.

The orchard is fenced with square mesh woven wire six feet high around most of the place; less around the house. Only occasionally does a hen fly out. A cross fence divides it into halves.

Lumber for a chicken house was ordered after the chicks were ordered last summer and Mr. Wilson built the house himself before the chicks arrived, in the dividing fence so they could be turned into either half of the orchard. It is 12 feet wide and 196 feet long. About half of the house lengthwise is taken up by droppings boards close under four lines of roosts, high enough to clean without bending over. The boards were put in tight, so the floor of the house would all be available as scratching shed. Moist winter weather swelled and buckled the droppings boards so they will be loosened and covered with galvanized iron. A line of nests is hung under the front edge of the droppings boards. The nests open toward the back of the house so they will be somewhat dark. Their frontsides are composed of 6-inch boards 12 feet long hinged so they can be raised and the eggs reached from the front. Five dripping fountains supply fresh water, and alfalfa hay takes the place of greens. The lower leaves of the oranges are somewhat eaten off, but owing to cold, wet weather in blooming last spring but little fruit was set anyway. That was the primary reason that the chickens were gotten, to furnish an income.

"I know also that the hens will help support the orchard," says Mr. Wilson, "until I become too opulent to keep them any more."

MOTHER TURKEY KNOWS HOW.

To the Editor: I wonder if your readers care to hear my experience with turkeys here in the Moreno, Allesandro Valley, out on the Box Springs Grade? I find that if you wish "good luck" with turkeys let the mother turkey do the hatching and let her be free to go from the nest when she likes. Don't disturb her when hatching, for when the eggs have hatched she will get off when it is time.

I feed very lightly with onions—green onions chopped—or with onions cut fine and well mixed with rolled oats. Maybe I give them a hard boiled egg at times. Don't bother with cooking bread for them, but if you have some stale crusts dip them in water, and then squeeze dry. For drink I give them just water.

There is no need to worry with the poults, for the mother turkey will look after them. I leave some weeds for them to run in for shelter. Be careful and don't put them in a dirty coop alive with vermin and don't forget the onions.

Mrs. Frances A. Greene.

POULTRY NEWS NOTES.

[By Geo. H. Croley.]

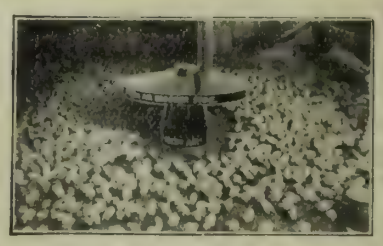
According to a report from A. Warren Robinson, Secretary of the Santa Cruz Poultry Association, the annual income that the members and associates of that association receive from eggs and poultry is over $500,000. One member reported a gross income for 1915 from 800 hens of $3,126.99, while another member with 340 hens on one acre of ground found in hand a cash dividend of $555.89 after providing for all expenses including taxes, insurance, and six per cent interest on his investment of $1500 in that portion of his property and equipment devoted exclusively to the poultry.

At a meeting of poultry keepers recently held in Petaluma, State Market Director Weinstock urged them to secure co-operation through the organization of a joint stock company. It was suggested that a share of stock valued at $25 should be held by each poultry keeper.

A little salt stops toe picking among brooder chicks. Put a level teaspoonful in one quart of their drinking water.


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STANDARD-BRED SINGLE-COMB WHITE LEGHORNS.

Hatching Eggs, $1.50 per setting	$5.00	per 100
Baby Chicks, February delivery	12.00	" 100
" " March "	10.50	" 100
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WHITE PLYMOUTH ROCKS.

Hatching Eggs, $2.00 per setting	$ 7.00	per 100
Baby Chicks, 20c each	15.00	" 100

In the Utility Class at the P. P. I. E. Poultry Show our Leghorns received 4 awards, and on Eggs 1st and 2nd.

Our White Plymouth Rocks received 7 awards, and on Eggs 1st and 3rd.

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PACIFIC PIONEER
AVAILABLE PROTEIN FISH MEAT MEAL
FOR POULTRY
CHEAPER TO FEED
NO FISHY FLAVOR

WHAT IS A FANCIER?

To the Editor: In reading poultry literature I notice reference to fanciers, breeders and keepers. Can you make it plain to me what, if any, difference there is in the meaning of these terms?—J. C., Stockton.

[Answered by Geo. H. Croley.]

[A simon-pure fancier is a person who breeds fowls or other domestic animals solely for the pleasure that may be obtained by successfully improving them in beauty and usefulness. He is sometimes referred to as an amateur breeder. A true fancier never expects to make money by his work and study, and many who have means and are independent also aim to expend a certain or an indefinite sum of money in addition to their efforts, simply from public welfare motives. A breeder is one who makes it a business to produce desirable fowls or animals for sale to others who may require them, usually for breeding purposes, or for use in other directions, for instance, horses for driving or teaming, shepherd dogs, etc.

A keeper is one whose business is the production or keeping of fowls or animals for utility purposes to supply his own wants or for sale in the general market. It is this class that supports the breeder and makes it profitable for him to devote time, money and special care to producing breeding stock that is superior to the general run of fowls and animals. Occasionally a bunch of breeders will get together and talk one another into the belief that they can ignore the wishes or demands of the great mass of poultry keepers, or keepers of other animals, but they soon learn that it will not work.]

BLACK SIBERIAN HARES.

To the Editor: I wish to know where Black Siberian Hares can be purchased.—B. C., Winters.

[Answered by Geo. H. Croley.]

[We have never seen any of this breed of hares on exhibition in California. They are rare and we doubt if any are to be had in California, but if any reader has them for sale let us hear from him.]

PRESERVING EGGS IN WATER-GLASS.

To the Editor: I wish to pack a large amount of eggs in water-glass. Can I get the silicate of soda and make the solution myself, and can you tell me how it is made?—H. H. P., Sebastopol.

[Answered by Geo. H. Croley.]

[The silicate of soda solution—water-glass syrup—is so readily obtained at moderate price, it is not economical to buy the flakes and prepare the liquid by dissolving them for the reason that the commercial solution, such as is sold by the stores, is the original form. It is usually produced as a by-product and is sold at a low price, whereas to produce the flakes, this solution must be put through an expensive process which makes it more costly than the solution. Some add ten or twelve gallons of water to this commercial solution or syrup to make the liquid in which the eggs are preserved, but the best results are to be had if only eight gallons of water are added to one gallon of syrup.

If you have a copy of "California Poultry Practice" turn to page 152 on which are complete directions for packing and handling eggs when this substance is used.]

SAVE ALFALFA LEAVES.

So harvest alfalfa as to conserve the leaves, if you want nutritious hay. Such is the moral pointed by Prof. M. E. Jaffa of the Division of Nutrition of the University of California. He says that a sample of alfalfa hay taken from a stack at the Stockton State Hospital shows 17 per cent protein. This percentage is about that which every sample of first-class alfalfa hay should yield, but many samples analyzed do not yield 10 per cent protein.

The difference between the protein the hay contains and what it should contain, is due to two main causes: the admixture of other hays, and carelessness in harvesting, bringing about a preponderance of stalks of the alfalfa with a minimum amount of leaf.

SALT LAKE ROUTE

BE SURE YOU'RE RIGHT

Then Go East.

Which is not quite what Davy Crockett once said, but it is applicable to our purpose to suggest that when you are considering which way you will go East, next time you go, you consult a Salt Lake Route ticket agent; 'tis a certainty that you will be right if you go East that way and that you will be thoroughly pleased with the excellent service of that line, with its three daily trains through to Chicago and other points via Salt Lake City.

Any ticket agent will be very glad to furnish full information.

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Poultry Breeders Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

PROFESSOR DRYDEN, THE FAMOUS 300-EGG HEN SPECIALIST, STRONGLY RECOMMENDS APRIL CHICKS—Orders now being taken for April delivery from our flock of 635 White Leghorns, which averaged 171.2 eggs each the past season, flock housed together. We breed for heavy winter egg production. Price $10 per hundred. Order at once. BROOKE FARM (Rancho Del Paso), Office 807 J St., Sacramento, Cal.

LIVABLE BABY CHICKS—We are supplied by reliable Breeders and experienced hatchers. Better chicks cannot be had from any source. All varieties, any number. High quality birds, baggain prices, breeders, laying hens, pullets. **Free exhibit.** Everything in Poultry, Pigeons, Rabbits, Dogs, Cats, Canaries, Pets. Give us a call or write. **Fanciers' Exchange,** 642 S. Main St., Los Angeles, Cal.

ALL KINDS OF BREEDING and laying hens, roosters and pullets. Petaluma incubators, new annd used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minorcas, Buff, White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards. 2550 San Pablo Ave., Oakland, Cal. **Closed Sundays.**

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. Lay most when prices highest, make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for heavy laying. Eggs, chicks, stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

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WELL HATCHED AND STRONG day-old chicks from healthy vigorous breeders. White and Brown Leghorns per 100 February, $11, March $10, April $9. Reduction in quantities. Let us send you our announcement. San Jose Hatchery, 373 Meridian Road, San Jose, Cal. **Chicks well hatched are half-raised.**

WHITE PLUMAGE POULTRY FARM and Hatchery. Sells day-old chicks from healthy, vigorous breeders. White Leghorns at $10 per 100, $90 per 1000. Barred Rocks and Rhode Island Reds at $15 per 100. We sell the Victor Incubator and Brooder. Circulars free. H. A. Schlotthauer, Exeter, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396, Los Gatos, Cal.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

WHITE PLYMOUTH ROCKS—If you are interested in high-class stock, and want to buy as good as there are anywhere, write Mahajo Farm, P. O. Box 597, Sacramento, Cal., for catalogue Chicks. Eggs or Breeding Stock. Awarded all first prizes at California State Show, 1916

BABY CHICKS—All sturdy youngsters from good stock and hatched right. Rhode Island Reds. Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

WHITE AND BROWN LEGHORNS—If you want the best and are really interested in the highest class of stock write Mahajo Farm, P. O. Box 597, Sacramento, Cal., for catalogue. Chicks, Eggs, Breeding Stock. Awarded all first prizes at California State Show, 1916.

BUFF ORPINGTONS, BUFF LEGHORNS, BOURBON RED TURKEYS, BUFF DUCKS—Winners at Riverside. Pasadena, Los Angeles and San Francisco. Breeding stock. Hatching eggs. Baby stock. Free illustrated booklet. The Ferris Ranch, R. 2, 144D, Pomona, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., INC., Poultry Supplies, San Francisco.

WHITE LEGHORNS—RHODE ISLAND REDS—Trapnested and Hoganized. Breeding from not less than 200 egg birds. Booking orders now. Hatching Jan. 25th-June. Monta Vista Poultry Farm, Z. W. Wright & Son, Ontario, Cal.

CHICKS—HATCHING EGGS—R. I. Reds, White Leghorns—settings: 100's, 10000's. Our famous heavy layers. Hatched right in $60,000.00 Brick and Concrete Hatchery. PEBBLESIDE POULTRY FARM, Sunnyvale, Calif.

POULTRY PAPER—44-124 page periodical, up to date; tells all you want to know about care and management of poultry, for pleasure or profit; four months for 10 cents. Poultry Advocate, Dept. 239, Syracuse, N. Y.

BABY CHICKS — White Leghorn, Black Minorcas. We guarantee safe arrival and full count. Strong, vigorous chicks. 1916 catalogue contains instructions on care of baby chicks. Free. Lasher's Hatchery, Petaluma, Cal.

THE SANTA CLARA VALLEY HATCHERY has the goods to offer in 9 varieties of baby chicks and will book orders for Ducklings—White Pekins and Indian Runners. Route 6, San Jose, Cal.

BLACK MINORCAS—Pure blood, prolific-laying strain. Guaranteed first class. 20 years' experience raising Minorcas. Chicks, $12. Eggs, $6 per hundred. E. Mosher, Napa, Cal.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

BUFF ORPINGTONS—Eggs from high-class matings that have correct color, shape and large size. Choice exhibition and utility stock for sale. E. J. TALBOTT, San Mateo.

FOR SALE—Barred Rock eggs from fine large prize-strain. Extra fine layers. $1.50 per 15; $7.50 per 100. Miss F. W. Buckley, R. F. D., Box 71, West Berkeley.

BABY CHICKS AND EGGS—Hoganized Black Minorca, White Leghorn stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

HATCHING EGGS from Hoganized S. C. White Leghorns. Bred to lay. High fertility this year. Send for circular. R. H. Dickinson, Los Gatos, Cal.

WHITE ORPINGTONS AND BUTTERCUPS—Hoganized and Tested—220 egg strain breeders. Chicks and eggs for sale. M. S. Woodhams, San Mateo, Cal

S. C. W. LEGHORN EGGS for hatching from selected, strong and vigorous hens. All 200 egg type. 15, $1.50; 100, $6. Jay Maxwell, Madera, Cal.

BABY CHICKS from Hoganized Single-Comb White Leghorns, 4th and 5th awards at P. P. I. E. for 280 egg type. Tupman Poultry Farm, Ceres.

BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trapnested stock. Fairmead Poultry Farm, Fairmead, Cal.

HERE IT IS—White Rock baby chicks. $15 per 100. Hatching eggs, $1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ceres, Cal.

ORPINGTONS BUFF AND WHITE—Black Minorcas and Carneaux pigeons. Cockerels ready for service. Susan Swaysgood. Route 2, Pomona, Cal.

WHITE WYANDOTTES—Blue ribbon winners. Cockerels, Pens, Eggs. Runner Ducks, $1 each. R. W. Stawetski, Route 2, San Jose, Cal.

EVERYTHING IN THE BARRED ROCK LINE except poor ones. Write for prices and prize-winning list. Barred Rock Schmitt, R. 1, Visalia.

BLACK MINORCA, BUFF ORPINGTON, R. I. Reds; eggs for hatching. Also cockerels for sale. Mrs. R. A. Holdridge Box 282, Dixon, Cal.

EAST SACRAMENTO HATCHERY—Capacity 16,000. Special low price for large lots of chicks. Box 1206, M St. Road, Sacramento, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and cockerels. B. C. Quessenberry, R. 4, Lodi, Cal.

SPECIAL—Barred Rock and Rhode Island Red chicks, $12.50 per 100. Safe arrival guaranteed. G. L. Hawley, Madera, Cal.

TAYLOR'S RHODE ISLAND REDS—First pen San Jose, first pen Sacramento. Eggs and chicks. 4001 York Ave., Sacramento.

TRAPNESTED LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

RHODE ISLAND RED BABY CHICKS and Eggs. Heavy laying strain. Send for circular. Rosedale Ranch, R. 1, Hayward, Cal.

BUFF ORPINGTONS—Eggs, $150, $2.50. Runner Ducks, $1.50. Baby Stock. Glendale, Fleming Ave., San Jose, Cal.

TRAPNESTED LEGHORNS — White and Buff Stock. Eggs, chickens. Arthur R. Schroeder, Box 179R, Mountain View, Cal.

BABY CHICKS—White Leghorns exclusively. Utility stock. 13 years' experience. F. W. Wilson, Route 7, Santa Rosa.

BABY CHIX—R. I. Reds; Black Minorcas; White Leghorns. Strong thrifty stock. Adelia E. Denton, Los Gatos, Cal.

FOR SALE—R. I. Red eggs for hatching, from good laying stock. W. D. Cornwell, R. 3, Box 81, Laton, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

S. C. RHODE ISLAND REDS—Hatching eggs. Baby chicks and cockerels. Mrs. V. P. Hewitt, Dixon, Cal.

SINGLE-COMB RHODE ISLAND RED—Eggs for hatching from good-laying strain. Wm. Swegles, Modesto, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

BLACK MINORCA COCKERELS — Eggs, Trios. Reasonable. Chester Fosgate, Campbell, Cal.

BUFF WYANDOTTE EGGS—$1.50 and $2 per setting. C. B. Christiansen, Dinuba, Cal.

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BELGIAN HARES—Young stock for sale. Hurd Bros., St. Helena, Cal.

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BUFF DUCKS—Weigh like a Pekin and lay like a Runner. Winners at Panama-Pacific and Los Angeles. "Victoria" has laid 126 large, white-shelled eggs in 132 consecutive days. Eggs. Baby Ducks. The Ferris Ranch, R. 2, 144D, Pomona, Cal.

RED BOURBON TURKEYS—Eggs $5 per setting (thirteen eggs). My Turkeys won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914. Just as good this year. A. E. Balmer, Alhambra Valley, Martinez, Cal.

BOURBON RED TURKEYS—Four firsts on males at Panama-Pacific and Los Angeles 1916. The best Bourbons west of the Rockies. Eggs. Poultry. The Ferris Ranch, R. 2, 144D, Pomona, Cal.

MAMMOTH BRONZE TURKEYS—THE BEST IN THE WEST—Extra special prices. Further information cheerfully given. Write now to secure best birds. Geo. A. Smith Corcoran, Cal.

HART'S BRONZE TURKEYS — Vigorous young stock. Eggs by the setting or incubator lots. Circulars free. Albert M. Hart, Clements, Cal.

FOR SALE—One pen of China Pheasants, one male and five females. L. R. McCoy, R. I. Box 205. Stockton, Cal.

MAMMOTH BRONZE TURKEY EGGS from selected stock. Also young Toms. M. M. Reiman, Pianada, Cal.

PHEASANTS—Golden and Ringneck. Eggs from April on. T. D. Morris, Agua Caliente, Cal.

FOR SALE—Thoroughbred Rouen Duck Eggs, $1.50 per dozen. Mrs. Emma V. Miller, Farmington, Cal.

The Home Circle Page of the Pacific Rural Press

MRS. BEST'S BULLETIN.

My dear Friends: I have to utter a piercing caution against the boot with the fur around the tops. Shun, oh shun, the boot with the fashionable fur around the coquettish tops. For why? For why, indeed. Don't I hear from Oklahoma City that the staid matrons of that not too mollycoddle town went to the city fathers to complain of flirting on the streets, and declared for one thing that fur-topped bootes incited it? And don't I hear from Winsted, Conn., that an unsuspecting young lady wearing footgear embellished with fur had a cat jump at it and gnaw it for a mouse? Such are some dangers that lurk in styles.

A riot of spring blouses in Georgette crepe and the heralded high colors has struck the metropoli on the Pacific. One can have a very decent selection for $5 in plain ones. Those with frilled and flowing lapels are coming into evidence, however. They are particularly chic in stripes.

New things in sweater coats of knit silk are to be discerned with the lining of different color, giving the outer surface a changeable effect. Loose sashes are used with them. A very few of these sweater coats are fringe trimmed. A stunner was a wine-colored one with a wide band of black fur trimmed at cuffs and skirt.

Full-skirted silken sport coats in subdued plaids of grayish or sepia tones are being introduced; they have sashes of the some material and sometimes side buckles.

Sport skirts, with yokes or without, are in solid colors, very vivid. When worn with blouses of a different color, as is recommended, the result is enough to fix every eye within a mile. One such skirt is of crimson with wide white trimming.

About the neatest thing in headgear, to my taste, is a plain black hat of fine straw, brim turned down, and trimmed with a 5-inch width of mouse gray Italian silk with a high upstanding bow of severe plainness. Yet the effect is bewitching instead of severe. This "lid" was $5.95.

You can get the new shades of rose-colored silks in double widths at $1 to $2 a yard.

Hist! they have black underwear now, in the everlasting Georgette crepe and Chantilly lace. This is to wear with the black blouse or gown.

Not only have they white gloves with black stitching but some have a zigzag bar of black around the wrist, which insures these gloves being distinguished from any others.

Some heavy plain scrim for curtains in 40-inch widths went this week at 12½ cents a yard. Figured scrim, in narrower sizes, was priced the same.

Having purchased some I will now draw the curtain until the week rolls by. Devotedly,

Rosabella Best.

THIS WEEK'S BEST HOUSEHOLD HELP.

To make a serviceable furniture polish—Equal parts of turpentine, linseed oil and vinegar; mix this together in a bottle and apply with a soft rag.

PUFF PASTE, OR PASTRY DOUGH.

(This Week's Preferred Recipe.)

Puff paste is made without leavening of any sort. Flour that has much gluten in it will give best results. One pound sifted flour with about one teasp. powdered sugar; the yolk of one egg beaten is to be poured into a place hollowed out in this flour, and the whole worked into a firm paste, adding water as necessary. Divide three-fourths pound of cold, hard butter into three parts, roll out the paste, put one part of the butter on half of it, fold over the other half and roll out; then treat it with another part of the butter, roll out; and then use the last part of butter. Then fold over again several times and roll out. The idea is to have alternate layers of butter and dough as thin as sheets of paper if possible. It is best to put it on ice or let it cool as often as it seems to become sticky while rolling, until the dough is firm. It can hardly be rolled too often. This dough will keep in a cool place several days. It is the basis for all sorts of pastries, tarts, etc. If properly made, paste of this sort one-quarter inch thick will raise to an inch in thickness when baked. To make it stick when folded over into tarts, brush the edges with egg yolk.

PRAISES "RURAL" RECIPE FIFTEEN YEARS OLD.

This item belongs in the Experience Exchange, but it is of so gratifying a nature that the temptation is irresistible to make much of it. There comes from Route 2, Box 45, Sebastopol, Cal., a recipe for sponge gingerbread with the enthusiastic comment by the contributor that she saw it 15 or more years ago in the Rural Press and has used it ever since and it is excellent. And here is that recipe, which sounds as good as it should taste:

One cup sour milk, one cup molasses, ½ cup sugar, 1 heaping tablesp. lard or other shortening, 1 teasp. baking soda, 1 egg, salt to taste, one tablesp. ground ginger and two cups of flour. Cream the sugar and shortening, add the egg and then the molasses, then the sour milk. Into this sift the flour, to which has been added the salt, soda and ginger. Bake in shallow pans.

EXPERIENCE EXCHANGE.

Mrs. A. M. S., of Berkeley, Cal., sends in this tried and enthusiastically recommended lotion to keep the hands soft and white: Mix equal quantities of vinegar and glycerine. This should be kept in a bottle handy to the day's work, and applied to the hands once or twice daily.

Several members of our audience were able to supply the long-buried words of "The Gipsy's Warning." We have to thank particularly Mrs. Cecil F., of Fowler, Mrs. J. C. B. of Sebastopol, and H. E. G. of Morgan Hill. Remarkable was the exactness with which the writers remembered the lines, with no copy at hand. Something about the tenacity of the memory for verses is referred to on today's miscellany page opposite. It was significant that the lines most unerringly recalled in the "Gipsy's Warning" were the more dramatic ones. Who knows the author or anything of the history of these verses?

DON'T LET THE CHILDREN—

Bite their fingernails.
Lick stamps or envelopes.
Taste samples of medicines
Suck slate pencils or lead pencils.
Pick up trash on the street.
Play with strange dogs or cats.
Play with matches, oils or fire.

CLEANING GLOVES.

It is a simple enough process to clean kid gloves, except for the one danger of fire. Do it in day time and away from any flame. Use about half a pint of gasoline in the bottom of a deep bowl. Soak the gloves in it till wet through, then place on a clean board and with a brush, sponge or cloth rub them from the wrist to the finger tips, one way only, and rinse in the gasoline. Renew the gasoline if it becomes very dirty. When the gloves are clean wring them out and hang them in the sun to dry. A slender round stick should be kept handy to fit the fingers over before the gloves become quite dry, or the gloves may be drawn on the hand to shape them. As a finishing touch polish the gloves with white French chalk and a piece of flannel.

OLIVE OIL FOR THE HAIR.

For people with harsh, dry hair, a weekly application of a small quantity of olive oil—enough for it to take up without seeming greasy—is recommended.

Hair has a natural oil which becomes exhausted through abuse of the hair. Olive oil replaces this when applied, and keeps the hair from becoming brittle, and keeps down dandruff—the latter through keeping the skin of the scalp in more normal condition. The hair of men, because shorter and cut oftener and too dry from wearing the hat too much, is particularly benefited by the judicious application of olive oil.

The ancients of Biblical times had a useful purpose when they "anointed their heads with oil."

THE OLD MAN ON THE CRACKER BOX SAYS:

By Fred Schaefer.

Kind hearts are more than coronets, but scarcely as numerous.

If a woman has a red nose she can blame it on corsets; but nobody would believe any excuse a man could invent.

In an argument as soon as the other fellow tries to be fair and concedes something, you flatter yourself you've got him whipped.

I know of people who periodically bring out their family skeleton and polish it like they do their silverware.

FIRST AID TO GARDENING.

Now is when one has the flower fever. And it is the right time, too. For the year's success in the garden depends hugely upon what is done right now.

With the pause in the rains the grass has romped, and this in the garden means weeds. On hillsides the ground was favorable for working a week after the downpour ceased, but on the level except in sandy porous soils, one had to wait a little longer. But the idea remains to tackle the plot at the first sign of freedom in working it and turn it over to bury the shoots of grass and unsprouted seeds. If the grass is too long an end of it will stick out of the upturned soil, and get air and live. It is not a bad thing to take a lawn mower to your weed bed, if it has run away with you, and cut it short before turning over the soil.

But at any rate get your garden into good tilth, both for the sake of the annuals and other things that you are going to plant. The rain you get from now on isn't likely to undo much of your labor.

Of course all kinds of seeds can be sown in the open ground and do well enough if attended to. But changes in the weather often discourage that. To make a sure thing of it start your little plants in flats and transplant them in your garden when the time is just right. A flat is a shallow box of a size easily to be handled when filled with earth, and has a few holes in the bottom for drainage. The professional size for a flat is 18 inches by two feet, and four inches deep. This should have very light and not too rich soil. Sand and leaf mold mixed is best. Leaf mold is the very best thing to use with the sand, as leaf mold, even by itself, will never harden to strangle the tender roots of a seedling.

The seeds should be started in these flats until they have three or four leaves, and then transplanted into flats containing soil that is stronger, say a mixture of loam and leaf mold. In this they will become sturdy and may be set out in a condition to keep right on growing.

The use of flats is very convenient, as you may have them under shelter and under your eye, so that there is every facility to water them and "fuss" with them. And you will be sure that the weeds won't rise up over night and choke them.

And then the fun of transplanting the seedlings is something that can be more deliciously felt than described.

DOMESTIC SCIENCE LIKED.

Seemingly domestic science is coming gradually into its own. It is dawning upon people that there is really something to study and know about the correct conduct of a household. It is announced in this connection that the correspondence courses in domestic science given by the University of California are increasingly popular.

The largest enrollment is in the course for the selection of foods.

THE SANDHILL CRANE.

By Mary Austin.

Whenever the days are cool and clear,
The sandhill crane goes walking
Across the fields by the flashing weir,
Slowly, solemnly stalking.
The little frogs in the tules hear
And jump for their lives when he comes near,
The fishes scuttle away in fear,
When the sandhill crane goes walking.

The field folk know if he comes their way,
Slowly, solemnly stalking;
There is danger and death in the least delay,
When the sandhill crane goes walking.
The chipmunks hide in their holes away,
The gophers stop in the midst of their play,
And "Hush! O hush!" the field mice say,
When the sandhill crane goes walking.

LOVE VS. HATE.

By Charles Grant Miller.

You may search the whole world of philosophy through and find no truer truth than this—that hate, pride, jealousy, revenge, malice, and all the other evil passions the heart is heir to work their first and worst injury to their possessor; they corrode, render wretched and destroy the heart in which they originate.

The one you hate and plot against may not know or care. If he gives any thought to your attitude it may be only to return our hatred. Is it worth while to steep our soul in poison for no better result than this?

We must expend much of our life forces on others. Is it not better to expend them in kindness that uplifts than in spite that debases?

Is it wise to sulk gloomily in the bogs of spite, when a step will take you out into the genial sunshine of kindness?

Is it sensible to dwarf your soul in efforts to make some one recognize that you are his enemy and can hurt him, when you can ennoble yourself by the lesser effort necessary to make him see that you are his friend and can help him?

What we give we get back in kind. Is it better to have the respect of others than their hatred?

Yes, your own feeling is reflected back to you from others. If you give love you get love.

Love is one of the things the more of which you give the more you have.

Love is born a twin and cannot exist without its counterpart.

The human heart, like the rose, only as it opens to the sunshine generates fragrance that sweetens its atmosphere.

It is your own attitude—your own thought—that attracts or repels others. According as you love or hate, you surround yourself with an atmosphere of inviting sweetness or you hedge yourself in thorns, with worms working where roses should bloom.

People are lovely to you or hateful, just as you love them or hate them. This is not mere seeming, but actuality.

Love is the light in which we see and live.

Hates are malarial mists in which we blindly grope and miserably die. —Christian Herald.

POETRY THAT LIVES.

Two middle-aged persons were looking over the literary stuff in their minds the other evening. They found that which they possessed most securely had been read years before. They could repeat with approximate accuracy passages of Shakespeare, Milton, Shelley or Tennyson which perhaps they had not looked at in twenty years. Of poetry read later hardly a line remained.

The reason, of course, was that when they were young and took it seriously they memorized what seemed most striking in the verse they read. In later lazy years they dropped the habit. For a person of normal retentive powers the habit of memorizing poetry is easily formed. Unfortunately it is as easily lost. It is doubtful if verse is much worth reading unless the most striking thing about it is worth memorizing. Otherwise it is no distinct feature of the mind, but only a vague object in the general fog. There is not much use in looking at a picture or a statue unless afterward one can recall at least what is most striking about it.

Probably young Webster, with only a few books, learning the Psalms and other parts of the Bible by heart, was really doing better for his mind than if he had been browsing through a library that left few clear thoughts and images. We say, memorize your poetry when you are young. Probably you will be too lazy to do it afterward. — Saturday Evening Post.

A CHINESE "DEVIL SHRINE."

Rev. Wm. C. Kerr of Chai Ryung, China, sends this incident from his itinerating experiences: "As I was entering Samsang, I saw a great assemblage on one of the hills in front of a little devil shrine. I found it was an annual meeting to do honor to their Satanic majesties, and I entered the low dingy building to find people bowing before crude water-colored pictures, intended to show forth the devils in all their hideousness, and praying for blessings during the coming year. As they left the enclosure, they would throw fragments of bread and cakes around on the ground to appease the unseen denizens of the place. But those same spirits are fast losing their influence, for it was only a few years ago that the worshipers met by the thousands; now only a few hundred appear, and the assemblage seems more like the average crowd on fair day than like a meeting for worship."—Christian Herald.

Cultured.—When a person learns to pronounce Wagner as "Vogner" and Chopin as "Sho-pang" and cello as "chello," he feels that he thoroughly understands the classics of music.—Macon News.

A Big Margin.—He—What is the difference between a gown and a creation? She—I can't give you the exact figures, but it's a small fortune. —Phila. Ledger.

Unusual Airs.—Sergeant (to recruit wandering about at the will of his horse)—'Ere, you! What are you doin' there, ridin' up an' down like a general?—Punch.

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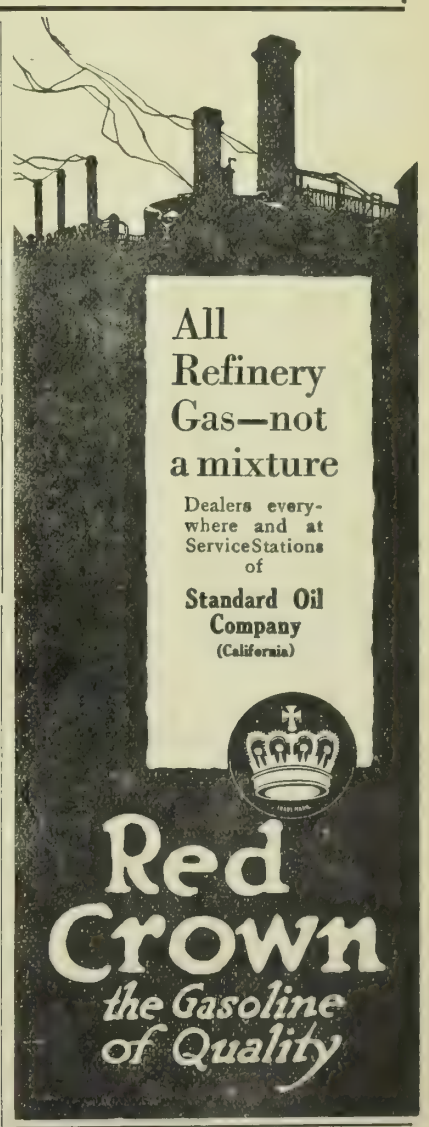
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introduced by us last year has proved a great success everywhere and a most wonderful floral novelty. It is a Celosia of new form and easy growth. Plants throw out scores of branches bearing balls of crimson wool nearly a foot thick. Also many laterals with smaller heads, and fresh green foliage. Flowers form in June but none fade before frost, continuing to expand and glow with its wonderful crimson-scarlet color, very showy and succeeds anywhere.

Seed per pkt. 10c., 3 for 25c., together with new TRAILING PETUNIA AND ANNUAL SWEET WILLIAM (fine novelties) free.
Our Big Catalog of Flower and Veg. Seeds, Bulbs, Plants and rare new Fruits free. Write for it.
JOHN LEWIS CHILDS, Inc., Floral Park, N. Y.

That's So.—The pessimist was suffering from rheumatism. "Every bone in my body aches," he complained. "You ought to be glad you are not a herring," said the optimist."—Pacific Unitarian.

FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS.

San Francisco, Mar. 1, 1916.

WHEAT.

War developments caused an abrupt drop in the East a few days ago, but the market is picking up again. Locally, however, all grades are still lower than last week.

Northern Club	Nominal
none offered.	
Cal. Club, ctl. $1.70	@1.75
Northern Bluestem. 1.85	@1.90
Northern club is nominal here, with	
Northern Red 1.85	@1.95

BARLEY.

The speculative barley market has been decidedly active of late, with more firmness in prices. This has not affected the spot market materially, business being on a rather limited scale, with prices steadily held.

Shipping, ctl. $1.40	@1.42½
Choice Feed, ctl ... 1.32½	@1.35

OATS.

Nothing of much interest is transpiring in this grain, the local demand being of about the usual small proportions, while supplies are ample for all current needs and values are steady.

Red Feed $1.35	@1.37½
Red Seed 1.45	@1.65
White 1.50	@1.55

CORN.

Offerings of California yellow in marketable shape continue very light, while Eastern yellow moves fairly well at the old prices. Egyptian, etc., are in good demand, desirable lots finding ready sale at the range quoted.

Eastern yellow, ctl. ...$1.80	@1.85
Milo Maize 1.40	@1.45
Kaffir 1.65	@1.70
Egyptian 1.50	@1.55

BEANS.

The general market in this line shows a little more steadiness than for some time past, as it is expected that the Eastern demand will be more active from now on. The only quotable decline this week is on limas, which have been moving slowly for some time; while the scarcity of small whites is again having its effect, and this grade has been marked up a little. Other lines hold about steady at the old figures, with no definite indication as to whether prices will advance or recede still further. The usual large shipments of Manchurian beans are now coming in, most of them going out again to other markets.

(On wharf, San Francisco.)

Bayos, per ctl. $4.70	@4.80
Blackeyes 3.40	@3.50
Cranberry Beans 4.75	@4.85
Horse Beans 3.25	@3.50
Small Whites (south .. 5.60	@5.70
Large Whites 5.75	@5.90
Pinks 4.30	@4.40
Limas (south) 4.30	@4.40
Red Kidney 6.50	@6.75
Mexican Reds 4.50	@4.65
Tepary Beans	4.00

SEEDS.

Alfalfa has been marked up, as offerings of desirable quality are getting scarce, and there is quite a strong demand for spring planting.

Alfalfa, per lb. 21	@22 c
Melilotus Alba	6 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch ..... 4¼ @	4½c
Soy Beans	6 c
Canada Peas ..... 5¼ @	6 c
Sudan Grass	40 c

RICE.

Quite a lot of sales have been made recently in the Butte county district, at prices varying from $2.05 per ctl. for seed down to $1.60 for the poorest. Some of the mills report good sales, and with the railroad embargo on Eastern shipments lifted, a larger movement is expected. The Southern market is reported stronger.

HAY.

Arrivals have been rather excessive this week, which is attributed to a sudden easing of the car situation. This has weakened the local market a little, but prices are not quotably lower and lighter receipts are expected from now on, as stocks in the country are getting very small. Local trading has been more active than for some time; and while interior business is decreasing as the green feed becomes more plentiful, there is still a fair outside movement. Alfalfa is somewhat easier, as a lot of Nevada stock that was held up by weather conditions is coming in.

No. 1 Wheat $13.00	@16.50
No. 2 ..... 12.00	@14.50
Tame Oats 12.00	@18.00
Wild Oats 12.00	@14.00
Alfalfa 15.00	@18.00
Stock Hay 10.00	@12.00
Straw, per bale ..... .25	@ .40

FEEDSTUFFS.

The only quotable change in this department is a slight advance in beet pulp, which is now about cleaned up, with no new stock available for several months. Alfalfa meal is firm and in good demand, though the general business is easing off a little.

(Wholesale prices per ton, carload lots, San Francisco.)

Beet Pulp, per ton ..$22.50	@23.50
Alfalfa Meal, per ton.. 20.00	@21.00
Alfalfa Molasses Meal per ton 21.00	@22.00
Bran, per ton 26.50	@27.50
Oil Cake	Nominal
Cocoanut Cake or Meal 23.00	@25.00
Cracked Corn 39.50	@40.50
Middlings 33.00	@34.00
Rolled Barley 29.00	@30.00
Tankage	45.00
Rolled Oats 29.50	@31.00

VEGETABLES.

Cool weather has held back the asparagus a little, but the arrivals have been quite liberal since Tuesday, and prices are considerably lower, with off lots selling below quotations. Steadily increasing supplies are expected from now on. Rhubarb shows a wider range, southern stock being cheap, while choice Bay stock brings higher prices. Carload shipments will start East from Alameda county shortly. Several kinds of vegetables are now coming from Florida, including peppers, eggplant, tomatoes and beans, all of which are high. Lettuce has advanced sharply, while artichokes are much lower, with abundant offerings.

Cabbage, ctl. 50	@60 c
Cauliflower, doz. 50	@60 c
Sprouts, lb. 5	@ 6 c
String Beans 20	@30 c
Peppers, Bell, lb. 20	@30 c
Rhubarb, box, Southern.. .75	@.100
Bay 2.00	@2.75
Peas, southern, lb.	Nominal
Tomatoes, L. A., crate.. 2.00	@2.50
Eggplant, lb. 20	@25 c
Celery, crate 3.00	@3.50
Artichokes, doz. 30	@60 c
Lettuce, small, crate ... 1.50	@2.00
Asparagus, lb. 15	@17 c

POTATOES AND ONIONS.

Some Eastern demand for onions is reported from the river district, but supplies in storage are getting pretty closely cleaned up, and prices are firmly held. No Australian stock has yet appeared, and Bermudas find a fair demand. The range on Oregon potatoes has narrowed down a little, with the top figure lower.

(On Wharf.)

Oregon Burbanks $1.75	@2.00
Salinas Burbanks 2.10	@2.25
Delta Burbanks 1.10	@1.65
Sweet Potatoes, ctl. ... 2.25	@2.50
Onions, Delta, ctl. 1.85	@2.25
Oregon 2.00	@2.50
River Bermudas, crate..	2.00
Garlic, per lb. 10	@12½c

POULTRY.

Eastern hens are easy, as the market has been over-supplied with them for the last few days, and the demand is slow. Choice young stock, however, is very firm so far. Small broilers have been bringing as high as 42c, though the figure is expected to drop in a few days, with larger arrivals. Fryers and young roosters also are a little higher.

Turkeys, dressed 25	@27c
Live Turkeys, lb 19	@21c
Broilers, 15 lbs. to doz. and less, lb. 40	@42c
do, over 15 lbs. to doz. ..30	@35c
Fryers 26	@28c
Hens, extra, per lb. 17	@18c
Small 17	@18c
Smooth Young Roosters, per lb. 21	@22c
Squabs, per doz. 3.50	@4.50
Geese, per pair 2.25	@3.00
Ducks, young, lb. 18	@19c
Old 14	@15c
Belgian Hares 9	@11c

BUTTER.

Supplies have been steadily increasing for the last week, causing a gradual drop in prices, amounting to 8½c on extras. This is attributed in part to uncertainty regarding the new storage law, on account of which many who usually buy for storage are now holding off. The law requires that all butter sold after Oct. 1, if not from cows that have passed the tuberculin test, must be pasteurized.

	Thu.	Fri	Sat.	Mon.	Tu.	Wed.
Extras	31½	31	28	25	24	23
Prime Firsts	30	30	27	24½	23½	22½
Firsts	29½	29½	26½	24	23	22

EGGS.

Both grades have again declined, owing to the usual seasonable increase of production, and so far storage operators have not given enough support to stiffen up the market. It is believed, however, that prices have about reached the bottom. The new ruling that hereafter interstate shipments of eggs must be 95 per cent good has little effect on producers, nor does it apply with much effect to shipments from California north, which commonly consist of the higher grades. It merely means that eggs shipped, for instance, from the East to California, must be recandled before shipment.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	19½	19½	19½	19	18½	18½
Sel. Pullets	17½	18	18	17	16½	16½

CHEESE.

Flats are a little easier, but offerings are still limited, and all other grades are firmly held at the old prices.

Y. A.'s, fancy 18	c
Fancy Calif. flats, per lb. 17	c
Monterey Cheese 18	@19c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	31	29	29	29	24	24
Eggs	18½	18	18	18	18	18

DECIDUOUS FRUITS.

Storage operators who expected an advance have been disappointed, and there is now little prospect of better values, though stocks are expected to clean up fairly well. Local business is quiet, but there is some demand from the interior.

Apples:

Pearmain	.85 @1.25
Baldwin	.75 @1.25
Oregon Spitzenbergs..	1.50 @2.50
Jonathan	1.25 @1.75

DRIED FRUITS.

Dried fruit interests are greatly agitated over the report that England intends to put an embargo on the importation of dried fruits, which would shut off one of the most important outlets for the California product. While no official advices have been received from England, there is little doubt that some such measure is contemplated for the near future, and efforts are being made to oppose it. Under the present uncertainty packers and large handlers are buying only for actual requirements. Export shipments are being rushed, but it is said that no additional stocks are being bought for the purpose, as rail conditions are so uncertain that the proposed rule might take effect before the shipments reached the Atlantic. There is danger, also, that the ruling will demoralize the market for the new crop, and little contracting is likely until the matter takes definite shape. As for the spot situation, apples are unchanged and quiet, with very little demand anywhere and fair supplies still held here. The recent quotations on apricots were rather extreme, and have been reduced slightly, though the market is firm with light offerings. Figs are closely cleaned up, and both black and white are higher. Prunes are still moving fairly well on small orders, and the stock left in the country would not be heavy under ordinary conditions; but if the English market is cut off there may be a carryover. Values, however, remain fairly steady at the recent decline. Notwithstanding the prospect that the new peach crop will be closely controlled, this fruit receives scarcely any attention, and prices are still lower. Most growers, however, refuse to sell at the prices now quoted, and there is no very large stock on hand. The New York Journal of Commerce says:

"California raisins are dull though prices continue to be held, with a very firm tendency. The foreign inquiry for Coast stock is still felt in several quarters, and additional buying is said to be expected in a short time.

"Coast prunes are firmer and the unsettled tendency which was so prominent a few days ago has apparently entirely disappeared from the market, with the elimination of the small California packer. There is no indication that prices could be shaded, the quotations offered remaining steady and showing practically no change from the ones that were in evidence the early part of the week. Spot stocks are moderate and conditions generally quiet.

"Peaches are a trifle easier in some quarters on the Coast. Apricots show no change with little interest displayed either on spot or on the Coast."

Apples 6	@6½c
Apricots, per lb. 8	@11½c
Figs, white 5	@5½c
Black 3½	@4 c
Calimyrna 6	@7 c
Prunes, 4-size basis 4¼	@5 c
Peaches 3	@3½c
Pears 4	@7 c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz. 7	c
Choice Seeded, 16 oz. 6¾	c
London Layers, 3-crown, 20-lb. box 1.25	
Imperial Clusters, 6-crown, 20-lb. box 2.50	
Bulk, layers, 50-lb. box 2.75	

CITRUS FRUITS.

Eastern prices are off on California oranges, caused by too much fruit shipped early last month, and poor keeping quality of some of it. However, as shipments have been curtailed for the past ten days, it is thought that the market will soon right itself.

At New York on Monday, Feb. 28th, oranges on the auctions averaged from 95 cents to $2.95 per box, and lemons averaged $2.15 to $2.80. On the same day at Chicago the prices averaged for navels from $2 to $2.65 and lemons from $2.75 to $3.25 per box. Shipments from southern California up to Feb. 28th were 7,491 cars, as against 8,356 cars to same date last season.

Oranges are moving fairly well in the San Francisco market and for shipment to nearby points, with prices pretty firmly held. Grapefruit shows quite a wide range of prices, according to quality. The demand is moderate at present.

(Wholesale prices, San Francisco.)

Oranges, Navels $1.75	@2.75
Tangerines 1.50	@2.00
Grapefruit 1.25	@2.50
Lemons, box 1.75	@3.25
Lemonettes, box 1.50	@2.00

HONEY.

Values are quite firm at the former level, with a fair local demand from the small trade. There is no shipping business of any consequence, how-

Telegraphic advice from Washington, D. C., states that a new ruling, by the Dep't of Agriculture, provides that all interstate shipments of eggs must hereafter be 95 per cent good of the shipper will be held liable for violation of the pure food and drug acts. At the date of going to press printed copies of the original ruling had not yet been received by the Department officials in San Francisco.

ever, and any large offerings here would no doubt break the market, stocks on hand being now sufficient for current needs.

Water White, comb	13@15 c
Amber	8@12 c
Water White, extracted	7@ 8 c
Light Amber	3@ 4 c
Dark	2@ 2½c

NUTS.

There is little new in this department, as stocks of all kinds are pretty well sold out. There are still a few scattered lots of almonds and walnuts, but they consist mostly of lower grades or ungraded stock. Imported nuts are very firm.

(Prices f. o. b. San Francisco.)

Almonds (1915)	Nominal
Walnuts (1915):	
Budded, per lb.	17½c
No. 1	14 c
No. 2	11 c
Jumbo	17 c

LIVE STOCK.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, S. F.)

Steers, No. 1	7 @7¼c
No. 2	6½ @6¾c
Cows and Heifers, No. 1	6 @6¼c
No. 2	5½ @5¾c
Bulls and stags	4 @5½c
Calves, light	8½ @9 c
Medium	7½ @8 c
Heavy	6½ @7½c
Hogs, grain-fed:	
100 to 160 lbs.	7¾c
160 to 275 lbs.	7¾ @8 c
275 to 250 lbs	8¼c
250 to 325 lbs.	7½c
Prime Wethers	7½ @7¾c
Full Wool Lambs	9 @9½c

DRESSED MEATS.

Steers	10½ @11 c
Veals, large	12½ @13 c
Small	13 @14 c
Prime Wethers	13 @13½c
Lambs	15½c
Hogs	11½c

HORSES.

More horses have appeared on the San Francisco market this week than for some time previous, and while there were no very notable offerings, some of the dealers have shown a fair assortment. Values on the whole are well maintained, especially on the heavier weights. Local buyers, though not especially eager, show a little more interest, and there is a very fair demand from some parts of the country.

(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs and up	$250@300
Drafters, 1550 to 1650	150@225
Chunks, 1350 to 1500 lbs.	150@175
Wagon horses, 1050 to 1350 lbs.	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@ 75
Farm Workers	50@100

WOOL.

(Prices paid in the country.)

Sacramento Valley, lb. 18	@19 c
Southern, year's staple	15 @16 c
Six months	13 @15 c
San Joaquin (defective)	10½ @11½c
Northern, free	13 @16 c
S'thern Mountain, free	13 @14 c
Tehama County, free	13 @14 c

HIDES.

Dry, 15 lbs. and over	29 @30 c
Kip, 10 to 15 lbs.	30 @31 c
Veal, 7 to 10 lbs.	30 @31 c
Calf, under 7 lbs	32 @34 c
Wet Salted, Steers	16½ @17½c
Cows	16½ @17½c
Kip	18 @19 c
Calf and Veal	21 @22 c
Bulls and Stags	13 @14 c
Horses, dry, large	$1.25@2.25
Sheep, long wool	1.25@1.40
Medium	1.00@1.25
Shearlings	.60@ .80

WEEKLY BUTTER AVERAGES.
Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	18.60	28.00		28.20
" 9	25.33	26.66	26.00	28.10
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	26.66	36.33	28.00	36.66
Feb. 6	26.68	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25
" 20		32.00		32.00
" 27		30.90		35.25

WEEKLY EGG AVERAGES.
Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 26	36.33	28.83	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50
Feb. 13	23.00	28.90	25.10	28.00
" 20		23.66		20.33
" 27		20.30		18.50

Publisher's Department

While the rains interfered somewhat with field subscription work last week, yet we added 177 new subscribers to our list. We anticipate bigger gains from now on as the better weather season approaches.

Next week we expect to devote considerable space to silos and silage, in which subject we know there is a keen interest by stockmen in all parts of the State.

Have you sent for a copy of our new book, "Second Thousand Questions in California Agriculture Answered"? You need this book in your farm work.

We print this week the first half of an article by Albert F. Etter on his work with strawberries—the rest will follow next week. Many of our subscribers secured plants, through this office, of Ettersburg No. 80, and all of them will, we feel sure, be glad to read of the advance made in the work by Mr. Etter.

MISCELLANEOUS NOTES.

The Hughson Condensed Milk Co. will shortly have butter making machinery in operation.

The date of the Alameda County Fair has been tentatively set for two weeks after the State Fair at Sacramento next September.

There has been considerable activity in hop sales the past week, one report stating that 100 bales had been sold in Sonoma county for 13 cents and another saying that 15 carloads are being shipped from Wheatland.

Heavy shipments of green peas will be made in the next two weeks from Brawley, according to advices received from there. The cold weather has held back the crop some but not enough to be of any consequence.

Figures given out in San Joaquin county state that there are 6,000 acres of land signed up for sugar beets in that county this year. Results from last year's planting were satisfactory, which accounts for the increased acreage.

A considerable loss of lambs was reported around Dixon, Solano county, during the recent heavy storms. Those who had their flocks in the hills found it difficult to secure feed on account of the heavy snow and many losses were experienced on account of coyotes.

N. O. Brown, who was employed by Osborn and Son of Soda Springs, Idaho, has located near Turlock, Stanislaus county, with 77 head of purebred Shropshires, purchased from the Knollin and Finch flock. Mr. Brown expects to devote all of his time to his Shropshire flock, being thoroughly experienced in the handling of purebred flocks.

Following are the acreages of bearing fruits in California as compiled by George P. Weldon, Deputy State Horticultural Commissioner: Apples, 38,410 bearing, 22,430 non-bearing; apricots, 40,898, 14,553; berries, 10,468, 112; cherries, 8,269, 4,193; figs, 5,709, 2,413; lemons, 18,422, 18,228; oranges, 112,926, 55,527; olives, 15,642, 11,574; peaches, 113,725, 31,163; pears, 17,779, 19,649; plums, 16,410, 5,751; prunes, 91,470, 24,774; walnuts, 34,453, 20,362; almonds, 18,602, 15,473.

Classified Advertisements.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

SAVE MONEY ON YOUR PUMPING PLANT—We are reducing our stock of Gas Engines, Oil Engines, Centrifugal Pumps, Friction Clutch Pulleys, etc., and can name you very low prices indeed. Write us at once. Commercial Iron Works, 481-497 Fifth St., San Francisco, Cal.

PRINTED STATIONERY—Hammermill bond letterheads, $2.50 per 1000; envelopes, $2.25; billheads, $2.50; business cards, $2.50; good work; sure to please you; mail order a specialty; samples free. G. C. Gallagher, the Service Printer, 309 Battery St., S. F.

MOGUL TRACTOR, 45 H. P.; used one season; fine condition; will demonstrate; have no use for it; will sell for half cost and give terms, or exchange for horses or mules. Drills, discs and other farm machinery for sale. Address W. H. Hord, 704 Market St., S. F.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

WILL SELL TOGETHER OR SEPARATELY—3 five-disc plows. Scarcely used, best made, none better for small or large tractor. Would consider good auto as part payment. P. O. Box 654, Burlingame.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds $3.00 delivered. Order with remittance, WM. J. SCHROTH CO., 112-B Market St., San Francisco.

APPLES!—Buy direct from producer. Newtowns, 90c; Bulk pack, 4 and 4½ tiers, equal proportion. No 2 grade for cooking, 65c. Edwd. A. Hall, Watsonville, Cal.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.

GAS ENGINE—25 H. P. Fairbanks Morse Vertical. Guaranteed perfect. Bargain. J. J. Pottinger, 189 2nd St., San Francisco.

ASK FOR SNOW'S GRAFTING WAX—If your grocer does not have it, send to D. A. Snow, R. 3, Box 255, San Jose, Cal.

SEEDS AND BULBS.

SEND 10 CENTS for four packets seeds of the finest vegetables of their class, viz.: Detroit Dark Red Turnip beet, Early Snow Ball cauliflower, Copenhagen Market cabbage, Paris Golden Self-Blanching celery. Regular retail price for the whole is 40c, but to introduce, and for your name and address with 10c, I will send same with my catalogue by mail, postpaid. Charles Johnson, Seed Specialist, 1686 Shattuck Ave., Berkeley, Cal. Over 50 years in seed business; author "The Seed Grower," standard work on seed growing.

SUDAN GRASS SEED for sale by the grower, direct to farmer at a saving of 60 per cent—less than Seed dealer's prices! Choice seeds; none better. Send in your orders now while it lasts. Greatest forage crop known for dry or irrigated land. Better and finer hay than Timothy. **Wm. P. Spalding, R. F. D., No. 1, Box 64, Los Molinos, Cal.** 30c lb. in small lots; 50 lbs. and over at 25c, delivered.

PARIS GOLDEN SELF-BLANCHING CELERY SEED—Best French grown, new crop; the variety grown extensively for Eastern markets by California and Florida celery growers. $15 pound; $4 per ¼ pound; $1 ounce; 15c packet; by mail postpaid. Charles Johnson, Seed Specialist, 1686 Shattuck Ave., Berkeley, Cal., over 50 years in seed business; author "The Seed Grower."

SOUDAN GRASS SEED—Guaranteed absoutely free from Johnson grass seeds, 30c per pound for less than 10 pounds, 27½c per lb. for 10 to 49 pounds; 25c per pound for 50 pounds or more. I pay postage or freight. John Silbersack, San Martin, Cal.

CALIFORNIA GROWN SUDAN GRASS SEED—Absolutely free from Johnson Grass or other Weed seed. Plant all you can of it; for Broody Chicks and laying Hens or stock of any kind you can't beat it. 30 cents per lb. Write for prices on large lots. Lasher's Hatchery, Petaluma, Calif.

SEED BEANS—We have choice Red Mexican and Blackeyes grown on sandy land, producing a heavy crop. Well cleaned and in good order. Write for prices to THE GRANGE COMPANY, Modesto, California.

MELILOTUS ALBA OR SWEET CLOVER—Recleaned and good seed 20c f. o. b. Any quantity up to 2000 lbs. Samples sent on request. V. M. Shuey, Manzanar, Inyo Co., Cal.

SEEDS, PLANTS, BULBS—Nursery stock, baby chicks, poultry supplies and remedies, incubators, brooders and bee supplies. San Francisco Seed Co., 257-259 Market St, San Francisco

TREES AND PLANTS.

WALNUT TREES — Late blight-resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California black root; as the California Black root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

CITRUS TREES—40,000 assorted—25c in tree row; 25c balled; subject to advance. All big, two-year-old stock. Choicest ever produced by anybody, anywhere, at any price. Lem A. Brunson, Santa Fe Springs Nursery. Office, 1120 Haas Building, Los Angeles, Cal.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

FRANQUETTE AND MAYETTE grafted on California Black. Sizes 3 to 10 feet. Prices reasonable. Special discount on large orders. Sunset Nursery, 525 W. San Carlos St., San Jose, Cal.

WILLSON'S WONDER and genuine Franquette trees and grafting wood for sale. Write for circular and prices. Encinal Nurseries, F. C. Willson, Prop., Sunnyvale, Santa Clara County, Cal.

NURSERY STOCK—None better. 2-year-old Navels, Valencias and Lemons, ⅝ and up, 25c, balled or packed in moss. Ask for prices on carload lots. J. C. Johnson, Azusa, Cal.

FOR SALE OR EXCHANGE—1500 San Jose Mayette Grafted Walnuts. Six to ten feet. Price low or will exchange on light auto or good heavy team. Chas. Story, Rivera, Cal.

WALNUTS—Budded on California Black root; Franquette, Mayette, Concord, Eureka and other leading varieties. Extra fine stock. No better anywhere. Write for full particulars and prices. Woodbridge Walnut Nurseries, Motor Route B, Box 269, Modesto, Cal.

GRAFTED ENGLISH WALNUTS—A few hundred fine vigorous trees. Two-year-old California Black Walnut roots, one year Concord Walnut graft. Bishop Bros., San Ramon, Cal.

CITRUS, FIGS, PEACH AND APRICOT TREES—Also Thompson, Muscat, Emperor and Malaga rootings for sale at the Wood Ranch, two miles south of Del Rey. I. Takahashi.

SWEET POTATO PLANTS for April and May delivery. California Yams, $2.25 per thousand, 35c per hundred, prepaid. J. Braswell, R. D. No. 2, Lindsay, Cal.

FRUIT AND ORNAMENTAL TREES—Almond, Prunes and Pears. Berry plants. We contract to plant and care for orchards. Panama Nursery Co., Concord, Cal.

ACACIAS AND EUCALYPTUS—Most varieties, in cans, 3 feet up. Fine stock. Any quantity. Write for prices. Ekstein Nursery, Modesto, Cal.

TEPARY SEED BEANS—1915 grown. Fancy recleaned, 7c. lb. Order now; limited supply. Dean H. Potter, Shafter, Kern Co, Cal

SELECT LOCKEFORD BURBANK—Rural and American Wonder Seed Potatoes. $1.50 per 100. N. H. Locke Co., Lockeford, Cal.

WAGNER'S CRIMSON GIANT WINTER RHUBARB—Subdivided plants. 15 per 1000; $2 per 100. C. E. Shelford. Healdsburg.

CLOVIS NURSERY offer for sale all kinds of nursery stock at 2320 Tulare St., Fresno. K. S. Yamamura, owner.

FOR SALE—Orange trees from selected two-year-old stock. K. Matsuoka, one mile west of Sanger, Cal.

TEPARY BEANS FOR SALE—Eight cents per pound. Robert Paulsen, Lockewood, Cal.

FOR SALE—Spineless Cactus Plants. Prices right. R. C. Engbert, Byron, Cal.

PALM TREES—$1.00, $1.50, $2.00 f. o. b. Sunnyvale. F. B. Kraseman.

APPLES, PEACHES—10 cents. Gage Nursery, Corning, Cal.

WANTED.

WANTED—Responsible Representative. 12 tools in 1. Sell to farmers, teamsters, contractors, etc. Lifts 3 tons, hoists, stretches wire, pulls posts. Many other uses. Free sample to active agents. One agent's profit $45 in one day. Another $1000 in Dec. We start you. Write for Big Color Plate. Secure exclusive sale. HAKRAH MFG. CO., Box M, Bloomfield, Ind.

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. R. Humphrey, Principal, Stockton Cal., Box 704.

RANCH FOREMAN, married, at present employed, desires to correspond with parties wanting a thoroughly competent, reliable man; agricultural training; experienced with purebred dairy and beef cattle, hogs, orchards; farm construction. Address, giving particulars, Box 209, Pacific Rural Press.

10 YEARS' EXPERIENCE—Get absolute results on any farming proposition. Open to position as superintendent or manager now. Wm. Curtis Clark, 1565 Madison St., Oakland. Phone Oak. 7533.

NURSERYMAN WANTS WORK—Pruning, grafting in orchard or nursery. Greenhouse work if required. Address Robert C. Morrison, care Box K, Auburn, Cal.

LAND FOR SALE.

FOR SALE OR EXCHANGE—Best little apple orchard in the famous Rogue River Valley, Southern Oregon, right in city of Ashland, 5,000 population. Average crop past ten years, 900 boxes Newtowns and Spitzenbergs, $1.25 per box. Last year's crop, 1,400 boxes, $1,700. Price, $7,000; equity, $5,000. Trade for stock or grain ranch, low altitude. O. H. Barnhill, owner, Ashland, Ore.

NEW OPENINGS—Enlarged Homesteads. Nearly TWO MILLION acres GOVERNMENT LAND, different counties, plainly marked on COUNTY SECTIONAL Maps, $2.50, any County. Booklet, map, circular FREE. STATE MAP, showing 600,000 acres of SCHOOL land opening over State, $2.50. Order TODAY. Checks taken. JOSEPH CLARK, Sacramento.

I OWN AND OFFER FOR SALE 475 acres of land situated in Solano Co. between Dixon and Winters. Good house and barns. About 80 acres graded for alfalfa. Good wells and irrigating pump. Adjoins the successful rice fields of this country. Price, $60.00 per acre. $10,500 cash and balance on easy terms. J. H. Peterson, Dixon, Cal.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

47 ACRES—2½ miles from University Farm, modern dairy and hog ranch. 30 head cattle, hogs, team, and everything complete. $2500 less than its value. Write owner for particulars. Box 36, Davis, Cal.

FOR SALE—Dairy ranch, half mile from Livingston, Merced county. Sixteen acres in alfalfa, 12 cows, 1 bull, heifers and hogs, horses and farm implements. Price, $4875. J. A. Wolf, Livingston, Cal.

IMPROVED RANCH of 170 acres for sale. Brown's Valley Irrigation District, half mile from school and post office. F. E. Snell, Brown's Valley, Yuba Co., Cal.

ALFALFA RANCH FOR SALE with buildings; either 50, 100, or 150 acres. Easy terms. $125 to $150 per acre. Alex T. Gibson, P. O. Box 361, Chico, Cal.

FOR SALE—8 acres Muscat vines, one-fourth mile from DEL REY. Netted owner last year $800. For price, enquire at Royal Vineyard. W. Tranberg.

FOR RENT—Irrigated fruit and vegetable ranch on shares. Splendid opportunity. Slater, owner, Hobart Bldg., San Francisco.

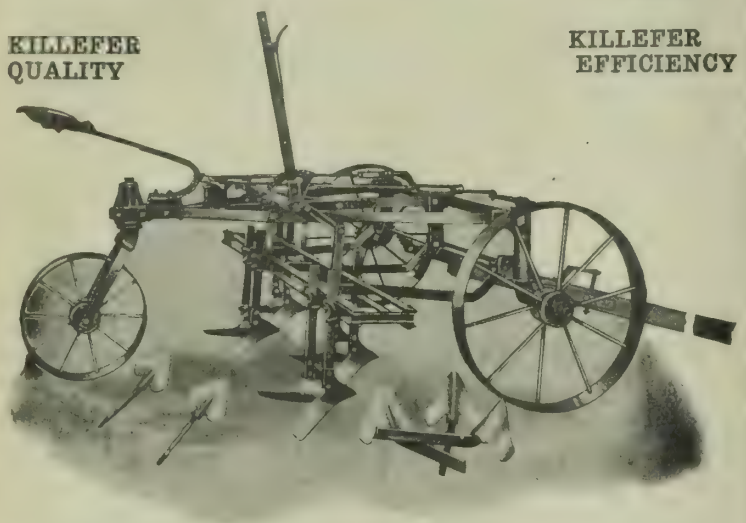
WANTED TO HEAR FROM OWNER of good farm for sale. Send description and cash price. R. C. List, Minneapolis, Minn.

WANTED GOOD FARM, or unimproved land from owner. H. L. Downing, 145 Palace Bldg., Minneapolis, Minn.

Beet Cultivator (K)

KILLEFER QUALITY

KILLEFER EFFICIENCY

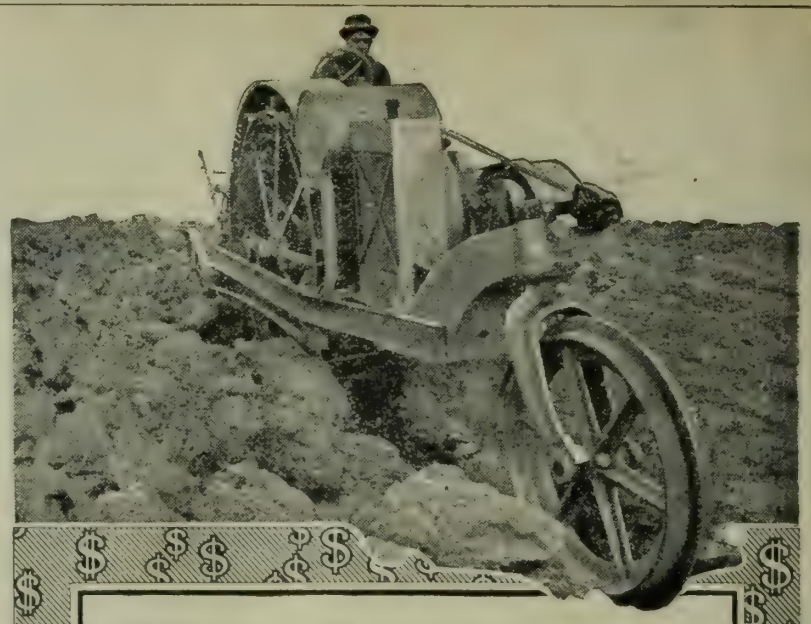


The frame of this Cultivator is made of one continuous piece of high carbon steel with a truss connecting it to the main castings, supporting the two steering wheels. This construction makes a cultivator that is almost impossible to break down in the center and in consequence the wheels are always in line and under easy control.

The lower frame or tooth bar is from the same quality of steel with a strong arm at each end, which connects with the lifting rod, allowing no chance for the frame to dip or run deeper at the ends. The seat is set back far enough to give an unobstructed view of the rows. The foot control of the front wheels is adjustable with a turn-buckle for taking up wear, and is very easy on the operator. A lock is provided for the rear wheel that holds it rigidly in line except on the turns. This is the **strongest** and **best made** Beet Cultivator for sale on the Pacific Coast.

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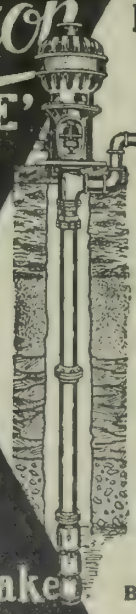
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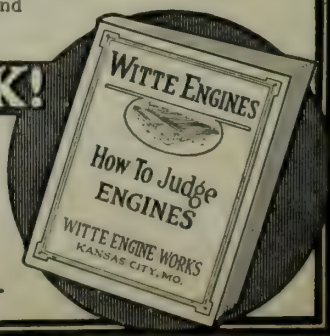
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Vol. XCI—No. 11 Forty-sixth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO MARCH 11, 1916. LOS ANGELES

California's Silo History to Date.

Sidelights on the silo and use of silage from prominent dairymen that augur well for the advancement of alfalfa's most likely aid in balancing livestock rations.

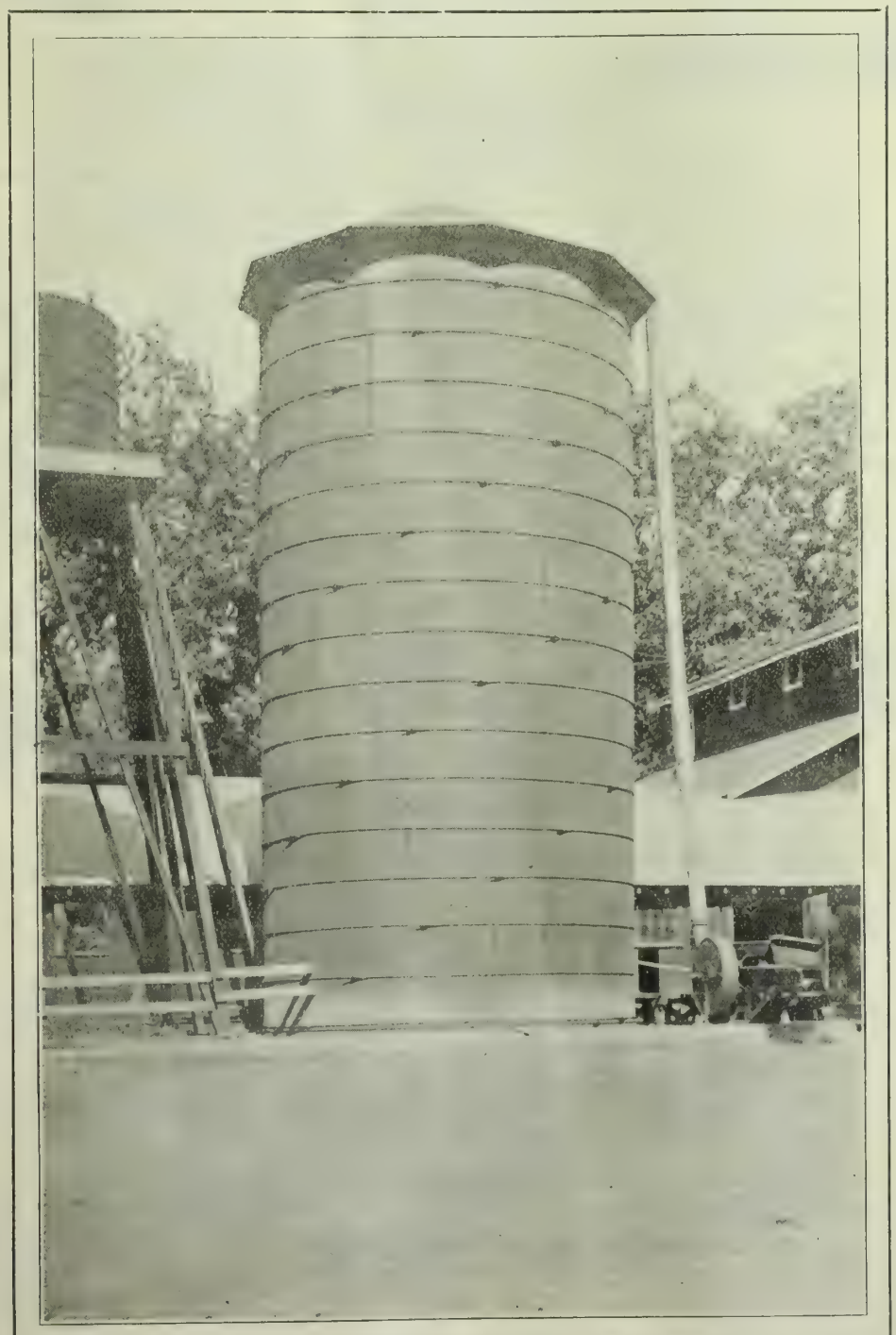
[Written for Pacific Rural Press.]

FOUR years ago silo construction in California was mostly through the farm press. Today it is mostly in the country. Probably that is the strongest and most gratifying endorsement that could be made in favor of the silo.

While traveling through the largest dairy county in the State last fall the writer was told by responsible parties that there were over 200 silos on farms in that county at that time. Four years previous to that, in an attempt to tell Rural Press readers the exact status of the silo, he found silo owners so hard to locate in that same county that it was with considerable difficulty that he secured any detailed data for publication.

From Humboldt county on the north, noted for its green pastures of clover and its lack of corn growing possibilities, to Imperial on the south, with its extreme heat and almost total lack of rain, the silo has verily taken the stock growing districts of the State by storm.

True, it has been given publicity of a convincing nature, but its best advertiser has been Results. Its first appeal came from owners who had found silage of incalculable value as a supplement to alfalfa hay for dairy cattle. It next attracted attention for its almost uncanny ability of turning foul, weed-ridden first cutting alfalfa into palatable, nutritious feed. And lastly it commanded attention because it introduced summer crop rotation on alfalfa lands. This last is probably the most fundamental thing about the silo from an agricultural standpoint, as it is providing an agency for the restoration of the soil to its original fertility for alfalfa culture.



A Sonoma county silo that furnishes succulent feed in the dry seasons of the year when other green feed is scarce. Silos established a reputation there years ago, and some of the first ones erected are still in use.

While it is interesting to look backward for four years, it is equally as essential to look forward as far as we may, for there are thousands of farmers and stockmen who need a silo that do not now possess one.

In order that our readers who are included in those thousands may look forward to the silo through equally as intelligent eyes as those who have already put it into use, we give extracts of advice from leading dairymen and breeders in widely separated parts of the State.

Along the Coast.—From the Sunnybrook Ranch in Mendocino county, on a place where alfalfa growing has not been found practicable, H. H. Sisson has this to say: "The silo has given us succulent feed for our dairy stock all through the winter, summer and fall when there was no green feed available. When our silage gave out this spring, before grass was available, we noticed quite a drop in the milk—from two to six pounds per cow. The only disadvantage we have found is that the silo will get empty."

One of the oldest silo owners in Napa county is William Watt, owner of the Longwood Farm. He has two silos and in his own words "thinks the silo should be more extensively used in this State, not only for economical storage of corn and grain but for the independence gained by its use in winter and the saving in summer over feeding soiling crops. It takes less labor to fill your silo than it does to feed the same amount of alfalfa as green stuff. You also have the advantage of being able to cut your alfalfa when it is ready, and do not lose weight on that portion of the field cut too soon, and quality on that portion left for later feeding. I have changed my cows from green alfalfa in June, after filling my silos with vetch and barley, onto the fresh silage and have never been able to find a decrease in milk flow. In the fall I fill with corn

(Continued on page 336.)

MARKET OR HOGS FOR RICE?

To the Editor: I have some rice that I want to fatten pigs on. Will you tell me the feeding value of rice as compared to other grain, and can I get my money out of it by feeding to hogs with pork at six cents or had I better sell it for two cents a pound? —B. E. C., Wasco.

[Experiments carried on in the Southern States, where rice-feeding methods are better known than anywhere else, show that low-grade rough rice is worth 7 per cent more than corn as a hog feed. Theoretically, corn is worth 5 to 10 per cent more than barley as a hog food; but practically the former figure is more nearly correct.

Therefore, low-grade rough rice would only be worth about 12 per cent more than barley, or, at present about $1.50 per hundred. While good rice is no doubt worth more, we are led to believe you had better sell your rice at 2 cents and buy barley for your hogs.—Editors.]



Real silo profits come only from the silo that makes a high quality of silage—that preserves *perfectly* all crops placed within its walls.

For many years the recognized leader of **the silo world** has been the

Wm. Rowan, Bishop, Cal. "Silage has kept in perfect condition and cattle eat it with great relish."

Percy Stearns, Lebanon, Ore.—"I am well pleased with my Indiana Silo. Every stock farmer in the Valley should have one for it lessens the cost of raising a cow nearly one-third."

A. H. Bair, North Yakima, Wn.—"No more 2x4 silos for me. The "Indiana" is the best silo for the money I have ever seen."

INDIANA SILO

C. Leckband, Dayton, Ore.—"I am well pleased with my "Indiana" Silo, both as to structure and results obtained. By feeding silage as a dairy feed, I not only get good prices for my feed but am well repaid for my labor."

L. L. Ernst, St. Paul, Ore.—"I believe silage is the cheapest feed I can put up, besides taking up little space and being nice to handle and easy to get at. I will not use half the hay I have used other years. My Indiana silo has not leaked at all."

For many years to come it will still be the *standard* by which *all* silos are judged, for it has *built* into it all features necessary to the success of its work and the convenience to its user.

The farmer who gets paid most for his work is the one who "sells" his crops to his own use—fattens his livestock, increased his milk yield, reduces his feed bills, through the silo. Almost *sixty thousand* American farmers—successful ones—use the "Indiana" to increase the profits from their farms. Won't *you* profit by their *experience?*

Our new Silo Book—written with reference to the needs of the Pacific Coast—is a valuable addition to any farm library. *Your* copy will be sent free upon request. Use the coupon or send your name on a postal.

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Pacific Rural Press

SAN FRANCISCO | SATURDAY, MARCH 11, 1916. | LOS ANGELES

California's Big Purebred Establishment.

[The name of "Lucky" E. J. Baldwin is a historical one in California and it is appropriate that his love for fine livestock should be perpetuated in a befitting manner by his daughter, Mrs. Anita M. Baldwin, on a large scale as herein set forth.]

[Written for Pacific Rural Press.]

FIVE thousand purebred hogs and 500 purebred Holsteins would seem a big undertaking even for a California ranch, yet everything is being shaped for that goal on the Santa Anita Rancho in Los Angeles county, according to Supt. W. H. Taylor, who manages the ranch for Mrs. Anita M. Baldwin. This in addition to the purebred draft and light horses, jacks and jennets, dogs of several pure breeds, and fowl with ancestors, too.

Just now there are only about 100 brood sows, and three boars on the 3500-acre home ranch, besides two service bulls and 31 cows already milking, 75 or 80 brood mares, seven or eight stallions, a jack, two dozen jennets, about 500 peafowl, and the dogs, whose prices in many cases run over $1000 each.

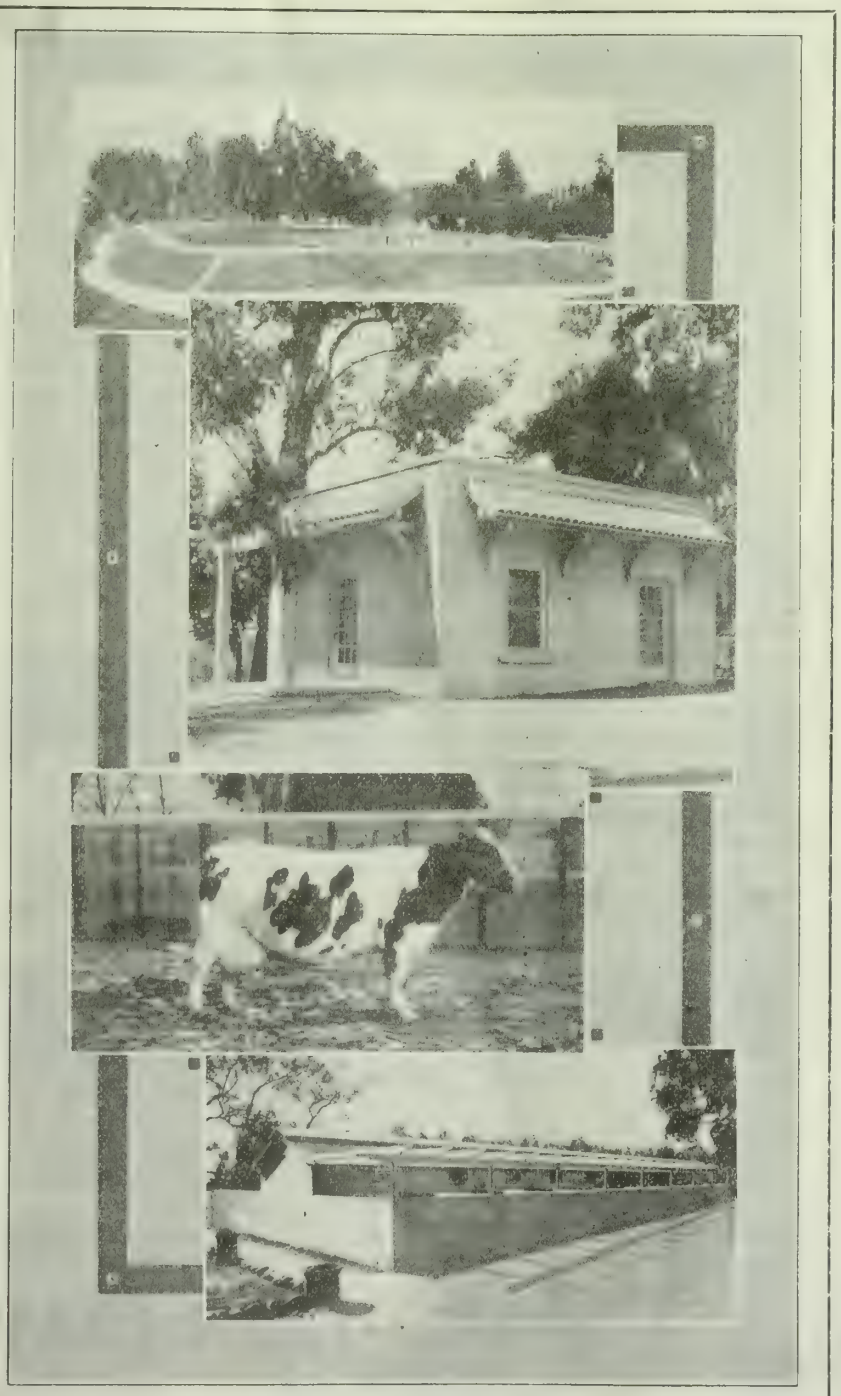
As for the quality of this stock, it is possible for us to give only a few of the big names in the herds.

Kintyre Laird, the Berkshire boar, after winning many firsts and a championship in Washington, became Reserve Grand Champion at P. P. I. E. He cost $685 at the P. P. I. E. auction. The Reserve Grand Champion Poland China of the World's Fair was bought for this ranch for $1,000 from M. Bassett of Hanford. Eight of the sows won 51 ribbons at Washington, Oregon, and San Francisco last year.

One of the bulls is a son of the $10,000 Wisconsin Holstein De Kol Hengerveld Burke; and is out of a cow that averaged 110 pounds milk for seven days. Among the cows is Alba Sadie Cornucopia Creetia, which recently made an official record of 34.135 pounds butter from 505.4 pounds milk testing usually over 5 per cent and up to 5.6 per cent fat. The herd also includes daughters of Johanna King Segis, a $25,000 bull, De Kol the 2nd, Butterboy 3rd, Prince Goelsche Walker, De Kol Hengerveld Burke, King Segis, De Kol Mead, King of the Pontiacs, etc. The cows now in milk are averaging about 48 pounds, testing 3.5 per cent fat. They have already two 27-pound records, one 26, and one 18-pound senior yearling, though official tests have been conducted only since last December. Every cow is put on official test as soon as proper after freshening. The calves are expected to sell at about $400 average.

The registered jack, King Beersheba, has been champion of the jack-breeding State of Kentucky. The imported stallion, Jusque, weighing about a ton in his working clothes, heads a herd of 18 Percheron mares, among which is Manon, the senior champion Panama-Pacific Percheron mare, and she weighs close to a ton. the herd includes the first prize stallion and three mares of the P. P. I. E., and the best 10 mares in a class for which a large silver cup is displayed in the trophy building.

The ranch has bred four American Derby winners, one of which, Rey el Santa Anita, 25 years old, is pensioned off by the will of "Lucky" E. J. Baldwin, the founder of the estate. There are 20 registered thoroughbred mares and three stallions besides two beautiful Arabian stallions and two Arabian mares, in addition to other fancy light stock being raised now, not to race but to sell.



Scenes on the Santa Anita Rancho: 1. Reservoir. 2. Office. 3. Abba Sadie Cornucopia Creetia. 4. Hog House.

Some of the Feed.—To feed this stock, 400 acres of alfalfa have just been planted, 1600 acres of the finest hill pasture are available in another ranch, and 500 acres of Indian and sorghum corn will be planted. These are just some of the high spots. Carrots alone will occupy 25 acres; for last year's carrots, still being dug, are as big as sugar beets and turning out 12 to 15 tons per acre. Beet pulp and bran will also form an important part of the cow rations, while rolled oats, barley and bran will be included in the horses' rations, but not corn.

Flowing Wells.—To water the feed-growing part of the ranch as well as the 100 acres of potatoes, two or three hundred acres of oranges, and orchards which produced 250 tons each of fresh prunes and apricots last year and 600 tons of peaches, 16 wells are used. Flowing water is obtained at 200 feet. Some of them flow over 200 inches of water and the capacity can be increased by pumping. A 5,000,000 gallon reservoir 50 feet above the stables will furnish storage for part of the irrigation water, and pressure for fire-fighting and stable-cleaning.

Unit-Plan Concrete Building.—Concrete is being used for all livestock buildings and even for partitions between the bull pens. Gravel is found in abundance on the place. Tile roofing and broad tile eaves give a dash of color to the architecture, which is all to harmonize with the rest on a plan predetermined by Mrs. Baldwin and Mr. Taylor. Every building is designed on the unit plan so that, as the herds increase to the ultimate size, similar units can be added in every case, without crowding or disarrangement.

Official Test Building.—The most striking building, and the most important, is that in which are kept the cows on official test. It is concrete, with a double line of concrete-sided stalls, light and airy, and each opening into a moderate-sized paddock entirely enclosed with wire fly-screen. Flies will not worry the cows on test; neither will the cows suffer with heat by being blanketed.

(Continued on page 332.)

Discussing the Prune Outlook.

Many things growers should consider and get preparedness for before the buyers make their spring drive.

To the Editor: Acting on the suggestion of Mr. S. H. Shelley of San Jose in last week's Rural Press, I beg to submit a few remarks to the discussion on the prune outlook.

That with a possible big crop the coming season a wider market is required as well as better information, seems very true. The first great necessity, however, seems to be an effective state-wide organization of prune growers, working in harmony with all small organizations in existence, the whole under the supervision and guidance of State Market Director Weinstock. Neither better information nor a wider market nor any of the other necessary things can be accomplished without a strong organization.

Present Opportunity.—No greater opportunity was ever offered any body of men than Mr. Weinstock has presented to the fruit growers of this State by putting the tremendous power and prestige of the State of California at the disposal of the growers. While growers in other lines of fruit seem eager to take advantage of Mr. Weinstock's proposition, it seems incredible that prune growers should be unable to realize that this is the opportunity of their lives.

The Information Bureau is now actively engaged in a personal canvass of the prune growers for information and organization and this seems for the present the all-important thing. If anything practical is to be accomplished this year the next six or eight weeks must show it. It is therefore up to the growers to at once join the Information Bureau, either through the representatives of the Bureau in their respective districts, or by writing direct to the Secretary-Treasurer, Geo. E. Merrill, No. 155 West Santa Clara St., San Jose.

Conditions in Europe.—A strong organization seems to be necessary especially this year on account of extraordinary situations produced by the war in Europe. According to advices in the daily press there have accumulated in all our Eastern seaports such immense quantities of goods to be shipped to Europe because ships cannot be obtained to carry them, that all California railroads have stopped receiving goods for shipments to Eastern seaports. By the 21st of February there were said to be 140,000 loaded cars waiting for ships at seven Eastern seaports. The goods thus waiting at these ports, together with orders for $5,000,000 worth of more goods to be shipped from California and due to be delivered aboard by April 1, but which the railroads refuse to accept for transportation, amount to $13,000,000 gross. "It is a situation that has never happened before in the history of American transportation," said G. W. Luce, freight traffic manager of the Southern Pacific Co. How long this condition will last the railroad men say they cannot tell.

We are not informed by the daily press as to the real cause of this situation. No doubt that war material is given preference in shipping and other goods are left behind. But while the shipping of war material is enormous it alone can hardly account for the lack of ships for other goods. Maybe the following dispatch gives a little more light on the subject:

"Berlin, Dec. 20, 1915 (by wireless to Sayville, L. I.)—Since the beginning of the war to the end of November last 734 enemy ships with a tonnage of 1,447,628 were destroyed."

How many more ships have been destroyed by German submarines since last November we do not know, but almost every day some more ships are added to the list. Dispatches on one recent day, Feb. 26, report the sinking of five ships with a total tonnage of 13,184. Whether this wholesale destruction of merchant ships has anything to do with the scarcity of of tonnage on the Atlantic coast I do not know, but it seems probable to me. If it has, then the question arises: Will this situation not be worse in the fall when our prunes are ready to be shipped?

And then arise some more questions. If the railroads will not haul our prunes to Eastern ports how can we sell any to Europe? And if there are no ships available in the Pacific how can we get prunes to South America even if we should succeed in opening markets there? Will not the unprecedented high freight rates which, according to the London "Statist," had risen last December, from certain ports to England, from 300 to 800 per cent, make the selling of prunes in Europe more difficult or impossible? Is not the confiscation of 35 German ships at Lisbon by the Portuguese government, reported last week, which ships are to be used to transport goods to England, another sign of the growing scarcity of ocean steamers?

Calamity Possible.—Will not the packers use this situation to scare the growers into accepting a low price? And will not the growers be helpless in the face of such a situation the like of which "has never happened before in the history of American transportation"?

If this thing is as grave as it appears to me we may see in California a calamity similar to what the cotton growers had in the South. I can see hope only in an immediate organization of the growers before the prune buyers will get around and "scare the life" out of the people.

That in this emergency Mr. Weinstock as State Commissioner can be of immense help by bringing the resources of the State into action for the growers is self-evident. But he can only do something if the growers will organize.

Why could not the State in this real emergency procure some ships? Why could we not demand that some of the U. S. transports be used once in the interest of the people who paid for them? Has not our government sent a war ship to Europe to bring gold coin and comfort to our millionaires who were stranded there when the war broke out?

Is government help proper and good only for the wealthy, but paternal and bad for all who have to labor hard for a living?

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FRUIT ACREAGE ERRATA.

Attention is called to errors that occurred in the fruit acreage table that appeared in these columns last week. Olives, oranges, peaches, pears, plums, prunes, walnuts and almonds credited in the table to Mendocino county should have been credited to Merced county and vice versa.

San Luis Obispo county should have been inserted between San Joaquin and Santa Barbara counties and credited with the acreage of olives, oranges, peaches, pears, plums, prunes, walnuts and almonds which the table gives to Santa Barbara. In like manner counties appearing after and including Santa Barbara county in the table should be credited with the above fruits in the order named to the county immediately following. Yuba county, for example, has 350 acres of bearing olives and 900 non-bearing, instead of 450 bearing and 75 non-bearing. The 450 bearing and 75 non-bearing should have been credited to Yolo county.—Editors.

BURBANK CHERRIES.

[Written for Pacific Rural Press.]

The Burbank cherry has been fruited very little except in Vaca valley. Here are some points Millard Sharpe notes about it. The fruit ripens early in May, a very little later than the first of the Chapmans in his vicinity; it is larger; and if it cracks, the skin is broken around the side, rather than around the stem as with other varieties; the tree is thrifty, has heavy foliage which protects the fruit from birds and sun. Thrifty big leaves also grow all around the trunk, giving it much needed protection. The fruit is fine, especially if allowed to get good and ripe.

A great many Burbank trees in Vaca valley were planted in cold wet places—the very opposite of what any early fruit needs, especially cherries.

APPLE LIMB HEART ROT.

[Written for Pacific Rural Press.]

An apple limb an inch in diameter had been sawed off leaving a stub on a tree now belonging to Henry Bottcher of Beaumont. A shoot had grown from the side and seemed thrifty. The stub showed sappy rot when examined last winter. It was cut back to the point where the shoot came out. It still showed rot and Mr. Bottcher figured that if the rot were left, it would weaken and kill the limb by the time it would become of good bearing size. He figured that the rot would also extend to the trunk of the tree and make the whole thing die when it had received a few more years of care.

So he cut the limb back to the trunk, and sure enough the rot had beaten him to it, having run downward a foot during the season. The heart was rotten, but the outside sound. Mr. Bottcher now paints all such cuts with asphaltum, but warns against getting the wrong kind, which would kill the healing bark.

HOW TO NAME THE FARM.

To the Editor: We wish to name our farm. Will you tell us what steps to take to make it legal?—J. G. M., Orland

[You should apply to the Secretary of State's office at Sacramento and register it in the same manner provided for the registration of a trade mark. The cost, we believe, is one dollar.—Editors.]

It is reported that jobbers have already been in the field this year to contract for the Thompson Seedless raisin output of the Sacramento Valley, offering 7½ cents a pound.

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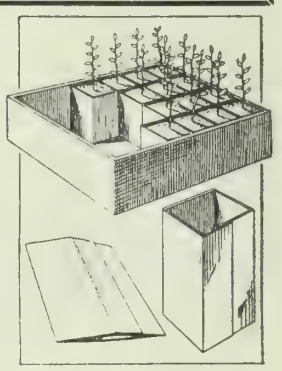


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What Pear Blight Looks Like.

To the Editor: Will you tell through the Pacific Rural Press what pear blight is like? Your book, "California Fruits," tells how to treat pear blight, but does not tell how it may be recognized.—Reader, Santa Rosa.

[The most obvious effect, to be seen during the growing season, is the blackening of the leaves and soft wood to which they are attached, as though these parts had been touched by a flame, and from this appearance comes its old common name, "fire-blight." More specifically, as Prof. R. E. Smith has written, the leaves, blossoms and young fruit wither and turn black on the affected portions but do not fall, remaining tightly attached to the twigs during the winter after the healthy leaves have fallen. The infection proceeds downwards through the inner bark of the twigs and branches, and when working vigorously the blight kills the twigs or whole branches very rapidly. The disease often runs down into the large limbs, where it remains alive over winter, producing the so-called "hold-over" blight, which is a source of infection during the following season.

The blighted twigs, branches or trunks show a red, sappy, juicy condition of the inner bark when infected with the true pear blight organism. If the disease is fresh and active the bark when cut into is very juicy, exuding the slightly sticky sap quite freely and showing bright red color in the inner bark. This symptom is of importance in distinguishing true blight from such troubles as die-back from sour sap, crater blight and other causes.

In the smaller twigs and branches the organism dries out and becomes entirely dead. But, through the agency of biting insects in the young shoots and suckers, the disease frequently gets into the trunk of the tree and also down into the roots. Here it spreads and causes the death of the tree by slow degrees, due to the destruction of the inner bark of the trunk or main roots. In such cases the leaves of affected trees take on a peculiar bronzy reddish coloration in the fall, which is quite characteristic to the experienced eye.

From the "hold-over" blight in the trunks and large limbs an infectious sap exudes when growth starts in the spring, which sap contains myriads of the blight organism. This sap is attractive to insects, which, in feeding upon it, get the blight bacteria upon their bodies and mouth parts, and transfer them to the blossoms or green shoots of other trees, thus spreading the infection.]

YOUNG APRICOT ROOTS.

[Written for Pacific Rural Press.]

To get better roots on young apricot trees, E. O. Eggen of Hemet soaks the ground thoroughly in spring when he plows under the winter cover crop of melilotus; then irrigates only in alternate months through the summer, to force the new roots to grow downward. The soil is loamy with no hardpan; but an irrigation sole is observed in late summer. Roots above this sole are dried out in the two months interim and the deeper ones are forced to grow more.

Late pruning in the spring is suggested by A. E. Goodrich for young apricots. This allows the roots a maximum time to withdraw nutriment from the limbs before the latter are cut off, and may promote root growth to a considerably greater extent in winter.

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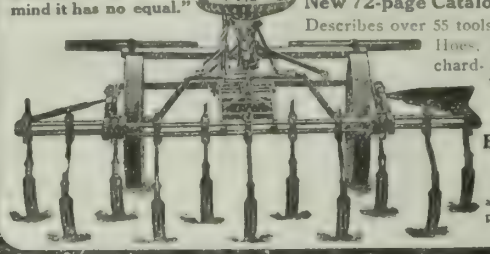
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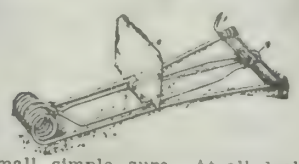
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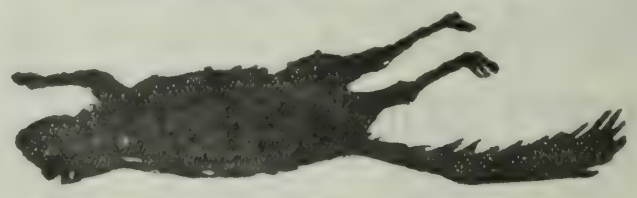
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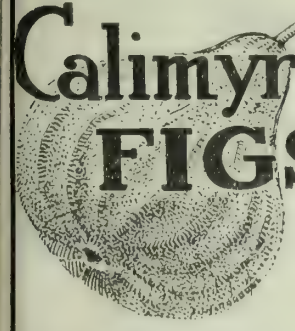
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COVER CROPS FOR FIG TREES

[Written for Pacific Rural Press.]

Plowing under green manure crops is not generally being practiced by the owners of fig orchards. However, according to G. H. Cross of Ceres, owner of an eight-acre fig orchard of 12 year old trees, nothing is more beneficial to the health of the trees, and nothing else except barnyard manure, which is almost impossible to secure, restores to the ground the material necessary for the wood growth and fruit producing.

His method of handling this cover crop is to do no plowing until the alfilleria and lupin (Lupin, says Mr. Cross, is one of the greatest plants for the storing of nitrogen in the soil. It is a member of the bean family and usually grows about 12 to 18 inches high) has gone to seed, which is about the middle of April, then it seeds itself every year. The ground is given a good irrigation before plowing, as the ground is usually hard and dry by this time. No further irrigating is done during the season. Surface cultivation is practiced to hold the moisture. For this a spring tooth harrow is used. Deep plowing, says Mr. Cross, cuts off the hair-like feeders sent up from the large deep-lying roots to secure the plant food from near the surface. If these are cut off, time is lost by the tree in growing more roots.

Were it possible to irrigate the orchard in the fall after the figs have been harvested, a much heavier cover crop would be received. In the Ceres district, however, this is impossible unless one has a pumping plant.

It has been noticed that certain trees that a few years ago produced sour figs are now bearing figs of very good quality. This change is largely attributed to the increased amount of humus and nitrogen in the soil, or in other words food essential for the making of perfect fruit.

TREATMENT OF GRAPE MILDEW.

To the Editor: What is the cause and remedy for red canes and red spots on Thompson Seedless grape vines? The spots look as if something had struck the cane and then scattered as mud would. If this is a disease, kindly advise me.—B. M. C., Yuba City.

[Answered by Frank Henry, Fresno.]

[As I have received the samples of wood from your grape vines I can say that it has the marks of mildew. The best remedy is to apply dry sulphur. It is not the amount of sulphur used, but the equal distribution of it. Apply it every ten to twelve days, starting as soon as the vines are two or three inches long until about July. That is, taking into consideration climatic conditions. I advise the use of more sulphur than most men, but I don't use it for mildew alone. I find that vines do much better with sulphur than without it—old vines especially. The main use of sulphur is to use it in time; don't wait until you see mildew, then expect results. It is true one can check mildew, but one loses many times over the cost of sulphur and labor. Many will lose by not sulphuring this year because sulphur is high and will try to go through the year without the use of it.]

It is anticipated that pineapple growers of Hawaii will ship 60,000 tons of canned pineapple to the mainland this year.



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FRESNO — PASADENA — OAKLAND — SACRAMENTO.

The New Orange Picking Sack.

[Written for Pacific Rural Press.]

To pick oranges 50 per cent faster by saving motions, with less injury to them; and to avoid the bits of brush and dead wood which fall into the ordinary picking sack and then into the picking box, injuring the fruit on its way to the packing house, E. R. Canterbury of the Redlands Co-operative Ass'n has devised a picking sack which is proving its worth this season.

It is a good bit like the ordinary bag, but the top is covered with the end of a long sleeve which grows smaller toward the other end. The small end is reinforced with a metal ring about four inches in diameter. This is hinged to a stiff band which fastens around the arm just above the bend of the left wrist.

Instead of reaching down to the bag with each orange the picker grasps the orange, clips it off, drops it by finger and wrist motion into the sleeve whence it rolls easily into the bag, while the hand has already grasped the next orange.

Of a gang which worked nine hours Feb. 5, the men picked 67, 69, 72, 73, 79, 94, and 104 boxes, respectively. They stripped the trees.

The bottom of the bag closes by a "pucker string" through small rings. This string hooks high on the side of the bag about as usual, but does not afford a catching-place for twigs as the folded bottom bags do. Thus trash is almost entirely kept out of the picking boxes.

In the orchard of J. S. Edwards of East Highlands, where the bags were seen in use, J. C. Perry, superintendent of the pickers, said, "I believe it is the coming sack. It makes a picker sore at first because it uses different muscles, but after a week we have trouble trying to change pickers back to the old sacks."

A TUSSLE WITH BUD-EATING BIRDS.

To the Editor: Sparrows and linnets are destroying the opening buds on our almond trees. We cannot put poisoned grain out as the poultry would be apt to get it. Is there anything that could be sprayed on the buds to make them distasteful to these pests? We caught quite a lot with rat-traps by sewing a piece of cotton cloth on the wire jaw to form a bag, using wheat as a bait, but they got too sharp to go near them. We then put out a lot of "Sure Catch" mouse traps without any bag and caught some that way. The wire traps used so effectively back east are of no use in California. We have tried several, but never got more than 2 or 3 in a season. We kill hundreds of them when cherries, apricots and peaches begin to ripen by poisoning the fruit they start to eat, and soon clear the orchard of them. A fresh lot invades the place during the winter. If butcher birds were protected and allowed to breed they would keep them away or kill them, but every boy who owns a gun shoots them, also the robins and larks.—Sam'l Haigh, San Jose.

[We know no spray for bud protection.—Ed.]

VINES UNTHRIFTY BUT NOT DISEASED.

To the Editor: I am sending you cuttings from my grape vines. The canes have dead and discolored strips of bark. The Italians who work the vineyard say they are affected with "Black" disease and require Bordeaux spray. Mr. Volck (County Horticulturist) tells me that grape vines in this valley have no disease requiring Bordeaux. He says that is used for feathery mildew. Can you tell me what treatment to use? The grapes get to the size of small peas and turn black and fall. This you told me last fall was due to imperfect pollenization due to late rain. This wood is of course not affected by that.—L. W. Watsonville.

[Answered by Professor Bioletti.]

[The vine cutting samples show no signs of any disease for which Bordeaux mixture would be useful. They have simply failed to mature and have died during the winter. The wood shows a deficiency of starch. The cause is undoubtedly cultural or climatic. Something has interfered with the proper ripening of the wood. This may have been growing too late in the season, until the leaves were caught by frost, or it may have been some insect or other injury to the leaves during the summer or autumn which prevented the wood from being properly nourished. In any case the only remedy, where canes show the symptoms of those sent up, is to prune the vine back to healthy wood and to leave very few buds on it. A vine with as little starch in as the specimens show is incapable of bearing fruit and is very liable to die back to the ground, especially if it attempts to bear fruit.]

The dates for the 1916 Yolo County Fair have been tentatively set for August 26 to 29 inclusive.

Ancient Farming

Herodotus, in the year 450 B. C., said that good cultivation yielded two-hundredfold in the Valley of the Euphrates. Even in that land of Eden, poor cultivation yielded but fiftyfold.

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HOW TO GROW TEPARY BEANS.

To the Editor: Will you give me instructions as to how and when to plant Tepary beans, in a heavy loam soil, capable of irrigation? I want to know how far apart the rows should be and how far between hills in rows.—H. J. C., Esparto.

[Answered by E. Powers, Manteca.]

[To prepare land for Tepary beans, I would proceed along the same lines as when planting any other beans.

The land should be plowed early in the spring and kept cultivated so as to be kept in good condition until planting time, which should be any time in May, if you can hold moisture that late. If not, you must plant the beans earlier. In planting, I would drill the beans in about eight inches apart in the row and have the rows thirty-six inches apart.

I would not attempt to irrigate as long as I could keep the moisture up by cultivation.]

HOW AND WHEN TO ROB BEES.

To the Editor: Will you kindly tell me how and when is the best time to rob bees, and should any honey be left for them or not? They have a small box on top of a larger one with a one-inch hole bored between them. The large one seems to be full, but not any in the small one on top. There is a lot of wild flowers here that are just beginning to bloom, also orange blossoms coming on.—E. P., Terra Bella.

[Answered by Chas. Goodman, Williams.]

[The only time to rob bees is when they have something to rob them of and that is not usually the case at this time of the season. Usually bees need all the surplus honey they have at this time to rear brood with; and if the upper story of your hive is empty you had better leave them to themselves as you might destroy the entire colony.

Robbing bees at this time would be about as fruitless an effort as to rob a train of empty flat cars. If you intend to produce honey, it will be much better to get modern hives and transfer your bees from the boxes, such as you described, to them.

If you are not familiar with modern methods, and it does not seem that you are, it would be well for you to get a copy of the A B C and X Y Z of Bee Culture, which would be of incalculable value to you in the management of your apiary. This book sells for $2.00 and you can no doubt obtain a copy from the Pacific Rural Press at that price.]

EASTERN OR CALIFORNIA SEED CORN.

To the Editor: I wish to ask your opinion concerning the planting of Iowa seed corn in this State. Will it produce a good crop without first being acclimated?—E. T. F., Chico.

[Answered by W. G. Stimmel, San Francisco.]

[You can raise corn in the interior valleys of California from Iowa seed, but my experience has shown that you can raise better crops of corn, all other conditions being the same, from California grown seed.]

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., March 7, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	2.92	32.60	33.29	56	38
Red Bluff	.68	19.04	18.51	68	34
Sacramento	.80	17.80	14.64	62	38
San Francisco	.94	26.50	17.26	66	44
San Jose	.30	15.40	12.50	68	36
Fresno	.94	10.78	6.86	62	38
Independence	.28	7.14	6.69	66	—
San Luis Obispo	1.20	25.62	14.96	72	38
Los Angeles	.26	19.23	11.74	80	46
San Diego	.48	11.97	7.59	70	48

THE WEEK

AS THE season is one of plenteous rains, early, middle and late, we may be pardoned for taking pains on their causes to speculate. For it will hurt no crops if we do offend the physical powers which struggle or blend to shape these agricultural ends of ours. We therefore make bold to comment upon current affairs in the search for a way to tell in advance what seasons may be. In a way, Church and State in California seem to be at issue in this matter, for Father Ricard's sun-spot-and-planetary conjunction stronghold is being shelled by the astronomical authorities at the Lick Observatory and Mt. Wilson, and his connecting galleries between the sun spots and terrestrial storms are being broken up. For it is shown that if the spots on the sun are due to electric storms, it does not follow that they have any relation to electric storms on the earth. Even if they both generate the same kind of juice for their own disturbances it is as idle to think that one influences the other as to expect that an American would be made drunk if a Russian should get behind his door and take a sly pull at the vodka. For the State astronomers hold that no matter how much is proved that the two disturbing juices are similar, the disturbance on the sun is too weak to set the earth agog—and we believe the same concession and claim can be made in the case of vodka. And we believe, though we do not get it from the astronomers, that a spot on the sun, which you can never look at without a smoked glass, can no more disturb his ordinary business of warming and illuminating the world, than a single San Jose scale on the skin of a ripe Bartlett can arrest the flood of perfume which it exhales to your delighted senses. And so we take it to be established, for the present at least, that if we are to know our weather for months in advance we must look for the signs of it in some place nearer than the sun.

IS THERE HOPE OF CANNED WEATHER?

FORTUNATELY, yes; and the sign of it may be found in the ocean, where all kinds of reasons would lead one to look for it. In fact, all our Pacific coast weather experts have been looking in the ocean for the reasonable forecast of our coast storms for a quarter of a century or more, but have found no perch from which to make systematic observations. Now it appears that no such perch may be required: that perhaps one may run out over the ocean with an aeroplane, take the temperature of the water here and there, and thus foresee what the ocean is going to do, as soon as the deep sea temperature, progressing upward or downward, shows a direction which may culminate in a disturbance in the embracing atmosphere or in an enduring calm. If the former, we shall get wet on the land, for the general movements will carry the disturbance thence. If there is nothing doing over the water, we shall continue to bask in brilliant winter sunshine. It is out of our line, of course, to go into the meteorological minutiae of this matter, but simply to record what seem warranted expectations from it. The work is being done by Dr. George F. McEwen of the University of California faculty at the Institute for Biological Research at La Jolla. By his method Dr. McEwen hopes ultimately to be able to predict some months ahead the general characteristics of the approaching season's weather. The chief practical significance of Dr. McEwen's discoveries is that, knowing the main factors in the problem of ocean temperatures in this region, and knowing further how the climate depends on the condition of the ocean, it will be possible by a study of the winds over the sea and of the sea itself, to predict months in advance what, in a general way, the climate of the adjacent land is going to be. And declaration that a coming rainy season will be prevalently wet or dry seems to be quite within the range of results from the ocean studies which are now being made with ships supplied with proper detective apparatus.

NEED OF CANS FOR AMERICAN EXPORTS.

IT IS clear enough that as California products increase we shall need more ships to carry our supplies to distant purchasers, and from the point of view of preserving value we can look upon the ship as a can—without insisting that the constructive materials of both are now alike as well as the purposes thereof. It is a historic fact interesting to recall that the first needs and opportunities of California, sixty years ago, were prominent among the forces which made the United States lead the world in merchant marine. Our people are apt to forget that Great Britain was not always mistress of the seas, but that from about 1815 to 1860 Uncle Sam had more ships than any other nation and the Stars and Stripes was the world's emblem of greatness and uprightness in sailoring. Then England bought us out and lawed us out, and we took to civil war, to railway building and other business, to neglect of shipping and all that to this day. Now California needs plenty of fast ships vastly more than she did in 1849, and will get them, and it begins to look very much as though they would be largely American ships. In a recent letter, approving of a Boston plan to make Sunday, May 7th, "sailor's day" in the churches, Secretary of the Navy Daniels has written as follows: "The sailor has always been one of the most useful men in any country. While it is true that the United States has allowed their merchant marine to decline, we have, nevertheless, come to a day in our national history when we must rebuild that marine. Already the great shipyards of the country are crowded with new ships, and are hastening the time of their launching. A great Navy and a great merchant marine must always go hand in hand. The very fact that we have built a great Navy and are increasing it today as never before, is an earnest evidence of the fact that we must soon also have one of the greatest merchant marines in the world. The sailor, therefore, is the coming man." Of course it takes money to build ships as well as men to sail them, and there should be a wide disposition to treat both fairly and each according to its deserts. For California needs more ships now than ever before in her history.

CALIFORNIA CANNED FORAGE.

SPEAKING of weather preserved for future use reminds us that this issue has much to say of another canned product, and one which may rival in aggregate value all the fruits, garden-sass and salmon which we are now putting in tins for local use and export. It is the matter of canned forage which has now, after decades of irregular development, reached a demonstration and headway which will carry it to importance and value of resulting products which cannot be foreseen. The silo as a means for securing succulent forage, out of the growing season thereof, was first brought to the attention of Californians by the Pacific Rural Press in 1877. We had at that time not only references to it drawn from the advocacy of the method by Professor Caldwell of Cornell and other Eastern leaders of that day, but a special contribution by the late Felix Gillet, giving translations from the French—for the French must be given credit, not for inventing the method, but for starting it on its present course around the world. At that time the advocacy pointed to the original form of the silo—a pit in the ground, as the word indicates. But it was not long a subterranean affair in this country, and the first California silo was above-ground. It was built in San Benito county and was hardly tighter than an ordinary tank-house, and it made a lot of bad corn silage, which poisoned a few horses; which, at least, did not help the new proposition to popularity in California. But this was not the chief reason why the silo made slow progress in California. Pioneer farmers and dairymen could not see the need for the cost of structure and filling machinery to make canned forage, when, theoretically, green feed should be growing most of the time in this mild climate. Most stock men preferred to let the clouds and the soil do the growing and the stock do the harvesting. Even those who believed in growing special crops for feeding, and there were not over-many of them in that day, thought they could do better by growing summer-sown beets and other roots to supplement scant winter pasturage and winter-sown roots for scant summer and fall pasturage—and have plenty of green corn-fodder and alfalfa, whenever they could get them, and thus came the wide impression of three decades ago that the silo would have scant opportunity in California live stock feeding policies. But there were, here and there, individuals who did well with siloes and strongly recommended them to others. In the

'80's there was perhaps no more persistent silage-advocate than Mr. Jewell of Petaluma, and at one time Two-Rock valley, near that town, had more siloes within its borders than existed in all California outside. In the '90's the leading silo-supporter of the State was the late Mrs. Minna Eschelman-Sherman of Fresno, and she preached and practiced the silo method to the great advantage of the State. Since 1900 silo construction has spread rapidly and compassed all parts of the State. It has found one of its great supports in the demonstration that many other green stuffs than corn can be profitably handled, and that many such stuffs are not only preserved for feeding when forage is scant, but are given, by the process of preservation, more readily and easily available nutritiveness than they possess in the fields that grow them. Another demonstration, which has strong force, in the present rapidly growing popularity, is the desirability of good silage for other stock than dairy cows. To the animal caterer, in fact, there has come, in well-filled siloes, an assurance and a consolation against scant fields at home and high prices in the markets, which is like that with which the housewife meets a bunch of unexpected guests when she has a fragrant ham on the wall and a lot of canned peaches in the pantry. Then, of course, aside from emergencies in animal catering, there is the constant assurance that silage, put in a good receptacle with the best labor-saving machinery, is not only good for nutrition, health and juiciness of body, which favor growth and free secretion, but is cheap and therefore directly a minister to the economics of production. It is true that California has awakened slowly to the desirability of the silo, chiefly because it is possible to have so many things freshly growing at so many times in the year, but the State is none the less fully awake at the present time. It seems to be altogether beyond question now that the better that California is than other States without the silo, still better California is with all her fresh vegetation supplemented by it. For this reason the reader will find much about siloes in this issue.

WILL ENGLAND STOP BUYING FRUITS?

WE HAVE not much confidence in the current rumor that "England has declared an embargo until next August against both canned and dried American fruits." If she has, she will have to expropriate all the supplies now in England, or regulate the sale of them, for the hands which now hold perhaps supplies enough to last almost till that time, will have a merry time putting up prices and robbing consumers. Such importers would like nothing better than such an embargo against later, competing importations. Such an embargo would, therefore, from this distance, seem to be a greater injury to Englishmen than to Americans, and there is no reason why the government should intend injury to either. If the embargo is planned to make people more economical, as some commentators remark, there are many other things which could be more safely embargoed than the imported fruits which the English have relied upon for centuries to keep them hale and hearty, and which are relatively cheaper in preserved than in fresh forms. This would certainly work an injury to the English people which the government would not be likely to overlook. As for injury to Americans, it would probably be not bad for the crop of 1915, which is largely disposed of, nor for the crop of this year, because it cannot be ready until August, and there is no great carry-over to menace that. We are, therefore, thinking and writing awkwardly to account for a thing which may not be coming to pass at all. It may, after all, only be an audible dream by those who would like to rattle producers a little to get them ready for a spring-contracting campaign. The cure for such a thing is for producers to be so well posted that dreams cannot disturb them. And if you wish to think about that, with special reference to its bearing on prunes, you cannot do better than read carefully the letter by Mr. Holler on another page. He passes no whispers; he just naturally cries out for organization.

JACKASSES AND JACKASS RABBITS.

WE HOPE it is not true that our systematic scientists and game experts are making it hard for the San Joaquin valley people to rid themselves of the jack rabbit pest. The report comes, however, that way, to the effect that hunters of Fresno county insist that the jack rabbit belongs to the order of rodentia, which would classify him as a rodent and make him a predatory animal. The Fish and Game Commission, however, insists that he is of the order of lagomorpha, and of the family of leporidae, which brings the rabbit into the classification of game animals. No license is required to hunt predatory animals, but a license is required to hunt game animals. We have a strong impression that we do not care whether the jack rabbit belongs to the leporidae or not, or whether he may belong to the lepidoptera. He is surely a winged pest, and every man's gun should be against him. whether he is a licensed or unlicensed marauder. No law should be made on scientific relationship, but upon what a beast does to man in any place where a man is expected to live and have property. To keep a country alive with jack rabbits because sportsmen like, once in a while, to run a course or because nature-lovers do not like to see a species run out, is no consideration as against the vines and trees which these light-footed rascals destroy. The State ought not only welcome hunters to help clear the country of them, but might well furnish munitions to that end.

Queries and Replies.

Querists must give name and address.

What About Rural Credit?

To the Editor: The Farmers' Union and Farm Bureau members are giving some attention and discussion to rural credits. Could you tell your readers briefly how it now stands and point out how we can try to influence our senators and other legislators to give us something? True, the people voted it down at the last election, but I think they are sorry.—J. C. Galloway, Modesto.

The only pending legislation which can reach Californians is in the Congress, where a bill approved by a joint committee of both houses is awaiting action. It prescribes a way for organizing land banks on what the conservative economists call a "safe and sane plan," because it does not call for use of public funds and does not provide government guarantee of security for bonds. It arranges a way by which associations of farmers can have banking arrangements of their own under government regulation. It provides machinery by which farmers can assemble their security and secure collective credit upon it. It is all that is to be had from this session of Congress, and Congressmen can be called upon to vote for it. It may be more than can be had, for politics may knock it galley west until after election.

As for State legislation on rural credit there can be none until the legislature of 1917 assembles, but the "commission on rural credit" appointed by Governor Johnson is still alive and the governor may be expected to say something to the legislature next January—unless he should be elected president of the United States before that time. It looks to us like a period of watchful waiting.

Mid-summer Alfalfa-Sowing.

To the Editor: Would you advise seeding alfalfa on irrigated land in July or August? H. H. B., Turlock.

No, we do not advise it, but we would like to have some reader advise it if he can do it on the basis of successful experience. Because we believe that such sowing ought to succeed if the ground is deeply wet with irrigation; then plowed deeply, then irrigated again and after a few days harrowed or disked lightly, not making the surface too fine. Then sow and brush over the surface which would roll over the small clods and press the seed lightly into the moist soil. The young plants will make their way around the protecting small clods and should grow so fast that another irrigation can be given before the soil gets deeply dry. If any one has secured a good stand in mid-summer please tell us how. If no one has done it, will not some one try a small piece in this way and report results?

The Flat-Head Borer.

To the Editor: What treatment shall I pursue for the worm they call the "borer"? It is a small white, round worm, with a flat head, and bores into the young apple trees. Everybody is troubled with them here and they have nearly destroyed my orchard by eating their way into the heart of the tree.—C. W. F., Dos Rios.

The current generation of flat-headed borers has probably done all the harm it can by this time and will be making its way toward the outer bark where the worm will change to pupa, and from that will come a grayish, greenish bronzy beetle about half an inch long. These beetles will skirmish around for a spell and then take to laying eggs on the bark of trees, generally near the ground; preferring sunburned or otherwise injured bark, even if they find it higher up. From these eggs comes another generation of flat-heads, which excavate first under the bark and later may go into the wood, as you find them. The first way to fight these pests is to keep all bark which can be reached by the sun after the foliage appears, thoroughly covered with whitewash and keep it covered by repeated applications. Then, in the summer and fall, look for discolored places on the bark where the whitewash may not have reached, cut in and kill the grub with a knife or, if you find a hole, push a wire to the end of it and kill the grub that way. This examination must include the bark below the loose ground surface, for younger trees are sometimes girdled at that point. Examinations should be made at once (if not made earlier as they should have been) and trees badly hurt in that way should be replaced before it is too late to do it this season.

Following Blackeyes With Mexican Reds.

To the Editor: Would it be advisable to plant Mexican Red beans on land that has been planted to Blackeye beans for the last two seasons where the Blackeyes produced two-thirds more the second season than the first season? How will Tepary beans do on land that has been planted to grain two seasons and Egyptian corn one season?—W. A. A., Ceres.

[Answered by Prof. John W. Gilmore, University of California, Berkeley]

[If the land is reasonably fertile I see no disadvantage in following the crop of beans with a crop of Mexican Reds. Both of these varieties are adapted to about the same type of soil. It might have been a good plan to follow the Blackeye beans with a crop of grain, for grain is usually much benefited by a previous crop of beans. However, it is believed that the season is now too far advanced for sowing grain, consequently the sowing of beans or some other summer crop is the only way left. No doubt a crop of feterita, or dwarf milo might do well following a crop of Blackeye beans, but it is not evident that the sorghums will give a more valuable harvest than the Mexican Reds.

Tepary beans generally do well upon grain land in the vicinity of Ceres, and since these beans are relatively short seasoned it is sometimes possible to secure two crops during the year, the first crop being planted in April, and the second during July. It should be pointed out in this connection, however, that Tepary beans should be marketed as such and not as small whites. The California market for small whites, which is a good one, is being injured by selling Teparies as small whites.]

CALIFORNIA FERTILITY GOES DEEP.

California soils are rich nearly double as many feet down as soils in humid regions are inches, according to the results of soil studies now going on at the University of California.

Although it has long been known that most of the soils of the agricultural regions of California have great depths and that when properly encouraged by moisture and aeration the roots of trees penetrate downward for very many feet, it has been a question as to the plant food conditions below the surface. The large collection of 110 soil columns, ten to twelve feet in depth, secured by Professor Loughridge from all over the State several years ago and arranged in the lecture room of Budd Hall at the University of California, has afforded an excellent opportunity for study of this question and the results of physical and chemical investigations of each column are now being prepared for publication by him in the University Agricultural series. The report on the distribution of humus and humus-nitrogen throughout each column in the depth of twelve feet has already appeared, in a pamphlet of 100 pages (Vol. 1, No. 8). As humus is a distinguishing characteristic of a soil and marks its depth, it was shown that California soils have depths of very many feet, instead of but six or ten inches, as in upland humid soils. Similarly, the coming report will show that at depths of six and twelve feet, and even more, the soil is very generally as rich in available potash, lime, and phosphoric acid as at the surface and frequently much richer, thus emphasizing the great economic importance, from a fertilizing point of view, of enabling tree roots to utilize this richness instead of drawing exclusively upon the upper soil, as is the case in the humid region.

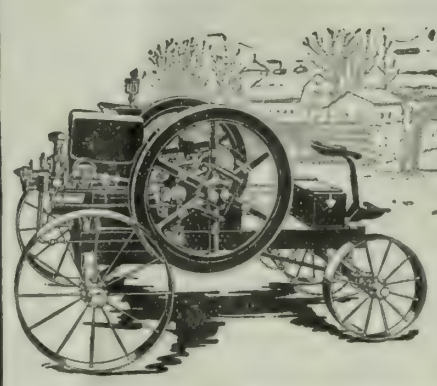
MOON FARMING AND FETERITA.

To the Editor: What is your, and the scientific, opinion concerning the planting of seeds according to the signs of the moon? Would also appreciate information concerning yield, sale, price, etc., of "feterita" in comparison with milo maize?—W. H. M., Visalia.

[Prolonged investigation by the Weather Bureau determined that no difference was found in planting in different phases of the moon. If we paid any attention to it, we should plant in the dark of the moon, so that we might get the plants up to use the little more light which the moon gives.

From accounts we have received from growers, feterita seems to yield somewhat more than milo maize, especially if the plants are subjected to drought conditions. We have heard of no one having trouble in disposing of good feterita, through the ordinary channels and at approximately the same price as the other sorghums.—Eds.]

Welcome News on Engines



WON HIGHEST AWARD PANAMA-PACIFIC

International Harvester Kerosene Engines Mogul—Titan

INTERNATIONAL Harvester Mogul and Titan engines work successfully on kerosene, running on light or full loads. They use the least expensive of oil fuels. You are not limited to one kind of fuel, as with a gasoline engine, but can use any kind that is most convenient or least expensive. That is a very real advantage.

You know something about I H C engines. You have heard of their thorough reliability, the good material and workmanship that goes into them, the ease with which owners get repairs and service when needed, the years they last—and the other points that have sold a quarter million I H C engines.

But do you appreciate what real kerosene-burning means—what it saves you in money—how it assures you an unlimited supply of cheap fuel? You need Mogul or Titan kerosene-burning engine power to be sure of always having power at a price you can afford.

Ask the I H C dealer to show you a Mogul or Titan engine—sizes from 1 to 50-H. P. If you prefer to write us, we will tell you where you can see our engines and send you catalogues at the same time. Drop a card to the address below.

International Harvester Company of America
(INCORPORATED)
Crawford, Neb. Denver, Col. Helena, Mont. Portland, Ore.
San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

LIME FOR LAND
GROUND CARBONATE
AIR-SLACKED
HYDRATED LIME.
One Ton Hydrated Lime Equals 2 Tons Gr. Carbonate.
BOOKLET FREE.
Pacific Lime & Plaster Co.
Monadnock Bldg., San Francisco

Beekeepers' Supplies Everything for the Honey-Bee
Catalogue sent free on request.
THE A. I. ROOT CO. 245 Mission Street, San Francisco, Cal.

Second Hand PIPE Screw Casing
ALEXANDER PIPE COMPANY
OFFICE—250 North Point Street, San Francisco, Cal.—WORKS

P. & O. No. 40 Combined Corn and Bean Planter



Furnished with open center or solid concave tires.

The Combined Corn and Bean Planter here illustrated is a machine built by one of the largest manufacturers of planters in the world, particularly to meet the requirements of the Pacific Coast trade.

It is not a made-over machine but is built from the ground up for Coast needs. This fact, together with the reputation of the P. & O. Company for building tools right in every detail, insures absolute satisfaction to every user of this planter.

It's the Way They are Built

FEATURES:

Equipped with a full set of plates for planting any of the different kinds of corn or beans commonly planted in California, including Egyptian and Kaffir corn.
Adjustable to any width rows from 28 to 44 inch. The check rower machine is adjustable for checking rows 3 ft. 4 in., 3 ft. 6 in., and 3 ft. 8 in.
Accurate planting insured by the sight feed. Sight feed has a large opening, and the seed is visible at all times to the operator as it drops from the hopper to the upper valve.
Quick, detachable runners held on the shank by one bolt. Easily removed for sharpening.

Write for descriptive circular and address of nearest agent.

Baker & Hamilton
San Francisco, - Cal.

BUSINESS METHODS IN FARMING.

To the Editor: There is much hysteria these days about Rural Credit. Many people think that a farmer should be allowed to borrow money to at least 60 per cent of the value of his land. Such a privilege would be all right, provided the farmer had good business ability. My contention is that the farmer is not a good business man, and should not have access to large loans. It is simply a lack of business training with the farmer. I know a good farm that was run at a loss for years simply because no accounting was done. It took a son, who had been away from home, to discover that the profits from the fruit was supporting a non-paying chicken business. A regular set of books was kept and every department of the farm that didn't show a profit was discontinued. The mortgage was lifted in a few years.

In the early 50's two men settled in this section; each acquired a large tract of land. They both reared big families. One, whom we will call A, deeded his land to his heirs with the proviso that it could never be mortgaged. The other (B) made no such proviso. B's land was somewhat better than A's. The families were about the same in most respects. Today, after some 15 years of ownership, the heirs of A have their land free from debt and are prospering. The heirs of B have mortgaged about half their land.

These cases that I have cited do not substantiate my contention, but they do throw a little light on the subject. **W. Ralph Thomas.**

Gilroy.

ADVISORY BOARD FOR STATE COMMISSION MARKET.

During the past week the following advisory board has been named by Col. Weinstock, State Market Director:

James Madison, Fresno; F. B. McKevitt, Sacramento; G. Harold Powell, Los Angeles; W. B. Kiggens, Lindsay; G. H. Cutter, Sacramento; William Glass, Fresno; W. E. Sprott, Porterville; E. E. Ogden, San Francisco; F. S. Jerome, Watsonville; T. C. Tucker, San Francisco; Chas. Donlon, Oxnard; F. W. Andreasen; San Francisco; Robert Newton Lynch, San Francisco; Dr. James B. Bullitt, San Francisco; Chester H. Rowell, Fresno; Mortimer Fleishhacker, San Francisco; General N. P. Chipman, Superior Judge of the Appellate Court; Professor Thomas F. Hunt, University of California. Berkeley; Frederick J. Coster, San Francisco; A. Schilling, San Francisco; Aaron Sapiro, San Francisco; E. O. McCormick. San Francisco.

The farmers in the Bellevue section four miles south of Santa Rosa are endeavoring to organize a drainage district whereby arrangements will be made for the drainage of about 8000 acres of land in that section. They are also trying to cooperate with the Cotati valley people to drain an additional 4000 acres in that section, making a total of 12,000 acres in one unit. This district comprises one of the richest and largest level bodies of land in Sonoma county. The proposition was put before the Supervisors and authorized by them at a meeting on Feb. 4. A meeting will be held on March 11 and directors will be elected. They will then make a survey and an estimate and provide for a bond issue. They figure on being able to do the work at a cost not greater than $5 per acre. If the proposition is put through, it will be one of the most important pieces of work ever undertaken in Sonoma county.

SHOCKING OR STACKING ALFALFA FOR MEAL.

To the Editor: I am desirous of mealing my first crop of alfalfa and binning it and would like to know if I can run it directly through the machine from the shock or whether it will have to be stacked and sweated first.—C. P. H., Fowler.

[If you can get it good and dry in the shock you can run it direct from there into the machine, but that may be a difficult thing to do with the first cutting on account of the spring showers. Stacking would therefore probably be the safer plan. But isn't there danger in grinding the first cutting into meal on account of the scattering foxtail and other weeds which are usually to be found in that cutting?—Editors.]

SILOING VOLUNTEER CROPS.

To the Editor: Would appreciate any information you can give regarding the filling of silos with wild oats with some foxtail or with alfilaria.—J. A. P., Oro Lomo.

[Oats and other cereal fodders should be cut for silage purposes after the kernels have passed the milky stage. If left in the field till nearly ripe water should be supplied liberally while running through the cutter. Foxtail should be siloed while still green and before the beards become hard. This applies when siloing alfalfa infested with foxtail. We have never heard of anyone siloing alfilaria, but should proceed with it in the same manner as advice about siloing alfalfa which appears in other columns of this issue.—Editors.]

Eight cars of oranges left Pomona on March 4 for the East.





John Deere Disc Plows for Tractors
For Field or Orchard

MADE especially for use in the West. Work successfully in every soil where a disc plow should be used.

Plow anywhere from five to twelve inches deep.

One-man outfits—controlled by man on the tractor. Work with any standard tractor.

Can be used either for field or orchard work simply by changing the land axle.

All levers down close to plow when at work—plow can be operated close to trees and under limbs without injuring them.

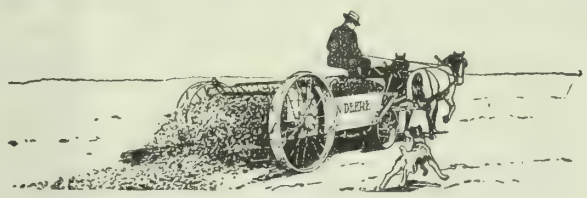
Easily transported—special lever at the rear for lifting discs high and level.

Over fifteen inches clearance under beam; twenty inches between discs.

Twenty-four or twenty-six-inch discs with chilled metal bearings—constructed so that bearings do not drag along wall of furrow when plowing deep.

Can be reduced to four discs by taking off one intermediate section and telescoping connecting rods.

Write for free booklets describing the John Deere Tractor Disc Plow No. 10 for field work and No. 11 for orchard and vineyard.



John Deere Spreader
The Spreader with the Beater on the Axle

ONLY hip high to the top. Wheels out of way when loading. Mounting the beater on the axle is patented. Write for Spreader booklet.

Three exclusive John Deere Spreader features:

[1] Beater on the axle—nothing else like it. [1]

[2] Revolving Rake—load moving back to beater revolves the rake. Draft actually less. Even spread certain—no bunching. [2]

[3] Ball Bearing Eccentric Apron Drive—requires no attention. Performs wonders in the working of the spreader. [3]



R. & V. Engines
Dependable Farm Power

"R & V" Triumph—always develops rated horse power—made in 1, 1¾, 2½, 4, 6, 8,10,12, 16 and 20 H. P. sizes, stationary and portable.

Easily started; perfect speed control (speed can be varied 40 per cent without stopping engine). Complies with insurance regulations. Hopper cooled—a simple, efficient system that does not require long pipes and numerous fittings.

High grade throughout. Inspect the extra guard ring over piston pin to prevent possibility of scoring cylinder. Ask about the "R & V" oscillating magneto. Write for free booklet.



John Deere Plows for Light Tractors
For Orchard and Vineyard

Practical—work with any standard tractor. One-man outfits—controlled by man on the tractor.

No levers—one reason why these plows work so successfully. Plows leveled and depth regulated by screw device. Can be run close to trees and vines without injuring branches.

High and Level Lift—Pull the rope and all bottoms raise high and level. Another pull lets them down.

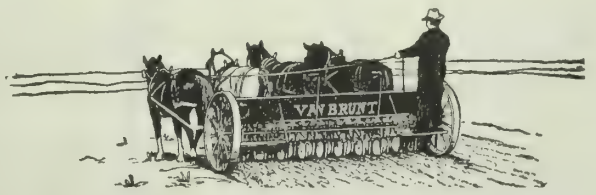
Plows raised in fourteen inches ground travel. Make square headlands.

All bottoms raise high like a double bail, high lift horse plow. You know from experience what this means. Plows do not clog or gather trash on the turn.

Extra wide and semi-floating front truck.

Equipped with either three or four famous John Deere 12-inch bottoms with Quick Detachable Shares—the shares that can be taken off and put on in one-fifth the time it takes to change bolted shares.

Write us for free booklets telling all about John Deere Light Tractor Plows for orchard and vineyard work, or Light Tractor Plows for regular field work—the plows with Quick Detachable Shares, high and level lift.

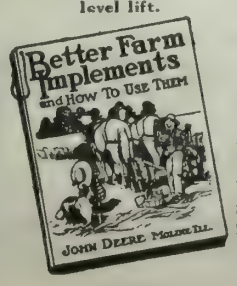


Van Brunt Drills
With Adjustable Gate Force Feed

THEY plant any small seed, alfalfa to bearded oats, peas or beans. Quantity per acre easily regulated merely by shifting feed gauge levers.

All the ground planted without wasting seed. The Van Brunt adjustable gate force feed and special agitator in the hopper compel seed to leave hopper in even, continuous streams.

An even stand of grain is certain. Pressure springs compel discs to make furrows of equal depth and seed is protected until it reaches bottom of furrow. Single or double discs. Write for free booklets.



John Deere Dealers Everywhere
Better Farm Implements and How to Use Them

BOOK FREE—168 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars. Describes and illustrates: Plows for Light Tractors; Steel and Chilled Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Lister Plows and Cultivators; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain Wagons; Teaming Gears; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders, Stackers, Sweep Rakes, Mowers, Self-Dump Sulky and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills and Seeders; Grain Binders; Corn Binders; Gasoline Engines. This book sent free to every one who states what special implements he is interested in and asks for Package No. X-152.

JOHN DEERE MOLINE, ILL. THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

John Deere, Moline, Illinois

General Agricultural Review.

CITRUS AND SEMI-TROPICAL.

Senator Clifford Coggins will plant 1,000 grapefruit trees in the Mesquite Lake district of Imperial county.

The Surprise avocado is a new thick-skinned variety which ripens late in February. This is very desirable, as it may be shipped when other fruits are scarce.

String beans are great hosts for citrus red spider, according to Wm. Warner of Covina, and should not be planted in citrus orchards, except perhaps as a trap crop.

Avocados are being grown from cuttings by L. E. Nigh of the Armstrong Nurseries. It takes about two years to get as good a root system as seedlings make in one year.

Red spider is menacing the citrus orchards pretty generally through Southern California. Spraying with lime sulphur or Shurekill oil emulsion is being practiced in many orchards.

DECIDUOUS FRUITS.

Winter Bartletts and Winter Nellis are being put onto the Los Angeles market in fine shape early in March at $2.50 per box.

Deciduous tree planting can continue safely until April 15, according to Grant Stoneburner of the Armstrong Nurseries.

Nine tons of Tuscan peaches from 5 acres of dry-farmed, 8-year trees in the Ontario district were sold without dockage to the canneries by M. Rusznak last season.

Members of the Beaumont Fruit Growers' Association have been called to a meeting on March 18, for the purpose of making some amendments to the by-laws.

The report of the Butte County Horticultural Commissioner shows that there are 19,905 acres planted to fruit trees in that county, with prunes and olives in the lead.

That the California dried fruit industry is making rapid strides in supplying domestic and foreign needs is evidenced by the fact that the exports of domestic dried fruits have increased in value from $28,868,000 in 1914 to $36,924,000 in 1915.

Irvin H. Reimers, Supt. of the Wylie M .Giffen ranch near Merced, reports that they are putting out 40 acres to Orange cling peaches and the same amount to White Adriatic figs. Next spring they hope to set out 200 acres to Calimyrnas and peaches.

Great activity in tree planting in Sutter county is reported. J. Bender recently received a consignment of 500 prune trees, R. S. Childs has imported some 1000 prune trees, and T. L. Quigley recently received about 1200 young trees, mostly almonds.

Beginning March 6, an expert force of canvassers were sent out in the peach growing districts by the California Peach Growers, to learn among other things the attitude of the growers toward this new association, and to secure if possible the necessary subscriptions by May 1.

Ground will be broken within a week for new canneries at Ontario and Chino, by the newly organized San Antonio Fruit Growers' Association. The growers of peaches in Pomona Valley are unanimously cooperating with the Association, believing same to be their salvation in marketing their future crops.

GRAPES AND SMALL FRUITS.

Regulations fixing a standard weight of berries when offered for sale in containers have been announced by Chas. G. Johnson, State Supt. of Weights and Measures.

Of the 15,000 additional acres demanded by the California Associated Raisin Co. by April 1 before they would renew their contracts with the growers, only 4000 more are needed.

The berry districts of Puente and Rowland, Los Angeles county, are almost entirely changed over to orchards, principally walnuts. From Rowland alone four years ago $76,000 worth of berries were shipped.

The Dollar strawberry in the Rowland-Puente district grows too small to be of commercial value, according to R. P. Paden, one of the oldest shippers. Brandywine and Klondike are the commercial varieties.

Sixty acres of Muscats owned by Benton Ballou near Ontario are mostly sent to the wineries, complaint being made in that district that the Associated Raisin Co. was slow in making settlement and the growers snubbed.

At the recent annual meeting of the trustees of the California Associated Raisin Company at Fresno, the Board of Directors, consisting of Wylie M. Giffen, Hector Burness, A. G. Robinson, H. Graff, H. H. Welsh, A. G. Wishon, and Jas. Madison, were re-elected.

The present season is the first that the Rowland Berry Growers and Shippers will not have enough home-grown strawberries to fill orders and will have to get some from other berry districts in Los Angeles county, according to F. F. Fleming who has been in the game from its start there 12 years ago.

GRAIN AND FIELD CROPS.

A potato contest is now in progress by the members of the Placer County High School Club.

Arizona farmers have been urged to plant field peas by Prof. Morse of the University of Arizona.

Last season 13,000 acres were planted to rice in Butte county; this spring 38,000 acres will be seeded.

Grape Vines

We are closing our stock of resistant grafted vines—**Carignane, Zinfandels, Petit Sirah and Cubernet.**

First choice vines at $45.00 per 1000.

CLOVERDALE NURSERY CO.

Cloverdale, Sonoma Co., Cal.

Dewey Strong & Townsend
SCIENTIFIC PRESS PATENTS PATENT AGENCY
911 Crocker Bldg., S. F.
Circular containing 100 mechanical movements mailed free.

Save Money on Wire Fencing!
-send for WHITING-MEAD'S Free 1916 catalog
showing how to save money on Building Material

WARNER FARM FENCING, 50c ROD.

This price in 20 rod rolls. Made of No. 10 galvanized wire with Glidden galvanized barb wire margins. This is an exceptionally good fence, designed to be used for turning both large stock and pigs. The Warner Farm Fence is made with the same tie as other Warner styles. The barbed borders are a great advantage. The barbs on the bottom prevent hogs from crawling under, and those on top prevent stock from reaching over and depressing the fence, while by their being woven into the fence the danger to the stock is removed. It should be remembered that it is just as important to prevent going over or under a fence as to prevent going through.



Bankrupt Stock of Shovels.

About 1,000 at 65c Each. Delivered Free to You.

-Another fortunate purchase, a lot of shovels, about 1,000, all in splendid condition, but from being in a warehouse during recent rains have become slightly water stained, but this in no way affects their usefulness.

—Choice of Long Handle, round or square point shovels, or the "D" handles with round, square or scoop shovels any one of them or as many as you want, 65c each, delivered free within a radius of 100 miles of L. A.



Ready Roofing, $1 a Roll.

—"Our Leader" put up specially for us by one of the largest roofing manufacturers in the world. It's 1-ply smooth finish, and is easily the best value that we have ever had to offer at even a higher price.

—Each roll contains 108 sq. ft. with nails and cement for laying. This will cover 100 sq. ft. of roof, allowing for laps. Other roofings at like low prices:

1 Ply King, per roll.....$1.25
2 Ply King, per roll.....$1.75
3 Ply King, per roll.....$1.75
Snow-White Roofing Paper, per roll $1.75

Paints $1.50 Gal.

You can buy paints cheaper from us than any other dealer in the West. We buy in large quantities and sell for the lowest prices.

—Standard House and Floor Paints, $1.50 per gal.

Standard makes of varnishes at 25% off regular prices.

Everything in Paints, Wall Tints, Brushes, etc., at big savings to you.

Dutch Kalsomine, 4½c per lb.
Black Graphite Roof Paint, per gal.* 50c
Standard Roof Paints - red, green, gray — per gal.* 85c
Shingle Stain, made from pure ground colors, per gal 50c
*In 5 gal. lots only at this price.



Plumbing.

—Our plumbing department is exactly the same in variety as carried by any of the big "standard price" plumbing jobbers, bought from the same factories. But we buy in tremendously large quantities and at the same time take some seconds and slightly imperfect goods and get big reductions on regular prices.

—We make you the most exceptionally low prices as a result, so that no matter what you want in plumbing, from a $90 (regular) bath tub at $35 to a somewhat imperfect lavatory, the $7 grade at $4.

—Send us your plumbing list and we will show you in dollars and cents that it pays to trade with us.

75c Shingle Stains, 40c Gal.

—A special lot of shingle stains that we have secured in an unusual way and so offer them at about half price. Specially made for use in this climate. Choice of brown, yellow, red, and black. This price in 5 gal. cans only.

—This shingle stain is Railroad salvage from the recent floods, and on account of being wet many of the cans lost their labels and became mussed up, but the contents are absolutely O. K.

Lumber.

—A few items that should give you an idea of how you can save money **ORDERING BY MAIL** from us. We carry a full and complete stock of lumber, both rough and finished at all times, and will cheerfully send you our prices.

1x8 Redwood Shiplap, $22 per M.
1x4 Redwood Ceiling, $20 per M.
½x4 Plain Bevel Siding, $11.50 per M.
—The last item in 6 to 10 ft. lengths only and F. O. B. the cars at Los Angeles at this price. All of the above have been specially run through the mill from common lumber, especially for erecting outbuildings, poultry houses, etc.



No. 1 Redwood Shakes, $15 per M.
—Absolutely number one grade and measure 5 inches by 36 inches.

Windows—Doors—Etc.

—Our Sash and Door Dept. is one of the largest in the Southwest, and occupies one entire floor of our large main building. We have at all times, ready for immediate shipment, everything needed in standard sizes, sashes, doors, screen doors, front doors, etc., etc. **SEND FOR OUR PRICES BEFORE BUYING.**

$2.50 Woolnap Blankets, $1.40.

—Very fine grey blankets, have attractive colored borders at ends and are well finished, full bed size, just right for chilly mornings. Order early on this item, as we have only about 6 dozen blankets on hand.

Mail This Coupon TODAY! P.R.P.
Whiting-Mead Co.
9th & Maple Ave, Los Angeles,
-Send me your Free 1915 catalog of Building Material
Name _____
Street _____
City _____
State _____

Whiting-Mead Company

9th and Maple Ave., LOS ANGELES

Growers in the Mattole Valley, Humboldt county, are planning to double the acreage this season devoted to beans.

Great damage to the wheat and barley fields in Kings county is threatened on account of the high water in Tulare Lake.

A record price will be demanded this year for grain jute bags, Calcutta sacks now selling for 13½ and 14 cents. All of the sacks made at the State penitentiary have been sold.

Some 60 acres of tomatoes in the young citrus orchards of North Whittier Heights helped supply the Los Angeles and Pasadena markets until the rains of mid-January made them too soft.

The first cutting of alfalfa in the Ontario district will start about March 10. According to Chas. Johnson, manager of the Ontario Dairy farm, alfalfa was cut as late as December last year.

OLIVES AND NUTS.

The California Almond Growers' Exchange reports that the entire 1916 crop of almonds has been contracted for at prices to be named later.

Blackeye bean straw to loosen the top soil and melilotus clover to loosen the subsoil are being used by W. S. Herring in his walnut orchard near Covina.

Chas. G. Johnson, State Supt. of Weights and Measures, has just announced that containers or packages of olives in brine should be marked with a statement of the net weight of the olives, exclusive of the weight of the brine.

MISCELLANEOUS.

On March 4, State Market Director Weinstock addressed a meeting of Sebastopol fruit growers.

Chas. Teague of Fresno county has recently been granted a patent on a confection consisting of a fig and ginger preserve.

Correspondence courses covering the subjects of dates and corn have just been announced by the University of California.

It is reported that the Gartenlaub estate of Fresno has sold two fruit ranches, aggregating 800 acres, in Fresno county, to the Guggenheim interests for $200,000.

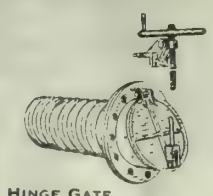
Los Angeles county will soon have fragrant and beautiful roads. Woven wire panels 16 feet long are placed along the paved roads five rods apart on alternate sides. Rose vines are planted along these and a few feet from each end. They will furnish jobs for men to prune, cultivate, and water them.

A shipment of celery was sent the State Market Director last Saturday by a Japanese truck gardener, for disposal in the open market. The sale was made immediately at $2 a crate, a commission of 10 cents a crate charged the shipper, and now the State Market Dirtctor's office has a bank account of 70 cents.

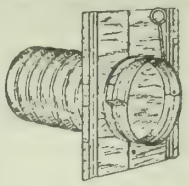
An agricultural bill has been passed by the House of Representatives appropriating $250,000 for fighting citrus canker; $2,500,000 for the foot and mouth disease; $250,000 for the investigation of cattle tick; and $200,000 for the marketing activities of the Dept. of Agri.

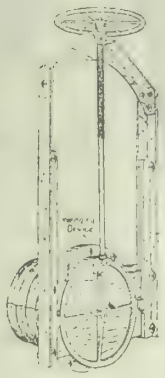
On the Phelan ranch west of Chico 84,000,000 bees are contained in 1400 colonies, under the care of J. T. Dunn, well-known bee man of Butte county. These bees are the property of the Garden City Apiaries, who hope to make this one of the greatest industries in northern California, and Chico the greatest bee and honey center on the Pacific Coast.

The Chambers of Commerce of all the cities throughout southern California have been requested by the San Francisco Chamber of Commerce to co-operate with the northern part of the State in making a strong protest to the Secretary of State at Washingon to intercede for the growers of California against the embargo act which England proposes on dried and canned goods.


HINGE GATE


INVERTED SYPHON


4-C GATE


SLIDE GATE

What You Don't See, Ask For

We display here only a part of our complete line of irrigation accessories, every one of which is proving itself to be a saver of

Time, Money, Labor, Water,

"ARMCO" (American Ingot) IRON products in use in every county in California.

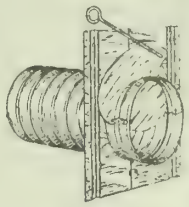
The ultimate choice of the Experienced Irrigator.

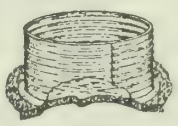
Write us for further particulars.

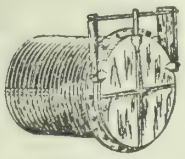
California Corrugated Culvert Co.

417 Leroy Street, Los Angeles.

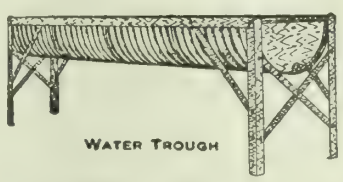
406 Parker St., W. Berkeley.


4-C GATE


SIMPLEX STOCK TROUGH


AUTOMATIC TIDE GATE

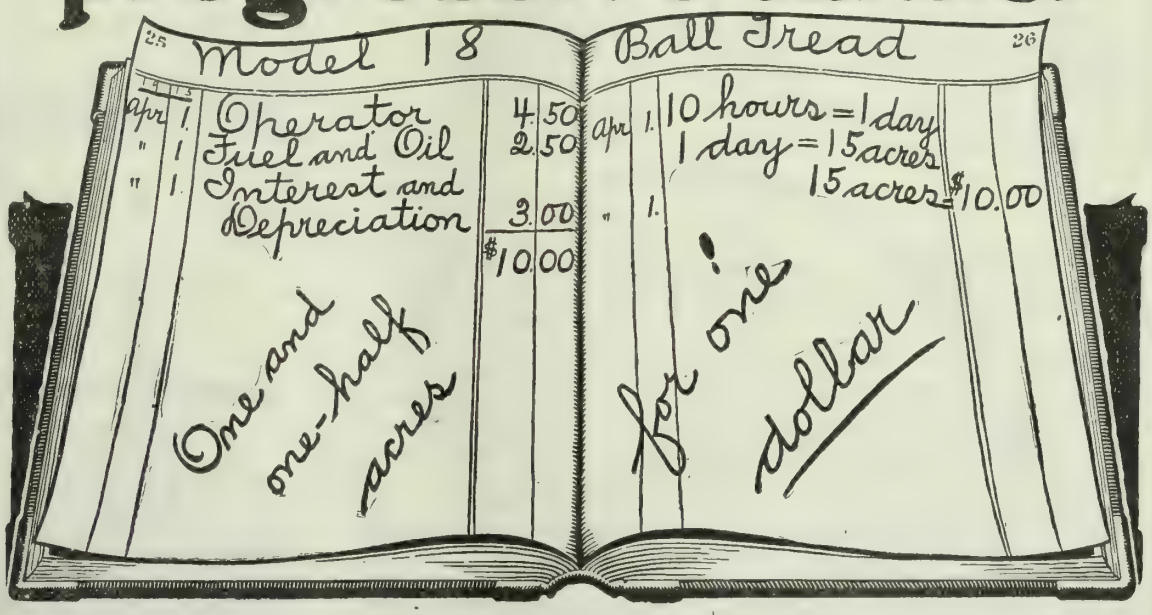

LENNON FLUME


WATER TROUGH

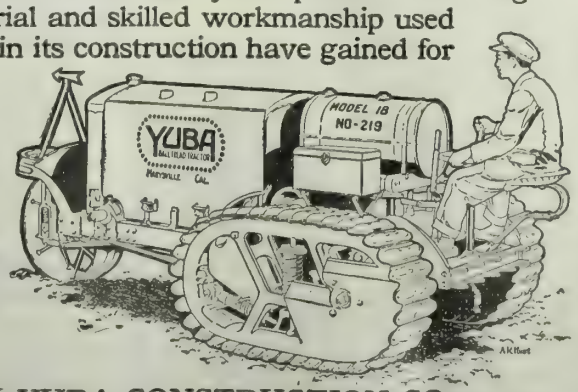

BERKELEY GATE


WITH SCREW LIFT

The ledger of a progressive farmer



The Yuba Ball Tread Tractor is reducing the cost of plowing and cultivating for progressive farmers. Its ability to plow deeper and better makes it possible for the Yuba to increase your profits. The high grade material and skilled workmanship used throughout in its construction have gained for the Yuba a reputation second to none for durability and low operative cost. Progressive farmers are saving money! Are you?



THE YUBA CONSTRUCTION CO.

Factory at Marysville, California 433 California St., SAN FRANCISCO, CALIFORNIA

THE YUBA BALL TREAD TRACTOR

THE YUBA CONSTRUCTION CO.
Department A-12.
433 California Street,
San Francisco, California

Gentlemen:
Kindly send me a copy of your booklet "The Yuba Ball Tread Tractor."

Name .....
P. O. Box .....
Town .....
State .....
Size of Farm.....acres.

CHECK MAIN CROP RAISED

Fruit ..... Rice .....
Grapes ..... Alfalfa .....
Grain ..... Hay .....
Hops ....

Mechanical Power on the Farm.

PUMPING FLOODED ROADS.

[Written for Pacific Rural Press.]

In Imperial Valley, the roads are divided by a levee along the center, and when one side gets dusty in summer it is flooded from the omnipresent irrigation ditches. The other side is used until it gets dusty and so on.

But where roads cross the ditches, they are elevated too high to flood, so at least one of the several mutual water districts keeps a man to sprinkle these approaches through the summer. He drives about in a little automobile with a 1 h.p. Tom Thumb International gas engine clamped on behind. This runs a 1½-inch centrifugal pump by means of which water is sprinkled on the roads from the ditches.

This outfit became of use after the recent "unusual" rains which left some of the roads pretty badly flooded. The auto was driven to a convenient place, a hole and trenches were dug to drain toward it, a short hose with strainer was put into the hole, and a longer hose discharged the water into adjoining fields.

KEEP THE TRACTOR CLEAN.

A dirty engine is the cause of more engine troubles than practically any other one thing. This is especially true with the ignition system. It also cuts out bearings.

When you examine the bearings on the engine, be sure to clean off the top of the engine thoroughly, so that the dirt does not get into the crank and mix with the oil.

There are more bearings cut out from carelessness, by letting the dirt in, than from lack of adjustment where clean oil is used; but it is essential that the bearings be kept tight and the oil clean.

When the magneto does not give a good spark, the trouble may sometimes be found to be dirty platinum points. Clean them with fine emery cloth.

Dirty, wet or improperly insulated wires may cause ignition trouble.

Remove the spark plugs once in a while and clean them thoroughly.

Don't expect to get a good spark with wet cables, or wet and dirty spark plugs.

PUMP MAKES CHEAPEST IRRIGATION.

[Written for Pacific Rural Press.]

"Our pump makes irrigation water a great deal cheaper than the projects around us. And we have water when we want it, though the mountain streams go dry in June. Some of the other systems cost half again as much for the same amount. Last summer we irrigated 178 acres of lemons and sold some water at 75 cents per hour. The pump is a Layne and Bowler, about 8 stages, lifting water about 220 feet to the top of a hill. It develops 30 to 40 inches of water, being about 175 feet down in a 200-foot well. We figure that it costs about 25 cents per hour, including repairs, and with distillate at 6 cents, to pump with a 35 h.p. gas engine. This does not include the work of attending it. Last fall we burned tops instead of distillate. It worked nearly as well and was cheaper. We have never lacked water since we put down our 200-foot well, though we used to pump out a shallower well about the same place. We have never shut down on account of the pump. It has given splendid service." So pleased is H. L. C. Whitcomb of Corona. His only trouble has been that the packing around the shaft has usually been pretty well worn out at the end of each run, but this is due, he thinks, to the large quantities of fine sand in the water.

THE GAS MOTOR.

Gas motors may be either two or four cycle. The latter is more favored, especially for automobile and tractor motors.

A cycle means a complete operation done more than once. With gas motors, the admission of a fuel charge, its compression, explosion and expulsion constitute one cycle. In the two cycle motor this is accomplished in two strokes of the piston, or one complete revolution of the crank-shaft. The four cycle motor completes one cycle in four strokes of the piston.

The simplest way to learn the operation of the various parts is to follow them as they act through a complete cycle.

First Stroke—Intake or admission of fuel vapor: The movement of the piston away from the cylinder head causes the intake-valve to suck in a charge of fuel from the carburetor. In the single cylinder this suction operates the intake-valve, but in other motors the valves, both intake and exhaust, are operated by cams and rods. During the intake stroke, the exhaust-valve remains closed.

Second Stroke—Compression: The piston having reached the limit of



"After driving more than 10,000 miles, I couldn't find enough carbon to fill the hollow of your hand."

That motorist was writing about Zerolene. Practically all who use it have the same experience. That's because

ZEROLENE
the Standard Oil for Motor Cars

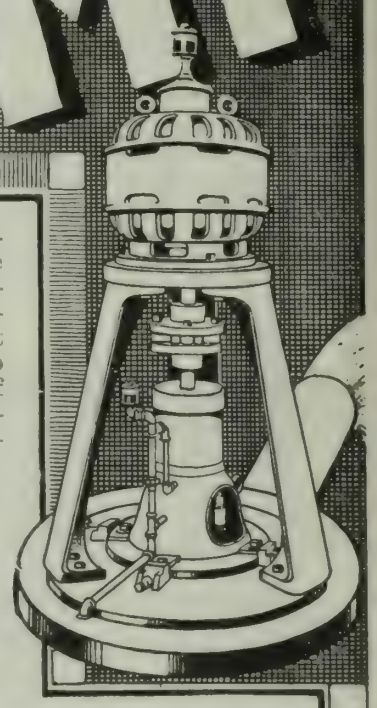
is made from selected California crude—asphalt-base.

Zerolene that gets into the explosion chamber doesn't "split up" into gummy, carbon-forming deposits, but after completing its efficient work, is consumed and passes out on exhaust.

Next time you empty the crank case, refill with Zerolene.

Standard Oil Company
(California)

Layne & Bowler PUMP



The development of water is no longer a gamble when competent water engineers assist you. When a reliable water system is installed it means a tremendous saving to you. Thousands of acres of growing crops have been utterly destroyed because of an inadequate water supply.

INSTALL THE
Layne & Bowler Pump

—and you have the most profitable investment possible—not a continual expense. Let the World's largest water developers solve your pumping problems. Pump for every requirement.

Catalog No. 25 on request.

Layne & Bowler Corporation

900 Santa Fe Avenue, Los Angeles.

FEARY-MILLER CO.

The KROGH Vertical Pumps



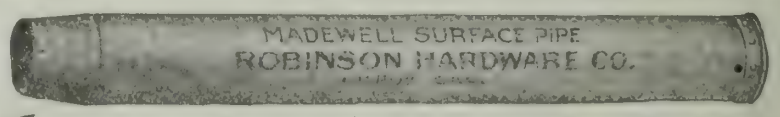
New Type Vertical.

Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film; absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts means less friction and greater efficiency.

Get our Bulletin No. 78 before deciding on a pump.

KROGH MNFG. CO.
SAN FRANCISCO. LOS ANGELES.



Lock Seamed and Soldered

There is a tremendous difference in surface pipe. This is appreciated most by the man who has wasted time and money on inferior makes. If you want absolutely the strongest and best surface pipe you can buy, select

Madewell Surface Pipe

It has many distinctive important advantages you can't afford to overlook.

The Madewell Long Lock Seam is made doubly sure and strong by soldering the entire length. A better seam can't be made. The Madewell Lock Seam Sleeve—used in Madewell pipe only—is decidedly stronger and smoother than the old fashioned lap and riveted seam used in other pipe. This feature alone puts Madewell Pipe in a class by itself.

Send for Free Booklet—which tells just how Madewell Pipe is constructed

Robinson Hardware Co. Box B Gilroy, Cal.

its stroke, it returns toward the cylinder-head, compressing the fuel charge. Both valves are snugly closed. As compression produces heat, the fuel would ignite spontaneously if too great compression were obtained. Still a good compression is essential for full power development. To this end a nicely fitting piston and piston rings are of the utmost importance. Usually the charge is compressed to one-fourth its natural volume.

Third Stroke—Explosion or burning: Just at the commencement of this stroke, in which the piston moves from the cylinder-head, the timing device discharges an electric spark into the cylinder filled with compressed vapor. The spark ignites the fuel, which burns with tremendous rapidity, producing gases many times the volume of the original charge. These gases force the piston away from the cylinder-head and develop the energy or power of the motor. Both valves are closed.

Fourth Stroke—Expulsion: These gases are now expelled through the exhaust-valve and port by the return of the piston. The exhaust-valve is opened at exactly the right moment by the rocker-arm's pressure on the valve stem. The rocker-arm is moved by the push-rod, which is operated by a cam-gear driven from the crank-shaft. The intake-valve is held shut by the pressure of the gases and by a coil spring.

As actual motive power is only developed in one of the four strokes, it is necessary to have proper fly-wheels to absorb the excess power developed in the explosion stroke and distribute it over the other three.

In this single cylinder motor there are two fly-wheels, one of which acts as a friction clutch, which conveys the power developed by the motor to belt-pulley or drive-gears. Four cylinder motors usually have but one fly-wheel, which also acts as a clutch.

Essential Parts of Motors: There are ten parts of the motor which are of particular importance, viz: Fuel tank to give a constant supply of fuel at all times to the motor; a carburetor for mixing air and fuel to produce the most combustible vapor; a valve system to control the time and direction of gas movement; an ignition system for starting the combustion of the fuel charges; one or more cylinders for controlling the power developed by the burning of the fuel charge; a crank-shaft with a connecting rod for each cylinder to utilize the force imparted to the piston; one or two fly-wheels on the crank shaft to distribute the power evenly; a means by which the motor power can be used to operate other machinery or propel the tractor; an oiling system to lubricate all surfaces where friction (rubbing) occurs and a cooling system to keep the motor from getting hot.

PAY CASH FOR TRACTORS.

A tractor builder recently made the statement that the day is coming when the manufacturer cannot be both manufacturer and banker to the farmer who buys his products. This has always been one of the big drawbacks in the threshing machinery business, and there seems to be the same general tendency in that direction in the gas tractor business today.

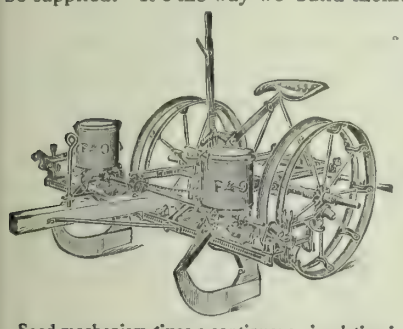
Farmers who contemplate purchasing tractors should arrange with their local financial institutions to borrow money enough to pay cash for their machines. The man who pays cash for a tractor should and will get a lower price on it. The manufacturer has to pay cash for the labor and materials which he puts into the tractor. Selling on time means that he must command plenty of capital, which adds to the cost. Therefore, he can sell it for less money if he does not have to extend credit. The manufacturer is not essentially a banker and doesn't want to be; it is not his business.

The cash idea is a good one, and many manufacturers are promoting it. It will benefit the builder of tractors and the men who buy them. The fact that he can purchase a tractor at a lower price if he pays cash, should appeal to any business-like farmer and thresherman as a better proposition. — Thresherman's Review.

P & O

No. 40 BEAN PLANTER

Can be furnished for drilling beans (or corn) or as a regular check row planter, with check heads, wire, side reel, etc. It can also be equipped as a Bunch Drop Drill. Furnished with runners or disc furrow openers. A Fertilizer Attachment can be supplied. It's the way we build them.



Seed mechanism gives a continuous circulation in the hopper by means of an agitator, filling each seed cell properly and in time. We furnish an ample supply of bean plates, and a set of edge drop corn plates. Sight feed. Hopper can be tilted without getting the gearing out of time. Adjustable tongue bracket gives tongue adjustment for horses of different heights. Cushion spring between front and rear frame insures furrow openers working at uniform depth and absorbs the shock and jar of rough or cloddy ground. Quick detachable runners.

The different plates give any desired drilling distances, and as a Check Row Planter it will plant in rows of standard widths. As a Bunch Drop Drill it will plant 2, 3 or 4 seeds every 18 inches apart.

A Flat Drop Attachment can be furnished for planting smaller grains, such as milo maize, broom or Egyptian corn, Kafir corn, etc.

Ask Your Dealer or Write to Nearest P & O House

Parlin & Orendorff Co.

Canton, Illinois.

General Agents for California: Baker & Hamilton, San Francisco; Dixon & Griswold, Los Angeles.

P&O

Light Draft Planters Are Backed By An Unqualified Guarantee

Pull 100 Stumps A Day—With The Hercules



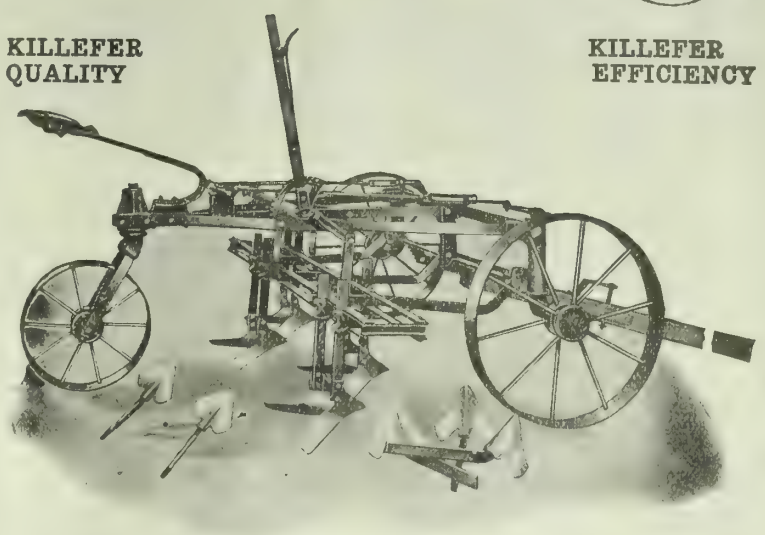
NO STUMPS too big. Get the richest, most productive land into crops. Make more money. *Hercules* on 30 days' free trial. Three-year guaranty. Safe and fast. Send post card for free book. Introductory price offer now.

HERCULES MFG. CO.
912 24th Street
CENTERVILLE, IOWA

Beet Cultivator (K)

KILLEFER QUALITY

KILLEFER EFFICIENCY



The frame of this Cultivator is made of one continuous piece of high carbon steel with a truss connecting it to the main castings, supporting the two steering wheels. This construction makes a cultivator that is almost impossible to break down in the center and in consequence the wheels are always in line and under easy control.

The lower frame or tooth bar is from the same quality of steel with a strong arm at each end, which connects with the lifting rod, allowing no chance for the frame to dip or run deeper at the ends. The seat is set back far enough to give an unobstructed view of the rows. The foot control of the front wheels is adjustable with a turn-buckle for taking up wear, and is very easy on the operator. A lock is provided for the rear wheel that holds it rigidly in line except on the turns. This is the **strongest** and **best made** Beet Cultivator for sale on the Pacific Coast.

The Killefer Manufacturing Co.

2209-21 Santa Fe Ave. Los Angeles, Cal.

Pulverize as you plow

Use a Right Lap Disk Plow for the perfect seedbed.

Don't turn over the ground in lumps and chunks, but break up and pulverize the furrow ready for the seed when preparing

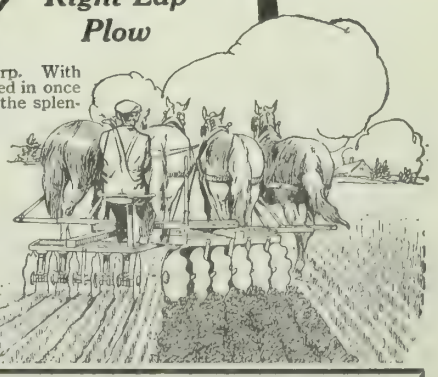
Stubble and Fallow Land

You cannot sow after the mouldboard plow, which leaves the land in chunks and a shiny hard furrow-bottom which the tiny plants are unable to penetrate. Use

Cutaway (CLARK) Right Lap Plow

the disk plow with the blades *forged* sharp. With seeder attachment, you plow, disk and seed in once over the ground. You'll be pleased with the splendid seedbed of finely worked soil. The seedling plants will like it too and pay you in the harvest. You can plow more acres at less cost. This tool in seven sizes. Also a hundred others. Ask your dealer about them and write for our free book, "The Soil and Its Tillage."

The Cutaway Harrow Co.
Maker of the original CLARK disk harrows and plows
7617 Main Street
Higganum, Conn.



P For Every Purpose NEW Threads & Couplings. Hot Asphaltum Dipped

I Second Hand and NEW

P Screw Casings Fittings and Valves Guaranteed for Pressure

E

Pacific Pipe Co.

Main and Howard Streets. San Francisco, Calif.

Special Live Stock Market Report.

An improvement in quotations on dressed meats together with a scarcity of lightweight cattle has caused a very strong demand for such cattle, buyers paying 6¾ cents in the country for choice lots. The Eastern markets shows a considerable improvement on medium grade cattle. The sheep situation is a waiting one, all of the feed lots being cleaned at this writing and but few supplies now coming from off the grass. A good many lambs have been contracted for Eastern shipment which will have a tendency to hold this market up. Mutton is scarce and while the grass run will soon start there are not many in the state and it seems probable that the mutton market will be strong all summer.

The hog market continues to soar in prices, receipts being light and the local demand heavy. Lightweights persist in finding their way to an unwelcome market, and are penalized as a result by packers, though in good demand by the butchers. Provisions are in good demand, and this is making packing concerns bolder in their buying.

WOOL.

The wool market does not look so favorable as it has for the past several weeks. The London sales for the last week show a 10 per cent decline in prices which has more or less dampened the ardor of markets in this country. Contracting in the country has apparently been suspended since our last report and buying is decidedly inactive, according to local wool people.

Buyers and Dealers Make Hog Squeal.

To the Editor: This from the standpoint of a small dairyman and swine breeder on a 50-acre alfalfa ranch. Hogs are quoted in San Francisco at eight cents. Does the farmer get that price here, less the freight to the city? Well hardly. The local butchers and buyers offer six cents delivered at railroad points and you may take it or leave it. A farmer having a dozen or so ready cannot ship to the city. Only in carlots is shipment feasible.

On the other side of the ledger the price of feed necessary for us to buy to supplement alfalfa is what? A reasonable profit to the dealer over what he pays the grain grower? Oh, no,—but the quoted price in San Francisco plus the freight from there, regardless of the fact that the dealers buy here, right in this immediate vicinity.

Now, you will say that the dairyman should buy his year's supply at thrashing time, but how many of us have the capital to do so, as that is only one item of the many supplies that must be laid in?

Should we desire a loan for this and other necessary purposes the local banks charge us 10 per cent for call or short time loans and eight per cent for loans secured by real estate; and the limit of these so-called long-time loans is one year. Barley is now $1.65 at the nearby railroad towns. What's the matter? —A Subscriber, Stevinson.

[Of course you know what is the matter—too much middleman, but that probably isn't what you wish advice about so much as to how to get around him without being stung.

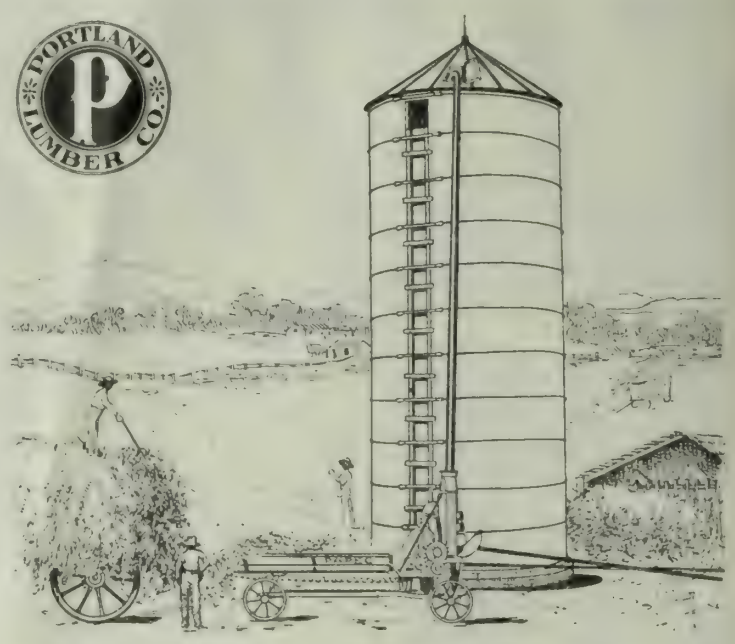
In the first place, a two cents differential is an exorbitant commission charge for selling hogs, assuming that your hogs are the eight-cent kind. The freight rate on carload shipments from Newman, your nearest shipping station, to Stock Yards, San Francisco, is $29.50 for a 36-foot car. Such a car would hold 95 to 100 head of hogs, ranging in weights from 150 to 250 pounds, or say 19,000 pounds, live weight. The shrink in shipping live hogs would amount to eight to twelve pounds per head. Taking the latter named figure, the shrink on 19,000 pounds of hogs would be 1140 pounds, which if sold at eight cents would mean $91.20. This with the $29.50 freight charges would make a total of $120.70, or an average charge per pound of a trifle over one-half cent a pound, besides the loss of perhaps three days' time for one man to accompany the shipment.

As you say, it isn't practicable to ship small lots in this manner, so the best, and perhaps the only, thing for you to do is to show these figures to your neighbors and arrange to market your several small lots at one time via the carload route.

As to the grain dealers, your hogs as well as your alfalfa land will show a bigger margin of profit if you will entirely eliminate him as well as the highway money lender by raising your own feed. It is pretty well demonstrated in your county that the way to always have good alfalfa is to plow it up before it gets poor and that system goes fine with hogs. If you will plow up about 10 acres of old alfalfa each year and seed it to a summer crop, such as barley, Indian corn if it does well with you, or some of the sorghums, you will not only grow your own hog feed but will keep your alfalfa yield up to the maximum. Of course this also calls for the reseeding of ten acres again the next winter to alfalfa. Otherwise you would soon run out of alfalfa to plow up.

You seem to have pointed out "what's the matter" with our banking system. What we are trying to find out is when and how it is going to be changed.—Editors.]

Alfalfa in one silo and corn in another, or both mixed in one silo, is the common way of providing balanced succulence for dairy cattle in Wisconsin, according to Otto Baldenweg, who is now caring for a dairy in the Chino district.



A Simplex Silo Being Filled by Means of a Papec Pneumatic Ensilage Cutter.

Greater Profits Earned Through Better Feeding of Dairy Cows

Every good dairy farmer knows that the better he feeds his milch cows the more money they will make for him. Silage is the richest, most nutritive succulent food known to the dairying industry today—and also the cheapest. But there is good and bad silage, its quality being in exact proportion to the quality of the silo in which it is stored.

The Simplex Silo

yields the most nutritious silage simply because it is the best silo. You will recognize the Simplex as the best as soon as you learn of its exclusive features.

Simple—Airtight—Permanent—Economical.

The top is held in a perfect circle automatically—the doors are in sections easy to remove and operate—made of Oregon pine staves, absolutely the best silo material on earth.

The Papec Pneumatic Ensilage Cutter

The Papec Pneumatic Ensilage Cutter cuts the green fodder and fills the silo all at once. It throws and blows the fodder into the silo, using only one-half the power required by other cutters—and saving half the cost of operation.

Write for our FREE illustrated book, "Prosperity on Your Dairy Farm." It shows how the Simplex Silo will make money for you. And ask also for a complete detailed Papec Cutter Catalog.

Portland Lumber Co.
16 California Street.
San Francisco, Cal.

ENGINE PRICES REDUCED

March First

TREMENDOUS ADVANCES IN RAW MATERIALS
HAVE FORCED OTHERS TO RAISE PRICES

We are Reducing Prices

And by Doubling Sales will give you a High Quality Engine for Less Money and Get us Your Orders.

1½ H. P. $44.00—2 H. P. $60.25—3 H. P. $84.50—4 H. P. $107.75.
Larger Sizes Priced on Same Basis.

All Engines have Starting Magneto, Pulley and Tools.

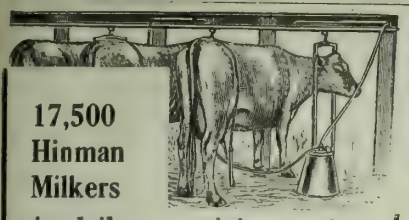
Calif. Hydraulic Eng. & Supply Company
68 FREMONT ST., SAN FRANCISCO

River Bank Protection

HAVE you property fronting on any stream? Are you losing valuable ground? Are your levees in danger from wash of river currents? Let us correct all these conditions with our Deflectors, Bank Protectors and Channel Changers by scientific methods and at a less cost than any known bank protection.

WHAT OUR DEFLECTORS WILL DO: Immediately stop bank cutting and loss of ground. Turn current away from bank. Form new channel in center of river. Protect bridge abutments and approaches. Cut out objectional sand bars. Build up your land by depositing silt along bank line. Will not interfere with navigation. Let us send an engineer to inspect and report on the cutting conditions of your land.

River Current Control Company
First National Bank Building, San Francisco.



17,500 Hinman Milkers

in daily use, giving perfect satisfaction to their owners and to the cows as well.

J. W. HOLLAND, of Kerman, writes: "Just two years ago I bought my Hinman Milking Machine and have used it **every morning and evening since,** with **perfect satisfaction.** Any one wanting a milking machine should by all means get the Hinman."

GEO. M. WHITMORE, Corning, Cal., writes: "After using the Hinman 3 years, have found it a perfect success in every way. It not only saves a great deal of time and the hard work of milking, but our cows hold the milk longer, and since they have become accustomed to the machines they seemingly do not like to be milked by hand."

POINTS IN FAVOR OF THE HINMAN.

(1) No vacuum tanks.
(2) No vacuum in pail.
(3) Only 2 moving parts.
(4) No complicated pulsating device.
(5) So simple a 10-year-old boy can safely operate.
(6) Low original expense.
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Free Booklet, "Making More Money with the Hinman Milker."

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One squirrel or gopher can do more damage for his size than anything on four legs. But Kilmol gets 'em every time—no uncertainty—a *sure* way at last.

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SQUIRLGOPHENE

Will Kill 'Em All

Simply saturate a waste ball with Kilmol, put *one* ball in tunnel, ignite in from 3 to 5 minutes. The deadly gas does the rest—does it *quickly*—one treatment is enough. Results absolutely guaranteed or money refunded. Government, State and County officials use Kilmol. **Ask your local dealer** Write for information on squirrel and gopher eradication.

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Niles, Calif.

Designers and builders of machinery of all kinds. Estimates furnished on special work. Straight time work or contracting.
Engine, pump and tractor rebuilding.

One of the best equipped shops on the coast.

Throttle-Governed CUSHMAN
GAS ENGINES.
Steady Running, for Spraying, Woodsawing, etc. Write
THOMAS R. BROWNE,
Stockton, Calif.

GRAND CHAMPION BREEDS SOON.

The Poland China grand champion Superba at Panama-Pacific, owned by W. H. Rough of Arlington, began breeding Nov. 23 and has bred 17 sows since that date. He is 3 years old this month and carries his 850 pounds beautifully on a back and sides without creases or sags, and on toes which stand up fine. His shields scarcely show at all. This boar has won 30 first prizes and 4 grand championships, including $625 in cash, and has traveled over 5,000 miles. He cost Mr. Rough $800 in March, 1915—$1,500 has been refused for him and $2,500 wouldn't buy him, says Mr. Rough, who is negotiating for three more of "the corn belt's grand champion sows" to breed him to.

One sow 22 months old had never been in heat, but was shut in a crate and force-bred to Superba late in January. She came around two weeks later and was bred again, this time successfully according to indications.

Superba was fitted for the Panama-Pacific after being received by Mr. Rough in July. High carbohydrate feeds were and had been used for two successive winning show seasons; but as soon as he was taken home from San Francisco, the carbohydrates were almost all taken away, gradually substituting bran, ground oats, alfalfa, and other protein feeds. He was kept hungry most of the time, but care was exercised not to reduce him so fast as to produce wrinkles.

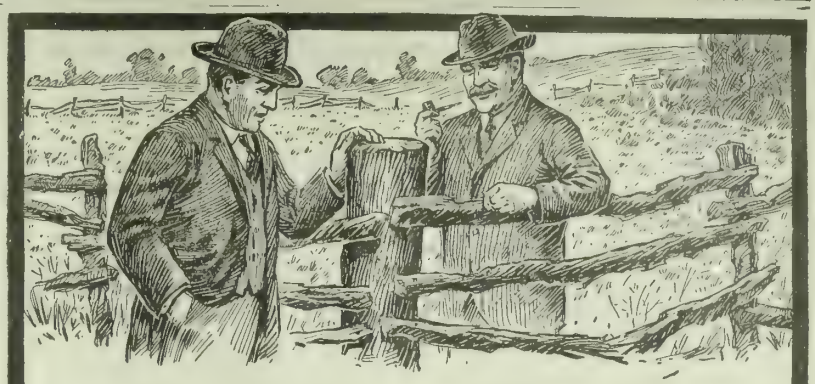
Breeds Only Best Sows.—"I was warned that a former world's champion boar lost his prestige and reputation by being bred freely to common sows. The inferior offspring, advertised as sons and daughters of the grand champion, soon ruined his reputation. It was suggested that I should make the service fee so large that only the best sows would be offered."

RABBITS WITH EAR GUM DISEASE.

To the Editor: What causes rabbits to have sore ears; why does it spread so rapidly; and what is the remedy? This trouble starts close to the head.—G. W., Ripon.

[Answered by Geo. H. Croley.]

[The ailment mentioned is most likely the ear-gum disease which is not yet prevalent in California, but is very troublesome in Europe. It is seldom fatal, but it is hateful because the pain and itching worry the animals. This worry naturally interferes with breeding or growth and the scabby sores that cling to the interior of the ears are displeasing. Many theories as to its cause and origin have been advanced, but none has been accepted by rabbit breeders as satisfactory It is generally believed that it is a parasite of some sort that is carried to the hutch in the hay, fodder or grain—perhaps in some one of the mildews. The following treatment is recommended by Meredith Fradd, of England, formerly vice-president of the United Kingdom Rabbit Club: "Drop a little sweet oil of almonds into the ears twice a day, until the sores are softened, and then remove them with a soft rag or sponge. Handle carefully to avoid pain and irritation, but if the ears become inflamed, dress them with finely powdered boracic acid, by carefully dusting over the affected surface."]



"Grandfather Set That Post

when he bought the land forty years ago. It's swamp cedar, and has lasted four or five times as long as common fencing stuff."

That's just about the difference between "Armco" (American Ingot) Iron and the ordinary galvanized material. "Armco" Iron is *pure* and *even*, like the old-fashioned nails, bolts and chains of a hundred years ago. Carbon, Manganese, Copper, Sulphur and the other rust-producing impurities are reduced to the lowest possible point.

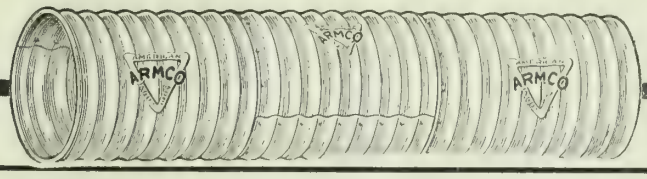
"ARMCO" IRON CORRUGATED CULVERTS

give lifetime service because their base metal is the most highly rust-resistant iron on the market and because every detail of construction is in keeping with the high standard of their material.

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ARMCO IRON CULVERT MFRS. ASSOCIATION
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SHORTHORN BULLS and HEIFERS

Will arrive from the East with a car of choice **Shorthorn Bulls** and **Heifers about March tenth. Solid Red**—Registered and Tuberculin tested.

These are splendid animals—lots of bone and individuality.

Also a few choice, registered Berkshires for sale.

H. L. MURPHY Perkins, Sacramento Co., Cal.

Shropshire Breeders, Attention!

A representative of Bishop Bros.' firm, whose noted San Ramon flock of Shropshires was awarded 15 first, 9 seconds and 6 championships at the P. P. I. E. Live Stock Show, will go East about April 1st, to fill orders for registered rams and and ewes of that breed.

Other Orders Solicited—Prices on Application.

Individuals or Carload Lots.

Personal Selection of All Stock Will Insure You Sheep of Correct Type and Good Breeding.

For further particulars apply at San Ramon Rancho, Contra Costa County, California, or at Office, 166 Geary Street, San Francisco.

Sons of MAY KING of FERN RIDGE

Panama-Pacific Guernsey Bull, Winner of Third Prize.

We are offering 1-year-old son of May King, out of Imp. Kathleen of Lewison, 23315. She by Governor of the Chene, the only bull on Guernsey Island, which American buyers never could take away. She produced as high as 50 pounds of milk testing, 4.5 per cent fat.

Another son, 6 months old, out of Cherry's Lady of Lewison 24207. She has given as much as 46 pounds milk, testing 4.6 per cent fat. This will make a great show Bull. Will register, and name to suit buyer.

C. W. MAIN, - - Corona, California

Digester Tankage

Send for sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

California's Big Purebred Establishment.

(Continued from page 314.)

Dairy Buildings.—The milk-barns are built in 50-cow units, with a silo and feed room built into each pair of units. The feed room holds a week's feed, which is previously mixed in another building.

The silo was built square outside to match the buildings, though circular inside. It was found to be the most economical way to build a concrete silo, though the corners are solid concrete. The labor of fixing forms was reduced, as was also the reinforcement required.

The first unit of the milking barn has been erected. It has a concrete floor with three feet slope in 110 feet, draining to the fields by an eight-inch tile. The corrugated iron roof, concrete walls, and James equipment complete the fireproofness and sanitariness of the outfit. The mangers are cement with partitions easily removable for flushing. As the herd increases toward the 500-cow goal, other unit barns will be set side by side at uniform distances. Each one includes a separate room for the milkers' change of clothes.

A concrete creamery at convenient distance receives milk through a hole in the wall, runs it over a great Simplex cooler, and will separate and churn whatever is not taken by the hotel at Pasadena which is negotiating for the entire output of the ranch dairy. An 800-pound ice machine will supply cold storage and ice for the present. Individual motors run everything. The buttermilk and skim milk discharge outside the building into a concrete basin whence it gravitates through a two-inch underground pipe to hog pens.

A separate building at a short distance from the milking barn, but handy to the fields, is to contain an alfalfa mill, feed grinder, feed mixer and storage space for grain, beet pulp, and other feed. Below this is to be a paddock and concrete barn for 50 calves to start with.

Economical Hay Feeding.—Each string of 25 cows is kept in a separate paddock 200 by 520 feet, connected by a lane to the milking barn. In the line between each pair of paddocks and next to the outside end, is a corrugated iron hay barn 70x110 feet. Included on each side of this is a shed open-sided toward the paddock. The sides of the hay barn are tight except for openings for the cows under the sheds to feed through. They will first have to eat holes in the hay, and then a man will have to keep the holes filled. This will avoid all hauling after the hay is put into the barns, and will save the cost of baling. "These barns will pay for themselves in a year," says Mr. Taylor, who designed them.

Bulls Kept Handy.—Alongside the lane leading from the cow paddocks to the milking barn, are the service pens which open into the lane and also into the bull paddocks. When the milker turns his cows into the lane, if any are in heat, they may be turned aside into the service pens without loss of time.

The bull barn and paddock fences are all concrete, the capacity being for three bulls now, allowing a 75-foot paddock for each.

All of the cattle buildings and corrals are located high on a sandy slope where very little mud will ever accumulate.

A veterinary hospital with up-to-date operating table, electric water heaters, and all desirable equipment, is in charge of a resident veterinarian, who is kept pretty busy with all the livestock.

A concrete dormitory for 17 dairy workers is to contain all conveniences, including shower baths.

Outdoor Hogs.—The hogs are to be kept pretty much outdoors after removal from the ornamental concrete farrowing pens. They are located along a wooded ridge at lower elevation than the cow and horse corrals.

There will be at present 16 paddocks 200x400 feet ranged along each side of a 30-foot lane for convenient feeding. Pigs receive ground corn, barley, and skim milk as soon as they will eat.

Berkshires are preferred, but Poland-Chinas are almost as much favored. Breeding stock is selected for round medium type, heavy bone, to make 200 pounds at six months.

Horse Departments. — The horses are kept near the cattle; stallion houses and paddocks being separate from the mares, but all located among beautiful trees. They are the direct charge of F. L. Dickson.

Stallion paddocks used to be separated by a single high woven-wire fence; but continual warfare made necessary an alley way between.

Mares are kept outdoors practically all the time, having a hay-feeding shed in each 2-acre paddock, open on three sides. A 25-acre pasture is also available close to the barns.

All horses are worked, to keep them in good health. Jusque works in double or single harness on the

HORSE OWNERS! USE



GOMBAULT'S
CAUSTIC BALSAM.
A safe, speedy and positive cure. The safest, Best BLISTER ever used. Removes all bunches from Horses. Impossible to produce scar or blemish. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

Stow Royalty
Second prize aged
Shire Stallion
at P. P. I. E.
and Iowa State Fair
Admitted the best individual Shire stallion in the West today.
I will accept a limited number of mares for service during the season 1916.
This is your opportunity to share with me the services of this great sire at a reasonable price. For further particulars WRITE
E. W. Westgate
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BREEDERS OF PUREBRED
Holstein Cattle
Polled Angus Cattle
Duroc Jersey Hogs
Tagus Switch, Tulare Co., Cal.



Cream Fed Pigs

Are you feeding cream to the pigs? You undoubtedly are.

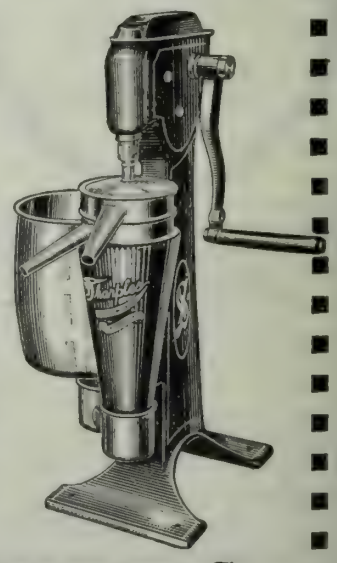
In the morning you feel fresh and strong; you turn your separator at full speed. At night, you're tired and don't turn quite so fast. You also stop a moment to refill the supply can; the speed slackens and some cream escapes into the skim milk.

Your separator may skim clean at full speed, but, no matter how good the machine, it will lose cream, and a lot of it, when the speed slackens. Many dairymen are losing a hundred dollars or more every year through imperfect skimming. They are feeding cream to the pigs. A marvelous but simple invention now enables you to stop this loss—stop it absolutely. The saving is clear "velvet"—more profit without added expense. You get *all* the cream with

THE NEW
SHARPLES
SUCTION-FEED

Separator. Whether you turn faster or slower than the regulation speed, the bowl of the Suction-Feed *drinks in just the right quantity of milk* to insure the closest possible skimming. Does away with speed indicator, which is not a protection against cream loss.

The New Sharples Suction-Feed has many other important advantages. Turn fast or slow, you secure smooth cream of an even thickness. No more streaked butter from mixing different grades of cream—no more dissatisfied customers.



The capacity increases when you turn faster than the normal speed, so you can get through quicker when in a hurry. The large, seamless supply can is only knee-high. The entire machine is made simpler and better than ever.

Send for our new book, "Velvet for Dairymen," which fully explains how you can save the cream now going to the pigs. Also ask for our liberal *free trial* offer. Do it today, before you forget. Address Department 31.

The Sharples Separator Co.
Also Sharples Milkers and Gasoline Engines
West Chester - - - Pennsylvania
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wagons and the mares haul hay, manure spreaders and other road work; but are not used much on plowed land, though Mr. Dickson says that would be all right until two weeks before foaling time.

It is better for them to foal in the pasture in good weather, than in a stall, especially if they are accustomed to the field. Any change in conditions at that time, such as putting them into a boxstall, makes them nervous.

Brood mares are fed bran and rolled oats before and after foaling, without change. If working hard, they get less bran because it would be too loosening to the bowels. Colts learn to eat without the mothers as soon as they want to, and are weaned at about six months; sooner if the mother is not in good condition.

The main mistake that farmers make," says Mr. Dickson, "is that they don't feed a foal enough of the right kind the first year and they can never make up the loss when this is done."

Business Management.—The work of the whole ranch is divided into departments such as thoroughbred horses, draft horses, dairy cattle, hogs, water supply, vegetables, "ranch" (which includes the fruit and feed crop growing), etc. Each department is in charge of a man who is directly responsible to Mr. Taylor. The bookkeeping system is complete so it will show the monthly profit or loss in each department, and where the leak occurs.

Recently Begun.—The improvement work was scarcely started on this ranch a year ago, and most of the cows have been bought since last September. Official tests were begun on Dec. 4 when Mr. Sturgis came; most of the permanent buildings have been erected within six months and more will follow. The best swine were bought since October, and some of the best draft horseflesh has been on the ranch less than two years. Great things are still doing, and the ranch next year will look very different from what it does now.

Parks and Lawns Everywhere.—The whole place is being parked with lawns, shrubbery, flowers, and trees. Deer are kept in a separate enclosure, and calla lilies ornament the creek banks. Hedges of evergreens and roses, and palms will line the driveways, and everything will be done to put visitors in a happy frame of mind.

FURTHER EXPERIENCE WITH PIEMELONS.

As a result of our request for information regarding the citron or pie-melon as a feed for hogs, E. C. Hoover of Turlock has the following to say:

"Regarding the feeding of citron or pie-melons to brood sows will say that I have fed my sows freely of them for the past four years and never experienced any bad results except once when one sow farrowed a litter of pigs dead. I think from my experience that the trouble came from not feeding any other food in the ration and feeding the citron too freely after they got rotten.

"I consider alfalfa hay an excellent feed in connection with citron. The litter of pigs I lost was born late in February and after a cold winter for this valley. This year I fed my purebred Duroc sows very freely of citron and pumpkins up to their farrowing time (feeding only sound citrons) and had excellent results. I heard considerable complaint the year I lost the litter, one man claiming he had lost five litters.

"In conclusion would say that I would advise caution in feeding the citrons, but think that if fed carefully they will materially reduce the feed bill. At Turlock we raise our hogs almost exclusively on the waste melons, cantaloupes, pumpkins, sweet potatoes and such like for about eight months of the year."

PEACH KERNELS FOR HOGS.

To the Editor: What is the food value of the kernel of the peach pit for hogs?—H M. H., Parker, California.

[Answered by Professor F. W. Woll, University Farm, Davis, California.]

[Kernels of peaches, apricots, prunes and other fruits contain a glucoside that yields appreciable quantities of hydrocyanic (prussic) acid on maceration of the crushed seeds in water; viz., over 2 per cent of the oil extracted or distilled from the kernels. It would, therefore, be dangerous to use them as a feed for hogs or other farm animals in any large quantities. The press-cake or kernels from which the oil has been extracted can, however, be safely fed to stock and will make a valuable feed. It is high in both protein substances and starchy components (N-free extract) and has doubtless a high digestibility.)

Imported and Homebred.

SHIRE STALLIONS and MARES



68 prizes won by our horses at the Panama-Pacific International Exposition, including the premium championship for breeder.

Visitors and Correspondence invited.

BLACK HAWK STOCK RANCH,
Burlingame, California.

Jersey Bulls

EMPRESS LASS, Grand Champion Jersey Cow at Alaska-Yukon Exposition, and several times at California State Fair, gave 82.32 pounds fat during December, 1915, under dairy conditions.

Her Grandsons and other Bulls from good-producing cows for sale.

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REGISTERED SWINE.

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.

Write or call and see us

SWINELAND FARM,
W. O. PEARSON, Prop.
Woodland, California.

GET STARTED RIGHT
Registered Duroc Jerseys.
$10 each PIGS $10 each
are money makers.
What's the use of raising "Scrub Hogs" when purebreds may be had at this price? They grow faster. Send today.
NEW ENGLAND CALIFORNIA CORPORATION.
RIPON, CALIF.

REGISTERED BERKSHIRES

Bred sows. Boars ready for service. Weanlings. All choicest breeding. Weanlings sired by "Masterpiece" boar.

C. H. THOMPSON, Novato, Cal.

YOU'LL BE SURE OF THE
Best Silage and the Longest Service
WITH



THE IDEAL GREEN FEED SILO

IT IS NOT A LOW PRICE that makes a silo worth buying. It is the quality of the silage you will get out of it and the number of years the silo will last.

YOUR SILAGE MUST BE WELL PRESERVED if your cattle are to thrive on it. You cannot make good silage with a cheap make-shift silo. Such a silo cannot be kept air and water tight, and unless it is, poor silage will result.

THE LEAST EXPENSIVE SILO TO BUY and the most profitable one to own is the Ideal Green Feed Silo. It produces the very best quality of silage and gives you the longest service.

EVERY DETAIL IN THE MAKING OF THIS SILO is fully explained in our large silo catalog. Ask for a copy and read it. You will then see how carefully the material is selected; the staves milled, spliced and fitted together and secured against the tremendous pressure of the silage; how the staves are treated on the inside with a preservative that protects them most effectively against the acid in the silage.

EVERY SUPERIOR FEATURE OF THE IDEAL is the result of long experience in the process of manufacture. There is nothing mysterious about the extra value you get in the Ideal. Everything is fully explained in the catalog and will be clear to you when you investigate. Write for the catalog today.

Alpha Engines Feed Cutters

DE LAVAL DAIRY SUPPLY CO.
San Francisco. Seattle.

EVERYTHING FOR THE DAIRY

GRANDSONS OF TILLY ALCARTRA

At Prices within Reach of Every Breeder and Dairyman.



A Grandson of Tilly Alcartra.

We have several splendid grandsons of this now famous cow which we can deliver to you at prices which will suit the pocketbooks of every dairyman wishing to improve the quality of his herd, whether it be a grade or pure-bred herd. These bulls are sired by our herd bull, Prince Alcartra Korndyke and out of A. R. O. cows, and are the only living grandsons of a cow having a record of over 30,000 pounds of milk in a year. Such an opportunity for increasing production has never been offered DAIRYMEN AND BREEDERS in California, price and quality considered. Buy one of these bulls and solve your low production problem. Write

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

HILLCREST STOCK FARM

Thornton S. Glide, Prop.
Davis, Cal.

SHORTHORN CATTLE

Shropshire and Merino Sheep

FOR SALE, SINGLE OR CARLOAD LOTS



KING LANCASTER,
Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.

THEY HAVE GRAND CHAMPIONS BEHIND THEM.

With the Live Stock Men.

DAIRYING.

During February, the Modesto creameries shipped $100,000 worth of creamery products.

The Ferndale Cow Testing Association will employ three testers this summer if enough cows can be secured.

The Handorf Dairy is milking about 160 cows which are being fed green barley, moist beet pulp, chopped alfalfa, and pasture.

Mr. Frank P. O'Connor has been appointed superintendent of the Arden Dairy, El Monte, to succeed Mr L. Mooney.

E. F. Kirtley of Holtville has a very fine Jersey which has a test of 7 per cent; he is aiming toward a registered herd.

The Yuba City Creamery, which has been closed for some years, will open shortly with a capacity of 2000 pounds of butter daily.

McAlister & Sons of Chino report the sale of the Holstein bull, King Korndyke Sadie Vale 23rd, to F. Stenzil of San Lorenzo.

W. J. Higdon of Tulare recently sold Guernsey bulls to: Harry E. Weaver of Tulare; Mrs. C. L. Powell, Los Angeles; and C. O. Butler of Hanford.

At the El Centro Fair Grounds on March 15, Geo. A. Smith of Corcoran will offer for sale 30 registered Holstein heifers, 30 registered Holstein bulls, 50 registered Poland-China sows, and 25 registered Poland-China boars.

Big Holsteins have never bloated on alfalfa pasture for Chas. H. Snell of Ontario, but small Holsteins and Jerseys do unless carefully watched. He has been pasturing 7 cows and 40 head of young stock all winter on 80 acres and less of alfalfa.

Morris & Sons Corporation and S. Lawson are establishing at Woodland one of the finest milk plants in northern California. It will be strictly up-to-date in every particular, containing pasteurizing, refrigerating, and ice cream and buttermaking machinery. The plan is to buy milk and sweet cream and ship to San Francisco, as well as to supply Woodland with milk, cream, butter, buttermilk, and cottage cheese.

F. A. Heraux has recently purchased 30 acres near Salida and is getting a fine start with purebred Holsteins and Duroc-Jersey hogs. His foundation for his Holsteins are 3 heifers and one bull purchased from the Hazelwood Farms of Spokane, Wash.; also two Holsteins from the Carnation herd at the P. P. I. E. He purchased from C. A. Hoover of Gervais, Ore., one bred Duroc Sow and from Elmer Lamb of Ceres, his choice sow, Queen of Stanislaus.

We are informed by the American Jersey Cattle Club that Merry Maiden of Innesfells 307454, owned by Dr. J. F. Thompson of Portland, Maine, has broken the world's butter fat record for one year. She averaged 8.13 per cent fat for 365 days. Merry Maiden started test at four years, four months of age, under the supervision of the Maine Agricultural College. The final results show that she produced 560.4 lbs. fat or 659 lbs. 85 per cent butter from 6,896.5 lbs. of milk.

HORSES AND SWINE.

The Berkshire breeders will hold a consignment sale at Davis on May 6th.

The French government recently purchased 200 draft horses in Shasta county, valued at $28,000.

Ruby & Bowers of Davis, horse breeders and importers, state that they have sold 72 head since the Exposition. A carload is also being shipped to Arizona this week.

A start in registered Poland-Chinas has been made by E. A. Parkford of Ontario, who recently paid $40 each for three bred sows as a foundation.

Lee Bros. are new ranchers in the vicinity of Holtville and are ones who believe that registered stock is the best kind for them. They have a fine herd of Duroc swine.

The State Swine Breeders' Association has under consideration the holding of an auction sale in connection with the Butte County Fair to be held in Chico May 21 to 28.

Hogs in the walnut orchard have proved profitable for W. R. Rowland in Los Angeles county, according to his ranch superintendent, L. A. Meredith. They do not hurt the trees.

John P. Daggs of Modesto writes that he now has 120 pigs, two weeks old, which he will have ready for the 1916 State Fair. He states that he has sold 44 head of his hogs during February; and will shortly send 10 head of weaned sow pigs to E. W. Smith of Milford Valley.

"The Berkshire Farm" is being established by C. B. Ford near Ontario. The present mixed stock is to be replaced gradually by the offspring of two registered Berkshire gilts and a son of Improver B bought last September from the Cloverdale ranch of Ontario. G. Robb has charge.

Irvin H. Reimers, Supt. of the Wylie M. Giffen ranch of Merced, states that he has just purchased the best ten sows of the John Decker & Sons' Duroc-Jersey herd at Turlock. The ranch contains 640 acres of land along the old Mariposa Creek and was formerly called the "Old Stockton Ranch." The hogs purchased are the start of their purebred Duroc herd which they intend to enlarge gradually.

On March 4, Tulare county swine breeders met at Visalia and organized the Tulare County Swine Breeders' Association, electing J. L. Nickerson of Visalia temporary president and Arlington Smith, Visalia, temporary secretary-treasurer. The meeting was addressed by Dr. B. J. Cady of the U. S. Dept. of Agri. and Dr. C. H. Roadhouse of the University.

CATTLE AND SHEEP.

F. Niboli will offer at auction at the Palm ranch, near Brawley, 80 head of cattle, 35 heifers, and 4 bulls.

J. G. Hankins of Elko, Nev., recently shipped another trainload of cattle to Oakdale, Stanislaus county, to pasture during the spring months.

Th highest price ever paid for wether lambs in the Sacramento Valley was received recently by Fred Mendosa who sold to a San Francisco firm, for $5.50.

P. Connolly and Jas. Gallagher, Jr., of Livermore have contracted their young lambs to the Golden West Meat Co. of Oakland for $5.35, to be delivered during April.

Mendocino cattle growers report more damage from the severe cold winter than any other section, one grower bringing 250 head down from the high points to keep them from starving.

The shearing of 15,000 head of sheep pastured on the desert near Maricopa, Kern county, has begun. Sheep on the West Side this season have done exceptionally well and the owners anticipate big profits.

The sale of the California Development Co. which supplied water for Imperial county was recently completed as part of an arrangement by which the ranchers could obtain control. W. H. Holabird, the receiver for six years, recently asked the court for $6,000 additional to the $1,000 per month he has been receiving for his services. His attorney on company business was awarded $10,000 in addition to over $11,000 attorney's fees already collected by him. The attorneys for the trust company for the bondholders were awarded $50,000 for their services. Who pays the bills?

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly all one year, 2½c per word.

HORSES AND MULES.

HORSEMEN, ATTENTION! — Coming three-year-old Brown Percheron Colt. Good size, well built, no blemishes. Fine brood or work mare. Sired by Monitor, imported horse. L. S. Rutan, Route B, Box 450, Modesto, Cal.

SEVEN LARGE-BONED grade Shire brood mares for sale. Weight 1450 to 1700 pounds. Five to nine years old. Guaranteed breeders. Must make room for colts. Frank B. Marks, Dos Palos, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

DAIRY CATTLE.

FOR SALE Twelve head of young purebred (not registered) Holstein cows. All had the first calf and are vey heavy producers, free of tuberculosis. Cheap, if taken in one bunch. Come and see them, or address for further information M. Hugener, Grover Ranch, Baron, Cal

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

DAIRY COWS FOR SALE—30 head Holstein and Durham grades springing with first and second calves. Also other dairy cows, all ages. Thoroughbred bulls used. Timbercrest Ranch, R. F. D., Redwood City.

WANTED About 25 good dairy cows to be paid for in 12 equal monthly installments; payment secured by mortgage on stock. Party reliable. Box 205, Pacific Rural Press.

VANDERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly records. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

HOLSTEIN BULLS—Purebred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

FRANK MEACHAM, Petaluma, California.—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631 637 Brannan St., San Francisco.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal. High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TWO REGISTERED HOLSTEIN BULLS out of A. R. O. cows. Sired by King Mead. Ready for service. J. H. Harlan Co., Woodland, Cal.

TWO REGISTERED HOLSTEIN BULLS old enough for service. Very light in color. J. W. Renoit, Route C, Modesto, Cal.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

REGISTERED HOLSTEIN BULLS — Serviceable age. From finest strains. Panama-Pacific Dairy. Butter Creek, Cal.

FOR SALE—Nice Guernseys, including Glenwood Bull, $2,000. One made 425 pounds fat. I. J. Scott, Pomona, Cal.

TWO CARLOADS GRADE JERSEY COWS and Heifers of fine milk strain. Also 11 head of yearling Holstein Heifers, cheap. E. H. Webb, Escondido, Cal.

ELEVEN REGISTERED HOLSTEIN COWS—Priced to sell as a bunch at very low figure. K. W. Abbott, Milpitas, Cal.

HOLSTEIN-FREISIAN CATTLE and Berkshire Hogs. H. B. Goecken, Breeder, Goecken Heights, Livermore, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

PALENDALE HERD of Registered Holsteins. Young bulls for sale. J. A. Pelanda, Modesto, Cal.

REGISTERED JERSEY BULLS from register of merit cows. D. F. Conant, R. "B," Modesto.

BREEDERS OF A. R. O. Holstein Freisian cattle exclusively. Dirk Dairy Farm, Lemoore.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

SUNNYSIDE HERD Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls from tested cows for sale.

FOR SALE—16 good milk cows. H. G. Nickel, ½ south, 2¼ west of Dinuba, Cal.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

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LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

BREEDER of Registered Holstein Cattle. Ernest Otto McClure, R. 2, Modesto, Cal.

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REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED HOLSTEIN BULLS for sale. O. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd. D. A. H. Rowles, Modesto.

JERSEY BULL—8 months old. A bargain. O. J. Ames, Oakdale, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

SWINE.

BIG TYPE POLAND CHINAS—One to a carload. Any age, either sex. 600 on hand. They have plenty of size, extra good hams and shoulders, strong arched backs, great length, depth and thickness of body, with good looks as well. Many are sired by IOWA WONDER, a 1000-pounder in show condition. I believe his pigs are the best in California. Visitors say they are the best they have ever seen. He sires the kind that grow faster and larger, have more, better and stronger pigs, and are more practicable and profitable—the kind that are highly satisfactory. Extra special prices on account of being overstocked. I have hogs galore. Prices will surprise you. Satisfaction guaranteed. Write Geo. A. Smith, Corcoran, Cal.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—Everything registered and Cholera Immune. Have two young boars of service size and a few bred gilts to offer. These are extras in every way. Price very reasonable. Have recently received some bred sows from the East that are from Grand Champions and are bred to Grand Champions, from the best and most popular blood lines. Will have an attractive lot of pigs to offer from the coming spring farrows. These will be the equal of any raised in this country. Am booking orders now for same. Write for prices and catalogue. C. B. Cunningham, Mills, Sacramento County, Cal.

YOUNG POLAND CHINAS—Large type boar, "I. B. A. Wonder," won first in class and Reserve Champion P. P. I. E. 730 lbs. under two years in breeding condition. Sows bred and sired by "I. B. A. Wonder." Also weanling pigs, either sex. Trios unrelated. None bigger. None better. $15 and up. Will please you or money refunded. W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEYS—Prize-winning stock from Iowa, Nebraska and Wisconsin. 75 head—bred cows and gilts. Also weanlings in groups of from one to five and boar unrelated of Crimson Wonder, Golden Model, Advancer, Golden Hero, Orion, Chief and Colonel blood. Price $10 and up. Haden Smith, Route 1, Box 97A, Woodland, Cal.

BLUE RIBBON HERD OF DUROC JERSEY HOGS—With 125 head of choice gilts and boars sold in year of 1915. I am going to sell 150 head in 1916. They sell because they are choice, and people are given a Square Deal on good ones. I have no $10 and $15 kind. I don't have to auction them off. John P. Daggs for prices, Modesto, Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Championa. Stock of all ages for sale. Grapevine Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

REGISTERED DUROCS—Twelve large, smooth boars, about fifteen choice gilts, all farrowed last September and October. Sired by Wonderful Wonder 176555. $20.00 up. Write now. Felton & Hoyt, Hanford, Cal.

BERKSHIRES. I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

REGISTERED BERKSHIRE WEANLINGS, both sexes, unrelated, $10 each. Also older boars and open gilts, or bred to a fine son of Grand Leader 2nd. J. M. Homberger, Modesto, Cal.

DISPERSION SALE—Registered Poland Chinas. Grand big sows. Herd boars and pigs of all ages. Write quick for low prices and descriptions. Roy J. Turner, Trowbridge, Cal.

BLATCHFORD'S PIG MEAL weans easily and safely; no trouble; no milk. Write for free folder, "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

POLAND CHINAS—Large type. Prize-winners. Gilts, service boars, bred sows. Satisfaction guaranteed. A. J. Robinson, Route A, Modesto, Cal.

REGISTERED IMPROVED CHESTER WHITE BOARS for sale from prize-winning stock. S. R. Cheney, R. 2, Lindsay, Cal.

DUROCS OF QUALITY—Predominating bloods of Defender, Buddy Ky, Crimson Wonder. C. T. Thompson, Bishop, Cal.

The newly established Palo Alto Stock Farm is rapidy being put in shape for the 600 head of registered Holsteins and Guernseys which the 600-acre ranch is to support. Mr. Tichenor, the manager, has purchased the remaining members of the Lathrop Guernsey herd and has also purchased a small-sized herd of Holsteins from Miller & Lux. There are about 70 head of purebreds on the ranch at present, but this number is to be materially increased as soon as the dairy barn and milk house are completed, which will require another two or three weeks.

DR. FAVILL.

Bertram D. Scott, manager of the Dirk Dairy Farm, writes in memory of Dr. Henry B. Favill, of Chicago, who died of pneumonia on February 20th, at Springfield, Mass., as follows: "Dr. Favill, at the time of his death, was connected with many agricultural organizations, among them the National Dairy Council, of which he was president, the Holstein-Friesian Association, of which he was vice-president, and the National Dairy Show, of which he was a director.

"Progressive agriculture in general, and breeders and dairymen in particular, never had a more generous friend, a more able and energetic champion. Of powerful and charming personality, he was one in a million. We of California are equally in his debt, wherefore it is only fitting that we should join the balance of the country in paying tribute to his memory."

SWINE.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen A. Day, Box 1140, Sacramento.

RANCHO RUBIUS—Durocs all sold except one service boar and a few October pigs. Spring litters will be "best ever." Elmer Lamb, Ceres, Cal.

ROSELAWN STOCK FARM—Registered Poland Chinas and Shorthorn cattle. Young stock, both sexes, for sale T. B. Gibson Estate, Woodland, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Price and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

PLAINFIELD STOCK FARM—Registered Berkshires and Durocs. Young stock for sale, both sexes. H. M. Bullard, Woodland, Cal.

PIGS OUT OF SUPERBA—Panama-Pacific Grand Champion Poland China. Booking orders now. Chas. R. Hanna, Riverside, Cal.

REGISTERED POLAND-CHINAS—The big little half-ton kind that have quality. Prize winners. Hale I. Marsh, Modesto.

REGISTERED DUROC-JERSEYS—Service boars and fall pigs. Also wo mature sows—bred. S. S. Southworth, Napa.

REGISTERED DUROCS of guaranteed breeding. Bred gilts, service boars and fall pigs. H. E. Boudier & Son, Napa.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

THOROUGHBRED DUROC-JERSEY weanlings, both sexes, $10. Geo. N. Martin, Route 2, Box 126A, Turlock, Cal.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

REGISTERED HAMPSHIRES—Winners at P. P. I. E. Stock of all ages. W. T. Gatton, Box 231, Gardena, Cal.

REGISTERED POLAND CHINAS—Stock from champion herd at Exposition. Dimmick Bros., Lemoore, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED BERKSHIRES—Big-boned. Cholera immune. Riccomi Bros., Mountain View.

REGISTERED BERKSHIRES — Weanling pigs, $10 each. G. A. Casey, R. 7, San Jose.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES — Prize-winning stock. Sunnyside Stock Farm, Perkins, Cal.

REGISTERED BERKSHIRES—Young boars for sale. Alexander and Kellogg, Suisun, Cal.

ROSS' DUROCS—A tip-top lot of weaned pigs. Also 27 bred sows and gilts. R. J. Ross, Route A, Modesto.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

BIG TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

PURE-BRED BERKSHIRES—Stock of all ages. Brae Bourne Ranch, Route 3, Box 172, Santa Rosa, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderas Ranch, El Cajon, Cal. M. S. Allen, Manager.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRE PIGS—Write or call. Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED POLAND CHINAS—Large type C. M. Stetson, Route "A," Ceres, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

FAIR OAKS RANCH, WILLITS, CAL.—Registered Duroc and Berkshire Swine.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

CHAS. GOODMAN — Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED BERKSHIRES—All ages. Choicely bred. U. Hartman, Ripon, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED DUROCS—All ages Either sex. W. A. Pack, Hollister, Cal.

CURTIN DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Lakeport, Cal.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

BEEF CATTLE

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco, or H. J. Macomber, Paicines, Cal.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale Sired by Landseer 379318, grandson of imported Villager 295884.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON-NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

HEREFORD BULLS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHEEP.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers, Shropshires.

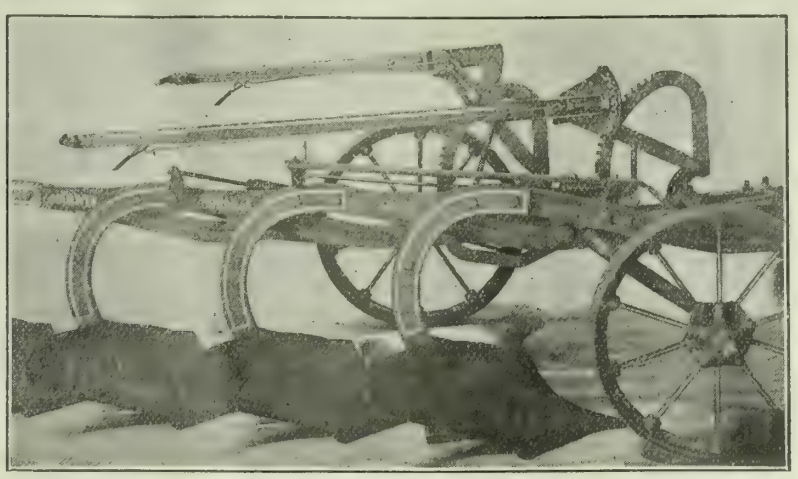
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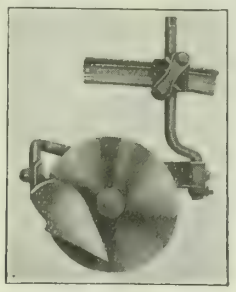
D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells live stock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

THESE TWO The BONANZA GANG and Combination Rolling Coulter and Jointer



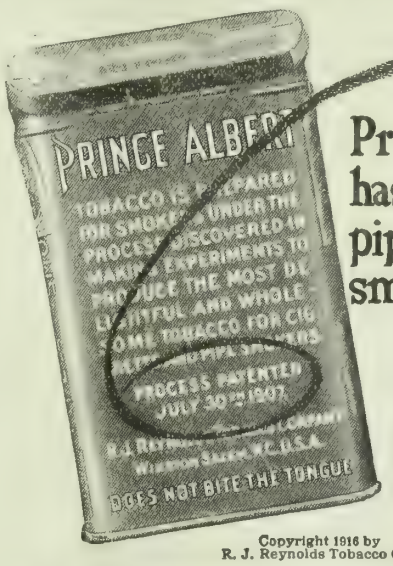
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Prince Albert tobacco has made three men smoke pipes where one smoked before!

Your supply of Prince Albert awaits your cheery nod at the nearest store that sells tobacco. Toppy red bags, 5c; tidy red tins, 10c; pound and half-pound tin humidors and that fine crystal-glass pound humidor with sponge-moistener top that keeps the tobacco in such excellent condition.

PUT fire to that friendly old jimmy pipe of yours or to a makin's cigarette that's all chock-full of Prince Albert—if you want to know *why* the national joy smoke has revolutionized pipe and cigarette rolling pleasure; *why* Prince Albert has trebled the number of pipe smokers in six years!

Test out P. A. to the last ditch! Puff your way into that enticing flavor, fragrance and long-burning coolness. Your confidence will never be abused. The patented process fixes that—and *cuts out* bite and parch!

PRINCE ALBERT

the national joy smoke

will *set free* any pipe-shy tongue! It will give *any* man *all* the pipe happiness and makin's happiness he ever yearned for!

Prince Albert has won its way on merit; won-over men of all tastes—it's so universal in its popularity; so good, so kindly, so satisfying. *It will win you quick as a flash!*

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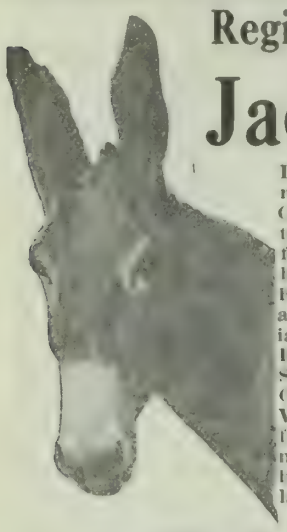
HAND POWER **K Stump Puller**

Drop a postal to W. J. FITZPATRICK Box 32 182 Fifth Street San Francisco, Calif.

Land clearing an easy, one-man job—big stumps pulled clean with this wonderful machine.

Works on *any* land. Operated by hand! No horses; no digging. Made of forged Krupp steel—guaranteed. Adopted and used by U.S. Government officials and many states. Send for free illustrated book on Land Clearing and special offer.





Registered Jacks

Range raised; Guaranteed satisfactory breeders. Field Jacks a specialty. Registered Shire Colts. Will trade for young mules, horses or land.

James W. McCord
Hanford, California

SALVADOR STOCK FARM



Shire Stallions

If you are in the market for a Shire Stallion, and wish to take advantage of the fact that I am closing out, you had better do so at once, for they are selling fast. All the young stock is sold, but I still have a few **first-class Stallions** for sale. These stallions are some of the best I ever imported, and include first-prize winners and champions.

Henry Wheatley
NAPA CALIF.



The Giant Of The Dairy

Grade up with a Jersey Bull! He is half the herd, and the breed determines half the profits. Breed him to your grade cows and bring the herd average near the Jersey average—489 pounds of butter fat per year. Your calves will be beauties. They'll mature quickly into gentle, hardy, vigorous and persistent milkers, long-lived and adapted to any climate. Let us tell you more about them. Send for our book, "The Story of The Jersey." It's free and it's a dandy.

Write for it *now*.

The American Jersey Cattle Club
West 23rd Street - New York City

Oak Grove BERKSHIRES

CHOLERA IMMUNE

Our herd is Cholera Immune, the only Immune Berkshire herd in the State.

Fine herd boars in use and they are second to none on the coast. Our sows are of equal merit.

We know that we can supply what you want.

Write Us or Call.

OAK GROVE DAIRY FARM
H. G. ARMSTRONG, Prop.
Woodland, Cal.

CALIFORNIA'S SILO HISTORY TO DATE.

(Continued from page 313.)

and I notice the cows prefer good corn silage to the vetch and barley or oats. Alfalfa alone as silage in my opinion is not a success; there is not enough sugar to preserve the feed in a palatable form and I threw out over 100 tons of alfalfa silage three years ago. For winter feeding, corn silage and alfalfa hay in my case produce a good flow of milk for months and I can count on a regular quantity, day after day, with no fresh cows and no ups and downs, due to a change in feed. The cows stay steady, even during the cold weather, and show very little decrease in November, December and January, over the months of early fall. I had one complaint two years ago when feeding a very poor, acid silage, of tainted milk, but I did not change the feed and heard nothing more of it. The best silage is made from corn thoroughly ripe and dry, cut fine, and packed tight with plenty of water added. I also add some salt. I seal the top of the silo I do not feed off of immediately, by blowing up two or three bales of straw, adding water and sowing to barley. This prevents all loss. I store enough feed in these two silos to last 50 cows about six months; by filling twice a year I am never out of silage. I have fed corn silage out of the pit in my resaw silo when nearly two years old and it was in perfect condition. There is no drain in this pit, and although the silage was very wet it was in good condition."

In the Interior Valleys. — After two years' experience with a silo on the Poppy Ridge Ranch in Sacramento county, where a high grade of city milk is the chief consideration at all times, Ralph Newman, owner and manager, finds these advantages with a silo; First, a first cutting of alfalfa saved what would otherwise have been a total loss. Second, ability to store a large amount of feed in a small space. Third, succulent feed during months when alfalfa is dormant.

On the other hand, he has found the vile odors of alfalfa silage prohibit its use on his dairy. He also finds difficulty in getting the cows to take to silage—even the best corn—quickly, stating that "the fussy ladies make a decided drop in their milk while making up their minds to like the feed."

Ralph Watson, manager of the Rancho Dos Rios in Stanislaus county, is more optimistic. He says, "Of course there is a certain amount of care that must be given in keeping any kind of a wooden silo in shape, but as for real disadvantages, I am sure we have been unable to find any. On the other hand we could write several pages on the advantages of the silo to us and feel sure our cows would be very glad indeed to add a few words for themselves. The condition of our cattle after a hard, wet winter with short rations of poor hay show what the silo has done for them, to say nothing of the returns from the cream. I firmly believe that every dairy should have a silo large enough to give 30 to 40 pounds silage per day per cow for at least eight months in the year. It will pay."

Going further down in the San

A Silo is a Permanent Investment---

not a tool to be replaced in a few years.

Its continuous and lasting efficiency is of paramount importance.

Fruit in a cracked jar will not keep; neither will silage in a leaky silo---for exactly the same reason.



THE REMCO SILO

IS EFFICIENT AND ENDURING ABOVE ALL OTHERS—MADE ENTIRELY FROM CLEAR, AIR-DRIED REDWOOD FREE FROM ANY DEFECTS.

IT IS MADE IN ALL SIZES FROM 10x20 TO 20x40.

ANY SILO SHIPPED WITHIN THREE DAYS OF ORDER.

Write us for booklets on silage and silos. They are free. A postal will bring them.

Redwood Manufacturers Company

1608 Hobart Bldg., San Francisco

Joaquin valley to Tulare county we have this advice from R. F. Guerin: "The silo," he says, "has all of the advantages and none of the disadvantages. As I see it, it is a most wonderful thing for a farmer, especially for a dairy farmer. Silage is a fine winter feed and when fed in connection with alfalfa hay in the winter the cows do well when green feed is an impossibility. My 14 by 32 foot silo furnishes two feeds a day to 25 cows for five months in the year. It has been built four years and my silage keeps perfectly. I plant the large Indian corn and cut it when it is just hard enough to eat. I do not let it get hard, and find that it makes very fine feed that way as all of the stalks and blades are green. I know most every one lets their corn get riper than I do, but I tried it both ways and find that with the green corn there are no dry sticks and blades in the silage and that it is all juicy and nice. The cows completely clean up the mangers when I feed it, whereas when I had the older corn they would pick out the soft juicy parts and leave the other. The silo is the only thing for the dairyman to my notion."

In the southern part of the State silo progress has been equally as marked as in other districts and the evidence is equally as favorable.

In Southern California. — C. W. Main of Riverside county has two silos on his dairy. His suggestions about alfalfa silage are both timely and convincing. He says that alfalfa should be wilted a little before siloing; otherwise it will become slimy, mushy and sloppy. Where it is badly infested with foxtail it can be siloed greener than when pure. If wet in shock he puts into silo pretty wet, but if wet on ground he allows it to dry a little more, but when put into silo too dry it does not pack well and does not ferment as it should. If cut in the morning with dew on, it should be raked in the afternoon in clear weather. Last year he cut one day and raked the next, but it got too dry. It was half foxtail, and dried foxtail never does make much feed.

Before starting to feed his alfalfa silage Mr. Main was feeding his cows all of the alfalfa hay they wanted plus pasture, but could notice no change in the milk flow when he started feeding 15 pounds of silage twice daily with the hay. The odor was not offensive and there was no more waste than with corn, which is used as a silage crop except when the alfalfa will not make good hay. Properly put up, he believes it compares favorably with corn as far as palatability is concerned, although, of course, it hasn't the same feeding value.

In face of the above facts, recited by practical feeders, as well as similar words of praise from others which space forbids the use of, we believe the first chapter of silo history in California has about been written, namely: The Introduction.

How long it will take to add the remaining chapters is problematic. If enthusiasm is any indication of progress, then we may expect succeeding chapters in much less than four-year intervals.

IS SILAGE A PICKLE?

To the Editor: I am interested somewhat in building a silo but haven't fully made up my mind regarding the benefits to be derived from silage. I have been told by dairymen who ought to know whereof they speak that silage is extremely hard on the cow's stomach; that the feeding of silage shortens the life of a cow to a considerable extent. Is this a fact? At one of the farm center meetings in our county, I asked our county farm adviser for information regarding the above and was advised that silage was no harder on the stomach of a cow than pickles might be on the writer's stomach. Were I to accept his answer as given I must infer that silage is very hard on the cow's stomach, as pickles are very hard on my stomach, and I believe that most authorities on diet agree that pickles are hard on the human stomach. However, I consider his answer no answer at all. I shall be greatly obliged for enlightenment.—E. F. S., Hughson.

[There is no comparison between silage and pickles, for pickles are nothing but preserved cucumbers, and it is generally conceded that cucumbers are hard to digest.

On the other hand, silage is made from field crops such as corn, alfalfa, sorghums, etc., having high digestible and nutritive values for livestock and the chemical processes that occur in the silo during fermentation make the material more digestible, and are supposed to be almost identical with the changes that take place in the stomach of the cow. The effect is to break down the fibrous substance and render it more soluble.

In view of this, as well as corroborating advice from silage users, which appears in other columns of this issue, it is fair to assume that your informants are mistaken as to the "burning out" effects of silage. Of course it is unwise to feed spoiled silage, just as it is unwise to feed spoiled feed of any kind to dairy cows, and we don't doubt but what a continuous ration of spoiled silage would shorten a cow's life, just the same as spoiled food would shorten your life.—Editors.]

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WITH a great many machines or implements used on the farm it doesn't make much difference which of several makes you buy. One may give you a little better or longer service than another, but it's mostly a matter of individual preference and often it makes little difference which one you choose.

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There is a big difference in cream separators.

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The most Profitable machine on the farm is a

DE LAVAL Cream Separator

A cream separator is used twice a day, 730 times a year, and if it wastes a little cream every time you use it it's a "cream thief," and an expensive machine even if you got it as a gift.

But if it skims clean to the one or two hundredths of one per cent, as thousands and thousands of tests with a Babcock Tester show the De Laval does, then it's a cream saver, and the most profitable machine or implement on the farm—a real "savings bank" for its fortunate owner.

But cleaner skimming isn't the only advantage the De Laval user enjoys.

There are many others, such as longer life, easier turning, easier washing, less cost for repairs, and the better quality of De Laval cream, which, together with its cleaner skimming, make the De Laval the best as well as the most economical cream separator.

If you need a De Laval right now there is no reason why you should let its first cost stand in the way, because it may be purchased on such liberal terms that it will actually pay for itself out of its own savings.

A De Laval catalog to be had for the asking tells more fully why the De Laval is a "savings bank" cream separator, or the local De Laval agent will be glad to explain the many points of De Laval superiority. If you don't know the nearest local agent, simply write the nearest De Laval main office as below.

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Poultry for Profit---Producing and Marketing.

THE FARMER'S POULTRY.

[By Mrs. Susan Swaysgood, Pomona.]

Farm poultry ought to be more profitable than it is, judging from what I hear and see. In Missouri and Kansas the bulk of the eggs that are sent to market are produced on the farms and only a short time ago the loss from unsanitary conditions, poor systems of marketing, etc., was enormous. But the farm bulletins and poultry departments in farm papers have educated the farmers till now Missouri stands first in poultry produce, both in quality and quantity.

While California can show more specialists, or egg farms, perhaps there is neither as much poultry—that is table poultry—nor eggs produced on the farms. This may be because we have a great deal of land given over the fruit growing, and as the fruit grower does not raise any grain he naturally concludes there is not any profit in poultry.

Poultry in Orchards.—This is a mistake, for there is a double profit in poultry to the orchardist. A good flock of hens that are fed just enough to make them rustle will produce eggs from many things that if not destroyed will be a pest, and nearly every one can grow a little green feed to help out so that the feed bills need not be large.

I never advocate the starvation plan of keeping poultry, but where hens have range it is folly to overfeed. Let them rustle for a part of their living; they will have better health and if eggs are to be hatched they will be more fertile and give stronger chicks.

During the spring months when there is moisture in the ground and plowing is being done the hens that range will get considerable animal food in the way of worms, bugs, etc., but after the warm, dry weather sets in it is good-bye to the bugs and the hens should then be fed a little animal food, either milk or commercial beef scrap. Milk pays better if fed to poultry than if fed to hogs.

Green Feed.—It is surprising what an amount of feed can be grown on a little land if water can be had for irrigation, and by making the proper choice the same things can be grown for both the kitchen and the poultry. The best heads of lettuce can go to the table and the poor ones to the hens; the heart of the cabbage goes to the table, the leaves to the hens, and so on with everything. Use the ear of corn for the table and put the leaves and the stalk through a feed chopper and mix with a little mash mixture and the hens will make a good meal of it.

There is enough waste from the average farm to feed a hundred hens that will average under fair treatment from 40 to 50 eggs a day. I am not going into very high figures, because people, that is some people, jump to conclusions too quickly. But given ordinary care and feed, any flock should average 40 to 50 per cent; and if a part of the eggs are used at home and the rest sold the flock will more than pay for the investment, even at that rate.

There is no reason why the California farmer and fruit grower cannot make as much money on poultry produce as the Kansas farmer. Land may be cheaper there, and they can grow grain cheaper, but they have not nearly so good a market; they do not get as good prices for their products and they have to feed their flocks through the long winter months when hens do not produce any, or at least very few, eggs, while here, nearly any farmer can fix things so that the hens will lay fairly through the winter months when eggs are a good price.



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Good Chicks should be Fed right by the Coulson Method
Full particulars in free book "Chickens from shell to Market"
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THE YELLOW EGG PERIL.

To the Editor: My cousin loaned me some of the money that was needed to establish my little poultry business. He has asked me if there is still some danger of the Chinese eggs ruining the poultry business of this State. The question gave me quite a shock and the more I think of it the more I am frightened. Can you tell me something of the situation at present?—J. S., Napa.

[Answered by Geo. H. Croley.]

The latest report issued by the U. S. Dept. of Commerce includes the figures up to Dec. 1, 1915, and covers all the imports and exports for the entire United States exclusive of Hawaii, Alaska, and insular possessions. This report records the following:

Imports of Eggs.

For 11 months of 1914: 4,976,091 doz., valued at $825,725.

For 11 months of 1915: 1,812,244 doz, valued at $260,484.

For the month of Nov., 1914: 309,206 doz., valued at $38,340.

For the month of Nov., 1915: 40,069 doz., valued at $8,899.

The above figures should certainly have a soothing effect on the nerves of our troubled inquirer for they indicate that the imports of eggs from all sources have dropped to a trifling sum as compared to the total production of this country.

While we are on the subject let us see what we have exported:

Exports of Poultry, Game, and Eggs.

For 11 months of 1914: Eggs, 17,641,660 doz., valued at $4,195,330.

For 11 months of 1915: Eggs, 16,450,040 doz., valued at $3,691,707.

For 11 months of 1914, poultry and game valued at $833,137.

For 11 months of 1915, poultry and game valued at $1,379,172.

A total for 1915 of $5,070,879 against that of 1914 of $5,028,467, a net gain of $42,412.

We might state that a considerable portion of these exported eggs were shipped to Australia, which has a protective tariff against us of 15 cents per dozen, and to New Zealand, which has a tariff of 5 cents per dozen.

We believe that public opinion is now so strongly set against the use of Chinese eggs that it will be many years before they again seriously menace the industry of this country. It seems to us that the future for the California poultry keeper was never as bright as at present.]

LIME AND SALT FOR EGG PRESERVING.

To the Editor: I have lost my volume containing the recipe for putting down eggs in lime, salt, and water Please repeat it; I want to put some down while eggs are so cheap.—Subscriber, Napa.

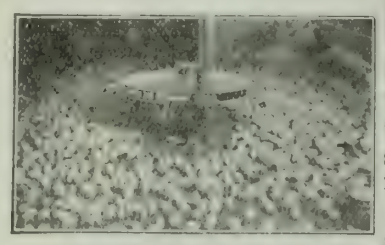
[Answered by Geo. H. Croley.]

[We suppose our correspondent refers to the method of preserving eggs which is described on page 153 of California Poultry Practice and which we reproduce as follows: Quick lime 16 ounces, table salt 8 ounces, and boiling water one gallon. Pour the boiling water over the lime, stirring well to keep from burning, add the salt, and stir until it quits boiling. Allow the mixture to settle, which may take a day or two, then draw off the clear solution and pour over the eggs packed in earthenware crocks. The eggs must be well covered and weighted down or the top layer will not be good.]

Animal food—meat scrap, bone, etc.—in some form is required, more or less, during the entire year.

Mites differ from hen lice in that they hide in the cracks and crevices (near the roosts especially) of the henhouse during the daytime, and swarm out on to the bodies of the fowls at night, to suck themselves full of blood.

Pride of Petaluma, Fresh Air Brooder STOVES



This is our latest and best. It's self VENTILATING. Automatic in every respect.

MOIST FRESH AIR DIFFUSED from the base to chicks. It's the standard of reliability and economy. Don't fail to get our catalogue, or call and see us.

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Hatching Eggs, $1.50 per setting	$5.00 per	100
Baby Chicks, February delivery	12.00 "	100
" " March "	10.50 "	100
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Our White Plymouth Rocks received 7 awards, and on Eggs 1st and 3rd.
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Poultry Breeders Directory

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LIVABLE BABY CHICKS—We are supplied by reliable Breeders and experienced hatchers. Better chicks cannot be had from any source. All varieties, any number. High quality birds, bargain prices, breeders, laying hens, pullets. **Free exhibit.** Everything in Poultry, Pigeons, Rabbits, Dogs, Cats, Canaries, Pets. Give us a call or write. **Fanciers' Exchange,** 642 S. Main St., Los Angeles, Cal.

ALL KINDS OF BREEDING and laying hens, roosters and pullets. Petaluma incubators, new and used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minorcas, Buff, White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards, 2350 San Pablo Ave., Oakland, Cal. **Closed Sundays.**

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Calif.

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DAY-OLD CHICKS These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

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BUFF WYANDOTTE EGGS -$1.50 and $2 per setting. C. B. Christiansen, Dinuba, Cal.

TURKEYS, DUCKS AND GEESE.

TOULOUSE GEEESE 2 years old, now laying. Either sex, $3.00. Eggs from my flock, including best show birds, 30c each. Order from this ad and we will ship the day you say. M. F. Giddings, 245 Tokay St., Lodi, Cal.

RED BOURBON TURKEYS—Eggs $5 per setting (thirteen eggs). My Turkeys won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914 Just as good this year. A. E. Balmer, Alhambra Valley, Martinez, Cal.

BUFF DUCKS—Weigh like a Pekin and lay like a Runner. Winners at Panama-Pacific and Los Angeles. "Victoria" has laid 126 large, white-shelled eggs in 132 consecutive days. Eggs. Baby Ducks. The Ferris Ranch, R. 2, 144D, Pomona, Cal.

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INDIAN RUNNER DRAKES, $2.50 each, and a few choice hens. Settings, $1.50. Sturgeon Bros., Lemoore, Cal.

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MAMMOTH BRONZE TURKEYS THE BEST IN THE WEST Extra special prices. Further information cheerfully given. Write now to secure best birds. Geo. A. Smith, Corcoran, Cal.

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LEADING RABBITRY IN AMERICA –Flemish Giants and New Zealands. Cut your living expenses. Catalogue free. Empire Rabbitry, Empire, Cal.

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SEND 10 CENTS for four packets seeds of the finest vegetables of their class, viz.: Detroit Dark Red Turnip beet, Early Snow Ball cauliflower, Copenhagen Market cabbage, Paris Golden Self-Blanching celery. Regular retail price for the whole is 40c, but to introduce, and for your name and address with 10c, I will send same with my catalogue by mail, postpaid. Charles Johnson, Seed Specialist, 1686 Shattuck Ave., Berkeley, Cal. Over 50 years in seed business; author "The Seed Grower," standard work on seed growing.

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SOUDAN GRASS SEED—Guaranteed absoutely free from Johnson grass seeds. 30c per pound for less than 10 pounds., 27½c per lb. for 10 to 49 pounds; 25c per pound for 50 pounds or more. I pay postage or freight. John Silbersack, San Martin, Cal.

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WALNUTS—Budded on California Black root; Franquette, Mayette, Concord, Eureka and other leading varieties. Extra fine stock. No better anywhere. Write for full particulars and prices. Woodbridge Walnut Nurseries, Motor Route B, Box 269, Modesto, Cal

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GIANT MARROW CABBAGE—Entirely edible; single Washington acre yielded EIGHTY TONS. Pomiverein's, Danymen's ideal. Richer, double-yields Kale. Fine table food. First American sales: GUARANTEED, HOMEGROWN, tested seed, planting ten square rod, 25c; five such packets, $1.00. Photos, history, directions. EFFICIENT "MAGGOTFLY" REMEDIES, for stamps. E. E. MARTIN, B3, BANGOR, WASHINGTON

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EUREKA WALNUTS ARE THE BEST.—Grafted on native black roots. Our prices will surprise you. Write today—tomorrow never comes. Geyer Bros., Walnut Nursery, 214 S. Alamansor St., Alhambra, Cal.

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SWEET POTATO PLANTS for April and May delivery. California Yams, $2.25 per thousand, 35c per hundred, prepaid. J. Braswell, R. D. No. 2, Lindsay, Cal.

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TEPARY BEANS FOR SALE—Eight cents per pound. Robert Paulsen, Lockwood, Cal.

FOR SALE Spineless Cactus Plants. Prices right. B. C. Engbert, Byron, Cal.

PALM TREES—$1.00, $1.50, $2.00 f. o. b. Sunnyvale. F. B. Kraseman.

WANTED.

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved For information address Western Normal, J. R. Humphrey, Principal, Stockton Cal., Box 704.

MANAGER—SUPERINTENDENT Stock, fruit, grain alfalfa. Organizer, expert accountant, labor handler, construction, heavy machinery, details. Successful California experience Open large permanent work. Box 211, Pacific Rural Press.

WANTED—Position as manager of large orchard, vineyard, dairy, alfalfa and grain farming by a man with many years of practical California experience. Reference. Room 55, Overland House, San Francisco.

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FOR SALE—IMPROVED ALFALFA RANCH—From 1 to 56 acres, three miles from Modesto, adjoining Stanislaus Station on Tuolumne Southern Electric railway. Produces 7 crops of alfalfa per season. Good location for dairymen or suburban homes. For further particulars address Owner, W. M. Way, Route 1, Box 320, Modesto, Cal.

PROFITABLE LITTLE FARMS, in Valley of Virginia, 5 and 10 acre tracts, $250 and up. Good fruit and farming country. Send for literature now. F. H. La Baume, Agrl. Agt., N. & W. Ry., 419 Arcade Bldg., Roanoke, Va.

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FINE ALFALFA RANCH for sale in Stanislaus county. Best ever. Write for terms. Box 78, Salida, Cal.

The Home Circle Page of the Pacific Rural Press

THE GARDEN YOU DON'T HAVE TO TAKE CARE OF.

Of course that caption must not be accepted altogether literally. There is precisely no garden that need not be taken care of. But a great many people like to have a garden who do not wish to be forever attending to it. They would welcome a combination of plants that makes a good appearance and that requires the minimum of attention. It is purposed to present here a number of helps toward such a garden.

To begin with the plot can be given an aspect of stability and improvement by the judicious placing of a few trees. One of each of the four or five favorite kinds of acacias may be planted if the yard is large enough. A dracena palm grown too large for its pot may be set out, too. The acacias flowering will give the yard a "gardeny" appearance.

Of shrubs and things of that nature, rhododendrons, bamboo, fuchsias, hydrangeas, oleander, agaves, laurustinus, lavender, breath of Heaven, Scotch broom, and Spanish broom will give you no trouble. Save the fuchsias, hydrangeas and the bamboo one need not worry about irrigation, since they will get along where the rainfall is about 20 inches. But everything that grows will thank you for some water.

Of vines, this is a flourishing selection: passion vine, clematis, honeysuckle, jasmine, Australian pea vine, wistaria and iron vine.

Roses are always worth while, though they need some looking after, and ample water. But here are things that seem to rustle for themselves generally: geraniums, marguerites (single and double), pelargoniums, Shasta daisies, lemon verbena. The geraniums and single marguerites may get along with rainfall.

These can hardly be prevented from growing, and under the most neglectful conditions: hollyhocks, shirley poppies, sweet alyssum, gail lardia, calliopsis, cosmos, marigolds, nasturtium, and German iris.

Very little care will suffice for petunias, stock, wallflower, coreopsis, snap dragons, foxglove, gladioli, mignonette, violets, sea pink and hens and chickens.

Sweet peas to flourish properly require plenty of attention, before and during growth, to obtain good ones. But it is surprising what tolerable results are obtained by the most primitive cultivation.

Calla lilies may be said to take absolute care of themselves, except that they are entitled to watering and weeding to live.

THIS WEEK'S BEST HOUSEHOLD HELP.

To save tainted meat—If a piece of fresh meat has a bad odor after being kept over night, it may be kept from spoiling by washing it off in a quart of water to which a half teaspoonful of powdered borax has been added. Then rinse in fresh water and wipe dry with a cloth. At this stage the taint is only on the surface and may be neutralized as directed. It is best to cook the meat immediately afterward, since it will keep better cooked.

MAKING UP FOR WHAT HE MISSED.

By Fred Schaefer.



Grandpa, back in other days,
had gobs of work to do;
From the hour that he quit
school his work seemed
never through;
Up before the hired man, to
bed when like to drop,
He kept a-pluggin' on at
work and never dared to
stop—
He never dared to stop at all
to keep up with the times,
Commerce, weddings, wars,
politics and crimes—
Until he got his chance with years; and now he sits and reads,
And reads and reads and reads and reads
And reads.

EXPERIENCE EXCHANGE.

J. T. S., Goleta.—Yes, burlap is used for a wall covering quite often instead of wall paper where a dignified decorative effect is sought. Different shades of tan, brown, green and gray are obtainable.

This from R. D., Dinuba, ought to interest all who have a place in their heart—and stomach—for the raisin: For a tasty raisin sandwich chop a cupful of seeded raisins to a smooth paste and then spread on bread that has been buttered thinly.

For the benefit of Elise G. of Salem, Ore., who asks if we have ever heard of the game, "Whose Nose?" will say that we find that it is not a card game. "Nosey" is a card game in which the penalty for the loser is a rap on the nose with the cards held in his opponent's hand. "Whose Nose" is a party entertainment, the audience attempting to guess the owner of a nose thrust through a slit in a curtain. Usually the company is divided into two sets, one on each side of the curtain, each side taking turn in guessing at someone from the other.

A FEW NOVELTY NOTES.

(By Rosabella Best's Step-Sister.)

I like the patent leather purses that have come out with the strap handle and with the silver mirror, powder box, and salts bottle inside. I paid $2.95 for mine.

What made a hit with me was a 3-piece suit of black taffeta silk with a white lace collar and embroidered chiffon trimming and chiffon sleeves.

They've a striped cotton crepe middy blouse for misses, with a little broad-brimmed hat of the same material to go with it, $1.50 for the set.

I think the midnight blue, in taffeta and wool, will be the favored color. It looks well trimmed with chiffon and silver.

I see some velvet corduroy sport suits in blue and in rose.

They showed me a canary yellow taffeta silk negligee at $19.50 that was so beruffled that I didn't like it. So au revoir. **Mary.**

THE OLD MAN ON THE CRACKER BOX SAYS:

By Fred Schaefer.

Every man grows a moustache once—just to prove he can do it.

Mother is the supreme court of every well-regulated household.

Many people don't look upon gifts from the farm as much, but in reality they're the same as money.

A country boy's notion of a hero is a teamster who can drive a ten-mule team and make the wheelers jump over the chains.

Every once in a while Daughter puts one over Father, and Mother is an accomplice.

A DON'T FOR THE EAR.

One of the most sensitive and delicate organs of the whole human body is the ear. The ear is much neglected, and also much abused. It is "doctored" by amateurs too much. One thing that ought to be avoided is putting home remedies into it, and applying poultices to it. About all that an ear doctor ever puts into the ear is hot water, which he does to remove the debris of the dozen or more things that misguided people have put into it. Don't fool too much with an ailing ear. If it really ails, see a doctor. One treatment usually suffices, and it doesn't cost much.

A "GERMAN PANCAKE" TO RAVE OVER.

(This Week's Preferred Recipe.)

This is probably the most delicious and digestible form in which eggs may be prepared for breakfast, and it is a viand that no one ever tires of.

An ordinary portion for two people is made of four eggs, a pinch of salt, and a tablespoonful of flour wet with a bit of milk to rub the lumps out; all these beaten together until light and frothy, and one cup of milk added and beaten again. Pour this into a hot greased skillet and cook over a slow fire. Both sides should be browned. To do away with turning the pancake set the skillet under the broiler burner, if you have a gas stove. This pancake ought to puff up two inches. It may be eaten with jams, jellies, or syrup.

MRS. BEST'S BULLETIN.

My dear Friends:

I am convinced that you are absolutely certain to be in fashion this spring if you wear anything that wasn't sold last fall. Wearing something sold just recently, in fact, is the foundation of fashion.

The reason I say that anything will be O. K. is that the new things are so vastly assorted in colors and weave and patterns and even in cut.

It seems as if the things each store is featuring are things that the other stores haven't even heard of. One store plunges heavily in new shades of taffeta silks. Another goes in for gowns of Georgette crepe, another for wool sport suits, another for every conceivable degree of shepherd checks, another for black silks, and so on.

And the funny part of it is they are all absolutely correct.

They may not be president, but they are right.

The high cry just now is for silks. This is going to be prominently a silk year. Middle West prosperity (that is really reaching here) probably raised the idea that the buying public will wish to plunge on purple and fine linen.

You can get sport silks that are very crepey in either the rich colors or the black and white.

You can get taffeta silks in strange new figured patterns, from the most bizarre shades to the popular blues and blacks and the black and white stripes.

The chiffon taffeta is believed by many dealers to be the leading fabric of the season.

Underskirts in taffeta or crepe de chine in the gayer colors are coming to the fore, with extra flares and cording and petals to aid in giving the overskirt the proper "set."

Some khaki-colored walking suits in whipcord fabrics are seen at $25 to $30.

Hat trimming of all kinds appears to be partial to perching on the top of the crown.

Gloves with colored stitching and borders—blues, tans and greens usually—are being offered.

Shoes are being shown in even more colors than lately. Some have openwork insteps to show the tint of the stocking through.

Not to be scorned by the tidy housekeeper are breakfast sets—cap, jumper and skirt—of calico and gingham. Prices range from 95 cents to $1.50 for a set.

Striped cretonnes for window curtains may now be had in such combinations as blue, green, yellow, black; or terra cotta, brown, yellow, black and purple.

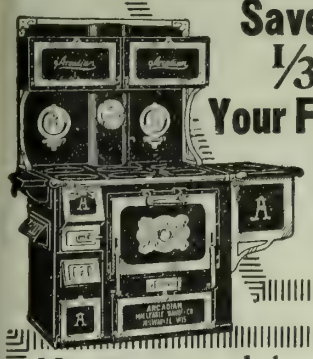
Saw a novel hat with a double brim of shadow lace.

Now having dressed you from top to toe, I think I will leave you to look at yourself in the glass.

Approvingly, **Rosebella Best.**

No Change. — The secretary was very busy on account of several new pupils being enrolled in Sunday school one morning, and in order not to miss anyone she said to little Johnnie, "Oh, yes, you are the new little boy, aren't you?" To which he replied in all earnestness, "No, I'm the same boy."

Stays a Perfect Baker and Saves 1/3 Your Fuel



Most any range bakes well for a while, but to *stay* a perfect baker, year after year, this is what you want. To *stay* a perfect baker it can't have its joints stuffed with stove putty to crumble out and let in false drafts.

Arcadian Malleable Charcoal Iron Range

This range is riveted metal to metal, air-tight without the use of stove putty, and stays air-tight year after year. This is why it stays a perfect baker and saves 1-3 your fuel bills, wood or coal.

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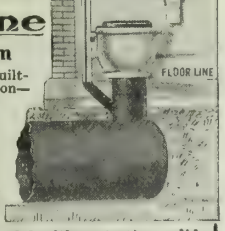
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Dept. 18 Milwaukee, Wis.

ENJOY FAMILY HEALTH AND COMFORT

Why force each family-member to exposure of rain, storm and the cold?

You may now have a comfortable, sanitary toilet right next to your bedroom, off the kitchen—anywhere. And there's no filthy, noxious odors—even in summer—no disease-breeding atmosphere, when you use the

Kaustine Closet System



It's a permanent, built-in-the house installation—as neat and attractive as any city toilet. Endorsed by health authorities everywhere.

No cesspool, water, sewer or plumbing—simply Kaustine, a powerful germ-killing disinfectant—surprisingly inexpensive.

If you seek economical health-protection, solid city-comfort and cleanliness, write for beautiful booklet—write today and state whether interested in system for home, school, factory or church.

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Star Oil Gas Burner Co.
Pasadena, Cal.

THE HOMELAND.

By Dana Burnet.

My land was the west land; my home was on the hill,
I never think of my land but it makes my heart to thrill;
I never smell the west wind that blows the golden skies,
But old desire is in my feet and dreams are in my eyes.

My home crowned the high land; it had a stately grace.
I never think of my land but I see my mother's face;
I never smell the west wind that blows the silver ships
But old delight is in my heart and mirth is on my lips.

My land was a high land; my home was near the skies.
I never think of my land but a light is in my eyes.
I never smell the west wind that blows the sumer rain—
But I am at my mother's knee, a little lad again. —Literary Digest.

TREASURED GRIEVANCE.

Anthony Trollope, the English novelist, who was for many years a valued official of the post office, was once made to realize in an amusing way the occasional blessings of a grievance to the aggrieved. It was a part of his duty to investigate complaints, and the department had received so many and such irate letters from an Irish gentleman in a remote village of County Cavan, that he was at length dispatched to visit the complainant.

It was midwinter, and Trollope arrived at dark, chilled to the bone, after a long drive in an open jaunting car through a sleety snowstorm. He at once began to explain his errand; but the Irishman, observing that he was wet through, hastily sent the butler for a hot drink, began peeling off the investigator's coat, and suggested that he should go up to his bedroom before troubling himself about business.

"Bedroom!" exclaimed Trollope.

"I wouldn't turn a dog out on such a night as this—and yourself a man and a gentleman," was the reply.

On coming downstairs, warmed within and without, and attired in dry borrowed clothing, the novelist tried again—in vain. Business must not be talked at dinner. After dinner he must hear the daughter of the house sing. After she had sung, his host was too sleepy for affairs. The next morning breakfast must not be spoiled by a discussion; and when, after breakfast, Trollope insisted that they really must discuss things, the genial host "wrung his hands in disgust, almost despair."

"But what am I to say in my report?" persisted the representative of the post office.

"Anything you please?" cried the Irishman gayly. "Don't spare me if you want an excuse for yourself. Here I sit all day—and I like writing letters."

That was all there was to it. Trollope reported his hospitable entertainer as "now quite satisfied with the postal arrangements of his district," but with a distinct sense of ingratitude in robbing him of his grievance.—Youth's Companion.

Consoled.—A rector in South London was visiting one of his poorer parishioners, an old woman, afflicted with deafness. She expressed her great regret at not being able to hear his sermons. Desiring to be sympathetic and to say something consoling, he replied, with unnecessary self-depreciation, "You don't miss much." "So they tell me," was the disconcerting reply.—Kansas City Star.

GHIRARDELLI'S Ground Chocolate

received the highest honors at Panama-Pacific-International Exposition San Francisco, 1915



The GRAND PRIZE



The jury of awards of the Panama-Pacific International Exposition, in its final decrees conferred a Grand Prize, the highest award, on

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Standard Oil Company
(California)

MICA AXLE GREASE

FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS.

EMBARGO REDUCES DEMAND FOR DRIED FRUITS.

THE market is just now decidedly panicky over the English embargo on dried fruits. It is announced that anything shipped up to Mar. 4 will be admitted, but that later shipments will be rejected, which will mean the closing of the largest export market to the old crop. What will be done in the fall, when the 1916 stock is offered, is still somewhat uncertain, and indeed there is still a possibility that the embargo may be lifted. Stocks remaining in this country are not unduly large for this time of year, and it is hoped that the domestic demand will absorb everything. Values have accordingly been maintained, except for a further drop in prunes, which a good many holders are getting anxious to sell. Prices, however, are almost entirely nominal at the moment, as there is practically no buying whatever, and will be very little until the packers know where they stand. The only articles in which a surplus is at all likely are prunes, peaches and apples. The shortage of imported figs is causing increase in future supplies from California.

A later report from London states that licenses for importation of dried fruits, may be issued after Oct. 31, allowing one-half of the quantity imported last year.

San Francisco, March 8, 1916.

WHEAT.

The Eastern markets fluctuate so fast that it is hard to keep in touch with them, but this influences local values only in a general way. Of late the tendency has been a little easy, on reports that Russian wheat might soon be released. California Club shows another slight decline, and the demand for all grades is limited.

Cal. Club, ctl.	1.65	@1.70
Northern Bluestem.	1.85	@1.90
Northern Red	1.85	@1.95

BARLEY.

Trading in this market has been light for the last few days, most sales being of a small jobbing nature, and the principal demand is for feed for current needs. Values are unchanged.

Shipping, ctl. $1.40	@1.42½
Choice Feed, ctl ... 1.32½	@1.35

OATS.

The movement of oats here is limited, and no large quantity is required for feed; and while stocks are not heavy, values show little strength, except on the better grades of white.

Red Feed $1.35	@1.37½
Red Seed 1.45	@1.65
White 1.50	@1.55
Egyptian 1.50	@1.55

CORN

There is nothing new in Eastern or California yellow. Offerings of inferior sorgrum grains are quite large, and such stock will not bring full prices, though first-class grain is salable at the quotations shown.

Eastern yellow, ctl. ...$1.80	@1.85
Milo Maize 1.40	@1.45
Kaffir 1.65	@1.70
Egyptian 1.50	@1.55

BEANS.

Few Eastern shipments have been sent out recently, and dealers report practically no inquiries at present. Dealers still feel confident that the demand will come, however, and aside from a slight decline in bayos, values hold fairly steady.

(On wharf, San Francisco.)

Bayos, per ctl. $4.60	@4.70
Blackeyes 3.40	@3.50
Cranberry Beans 4.75	@4.85
Horse Beans 3.25	@3.50
Small Whites (south .. 5.60	@5.70
Large Whites 5.75	@5.90
Pinks 4.30	@4.40
Limas (south) 4.30	@4.40
Red Kidney 6.50	@6.75
Mexican Reds 4.50	@4.65
Tepary Beans	4.00

SEEDS.

Prices have not changed. Alfalfa is moving well, and is firm, with limited offerings of good stock.

Melilotus Alba	6 c
Alfalfa, per lb. 21	@22 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch 4¼	@ 4½c
Soy Beans	6 c
Canada Peas 5¼	@ 6 c
Sudan Grass	40 c

HAY.

Arrivals of hay continue very large at this time of the year, owing to the releasing of a great many cars; but the shipments are beginning to fall off now, and will probably be much lighter from now on, as stocks in the country are getting well cleaned up. With supplies in the country as small as they are, a firm market is expected from now on, though the consuming demand is much lighter than it was.

No. 1 Wheat $13.00	@16.50
No. 2 ..... 12.00	@14.50
Tame Oats 12.00	@18.00
Wild Oats 12.00	@14.00
Alfalfa 15.00	@18.00
Stock Hay 10.00	@12.00
Straw, per bale ..... .25	@ .40

FEEDSTUFFS.

Green feed is now coming on nicely, and the demand for some items, such as beet pulp, alfalfa meal, etc., has been sharply curtailed, although such staples as bran, middlings and rolled barley hold up well. Values stand as before.

(Wholesale prices per ton, carload lots, San Francisco.)

Beet Pulp, per ton ..$22.50	@23.50
Alfalfa Meal, per ton.. 20.00	@21.00
Alfalfa Molasses Meal per ton 21.00	@22.00
Bran, per ton 26.50	@27.50
Oil Cake	Nominal
Cocoanut Cake or Meal 23.00	@25.00
Cracked Corn 39.50	@40.50
Middlings 33.00	@34.00
Rolled Barley 29.00	@30.00
Tankage	45.00
Rolled Oats 29.50	@31.00

VEGETABLES.

Local stock of many kinds is still scarce, and a good deal of Florida stock is on the market, though this will be crowded out before long. Peas are very scarce, and few beans are offered. Bay rhubarb is much lower, with large shipments going East. Asparagus also will soon be going East. The crop is heavy, and with liberal arrivals prices have again dropped. Lettuce also is lower, with liberal receipts.

Cabbage, ctl. 50	@60 c
Cauliflower, doz. 50	@60 c
Sprouts, lb. 5	@ 6 c
String Beans 20	@30 c
Peppers, bell, lb 15	@25 c
Rhubarb, box, Bay 1.50	@2.00
Peas, southern, lb.	Nominal
Tomatoes, L. A., crate.. 2.00	@2.50
Eggplant, lb. 20	@25 c
Celery, crate 3.00	@3.50
Artichokes, doz. 30	@60 c
Lettuce, small, crate 1.00	@1.75
Asparagus, lb.....10	@12½c

POTATOES AND ONIONS.

Oregon has declared a quarantine on California potatoes, requiring very strict inspection at both ends, which will hamper the movement to some extent. Supplies are now very light, and, with desirable lots cleaned up, Delta stock is easier, others remaining firm. Sweets are scarce and high, and the onion market is quite firm for all varieties.

(On Wharf.)

Oregon Burbanks $1.75	@2.00
Salinas Burbanks 2.10	@2.25
Delta Burbanks 1.10	@1.50
Sweet Potatoes, ctl. ... 2.30	@2.50
Onions, Delta, ctl. 1.85	@2.25
Oregon 2.00	@2.50
River Bermudas, crate..	2.00
Garlic, per lb. 10	@12½c

POULTRY.

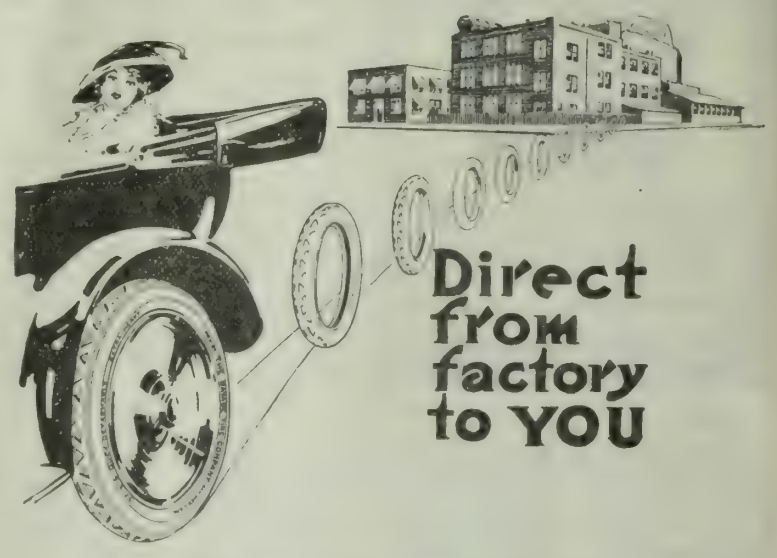
Eastern stock has been coming in quite freely for the last few days, with no very heavy offerings from nearby points, and the market shows more firmness all round than last week.

Turkeys, dressed 25	@27c
Live Turkeys, lb 19	@21c
Broilers, 15 lbs. to doz. and less, lb 45	@48c
do, over 15 lbs to doz....35	@40c
Fryers 26	@28c
Hens, extra, per lb. 17	@18c
Small 17	@18c
Smooth Young Roosters, per lb. 21	@22c
Squabs, per doz. 3.50	@4.50
Geese, per pair 2.25	@3.00
Ducks, young, lb. 18	@19c
Old 14	@15c
Belgian Hares 9	@11c

BUTTER.

The local trade is not yet certain as to what is really required by the storage law, and continues to hold off. The effect of this, however, has been nullified by a sudden spurt in all the Eastern markets, which has attracted shipments of California butter amounting to probably nearly twenty carloads, greatly reducing supplies for the home market. This has naturally brought a sharp advance in local prices.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	25	24	25½	25½	26	26
Prime Firsts .	25½	25½	25	25	27	26
Firsts	25	25	24	24½	24½	25



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EGGS.

The egg market was rather depressed about the end of last week, but is now picking up a little, with storage buyers coming into the market. Eggs suitable for storing have so far been a little scarce, and a local packer has been offering 21½ cents on the Exchange for storage pack. This demand is expected to keep the market fairly steady on about the present basis for some time.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	18	18	18	18½	19	19½
Sel. Pullets	16½	17	17	17	17	17

CHEESE.

Fancy flats have been marked up a little, but more liberal supplies are expected shortly.

Y. A.'s, fancy .....18 c
Fancy Calif. flats, per lb. ....18 c
Monterey Cheese .....17@18c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	24	24	24	25	25	27
Eggs	18	18	18	18	18	18

DECIDUOUS FRUITS.

Apples are still the only offering in the local market, and they receive very little attention. Stocks, however, are not considered excessive and values on desirable lots are pretty steadily held.

Apples:
Pearmain ..... .85@1.25
Baldwin ..... .75@1.25
Oregon Spitzenbergs.. 1.50@2.50
Jonathan ..... 1.25@1.75

DRIED FRUITS.

Apples .....6 @6½c
Apricots, per lb. .....8 @11½c
Figs, white .....5 @5½c
Black .....3½@4 c
Calimyrna .....6 @7 c
Prunes, 4-size basis ....4 @4½c
Peaches .....3 @3½c
Pears .....4 @7 c
(Associated Raisin Co. Prices.)
Fancy Seeded, 16 oz. .....7 c
Choice Seeded, 16 oz. 6¾c
London Layers, 3-crown, 20-lb. box 1.25
Imperial Clusters, 6-crown, 20-lb. box 2.50
Bulk, layers, 50-lb. box 2.75

CITRUS FRUITS.

The eastern auction prices on oranges and lemons are still below normal owing to poor quality of fruit and large supply. However, it is believed that these conditions will soon be overcome and normal prices paid. At New York on Monday, March 6th, navels averaged from $1.20 to $3.15 per box, and lemons $1.70 to $2.40. At Chicago the same day navels averaged from $2.50 to $3, lemons from $2 to $2.50 per box.

The San Francisco demand for oranges has been decidedly slack for the last few days, and supplies are rather heavy, though values are well maintained. Lemons also are inactive, and lemonettes are easier.

(Wholesale prices, San Francisco.)
Oranges, Navels .....$1.75@2.75
Tangerines ..... 1.50@2.00
Grapefruit ..... 1.25@2.50
Lemons, box ..... 1.75@3.25
Lemonettes, box ..... 1.25@1.75

HONEY.

Water White, comb .....13@15 c
Amber ..... 8@12 c
Water White, extracted .. 7@ 8 c
Light Amber ..... 3@ 4 c
Dark ..... 2@ 2½c

NUTS.

California nuts are now closely cleaned up on the spot, with the few offerings of desirable stock very closely held, and prices are little more than nominal. Many inquiries have been received for 1916 crop, and there are orders on hand for the expected output of almonds. Imported walnuts are moving off well.

(Prices f. o. b. San Francisco.)
Almonds (1915) .....Nominal
Walnuts (1915):
Budded, per lb. 17½c
No. 1 .....14 c
No. 2 .....11 c
Jumbo .....17 c

LIVE STOCK.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, S. F.)
Steers, No. 1 .....7¼ @7½c
No. 2 .....6¾ @7 c
Cows and Heifers, No. 1..6¼ @6½c
No. 2 .....5½ @5¾c
Bulls and stags .....4 @5½c
Calves, light .....8½ @9 c
Medium .....7½ @8 c
Heavy .....6½ @7½c
Hogs, grain-fed:
100 to 160 lbs. .....8 @8¼c
160 to 175 lbs. 8¼c
175 to 250 lbs. 8½c
250 to 325 lbs. 8¼c
Prime Wethers .....7½ @7¾c
Full Wool Lambs .....9 @9½c

DRESSED MEATS.

Steers .....10¾ @11¼c
Veals, large .....12½ @13 c
Small .....13 @14 c
Prime Wethers .....13 @13½c
Lambs ..... 16 c
Hogs .....11½ @12 c

HORSES.

(Approximate values in San Francisco, based on auction sales.)
Drafters, 1700 lbs and up $250@300
Drafters, 1550 to 1650 .. 150@225
Chunks, 1350 to 1500 lbs. 150@175
Wagon horses, 1050 to 1350 lbs. .....110@150
Green Mountain range horses, 950 to 1200 lbs. 20@ 75
Farm Workers ..... 50@100

WOOL.

(Prices paid in the country.)
Sacramento Valley, lb. 18 @19 c
Southern, year's staple 15 @16 c
Six months .....13 @15 c
San Joaquin (defective) 10½ @11½c
Northern, free .....13 @16 c
S'thern Mountain, free 13 @14 c
Tehama County, free ..20 @24 c

HIDES.

Dry, 15 lbs. and over ..29 @30 c
Kip, 10 to 15 lbs. ....30 @31 c
Veal, 7 to 10 lbs. ..30 @31 c
Calf, under 7 lbs ..32 @34 c
Wet Salted, Steers ....16½ @17½c
Cows .....16½ @17½c
Kip .....18 @19 c
Calf and Veal .....21 @22 c
Bulls and Stags.....13 @14 c
Horses, dry, large .....$1.25@2.25
Sheep, long wool ..... 1.25@1.40
Medium ..... 1.00@1.25
Shearlings ..... .60@ .80

GROCERIES.

The only important change in the grocery market during the week was the rapid rise in sugar, attributed to Cuban crop conditions. An advance of 15 points has just taken effect, following one of 10 points, and the local wholesale basis is $6.70 per ctl.

WEEKLY BUTTER AVERAGES.
Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	18.60	28.00		28.20
" 9	25.33	26.66	26.00	28.10
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	26.66	36.33	28.00	36.66
Feb. 6	26.68	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25
" 20		32.00		32.00
" 27		30.90		35.25
Mar. 5		24.08		24.16

WEEKLY EGG AVERAGES.
Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 26	28.83	36.33	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50
Feb. 13	23.00	28.90	25.10	28.00
" 20		23.66		20.33
" 27		20.30		18.50
Mar. 5		18.33		18.00

Publisher's Department

Rain again interfered with our field force last week, but just the same we added 168 new subscriptions to our paid list.

This issue of the Pacific Rural Press carries more paid advertising than any previous issue that we have record of. Read these advertisements carefully and we believe that the new ideas gained will be worth the trouble. In writing to advertisers please say you saw the announcement in this paper.

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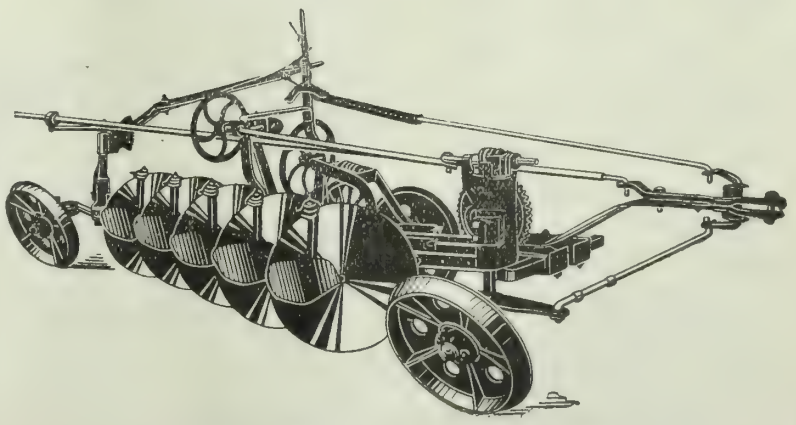
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REX BORDEAUX PASTE
REX MISCIBLE DISTILLATES
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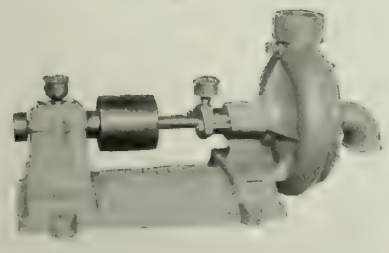
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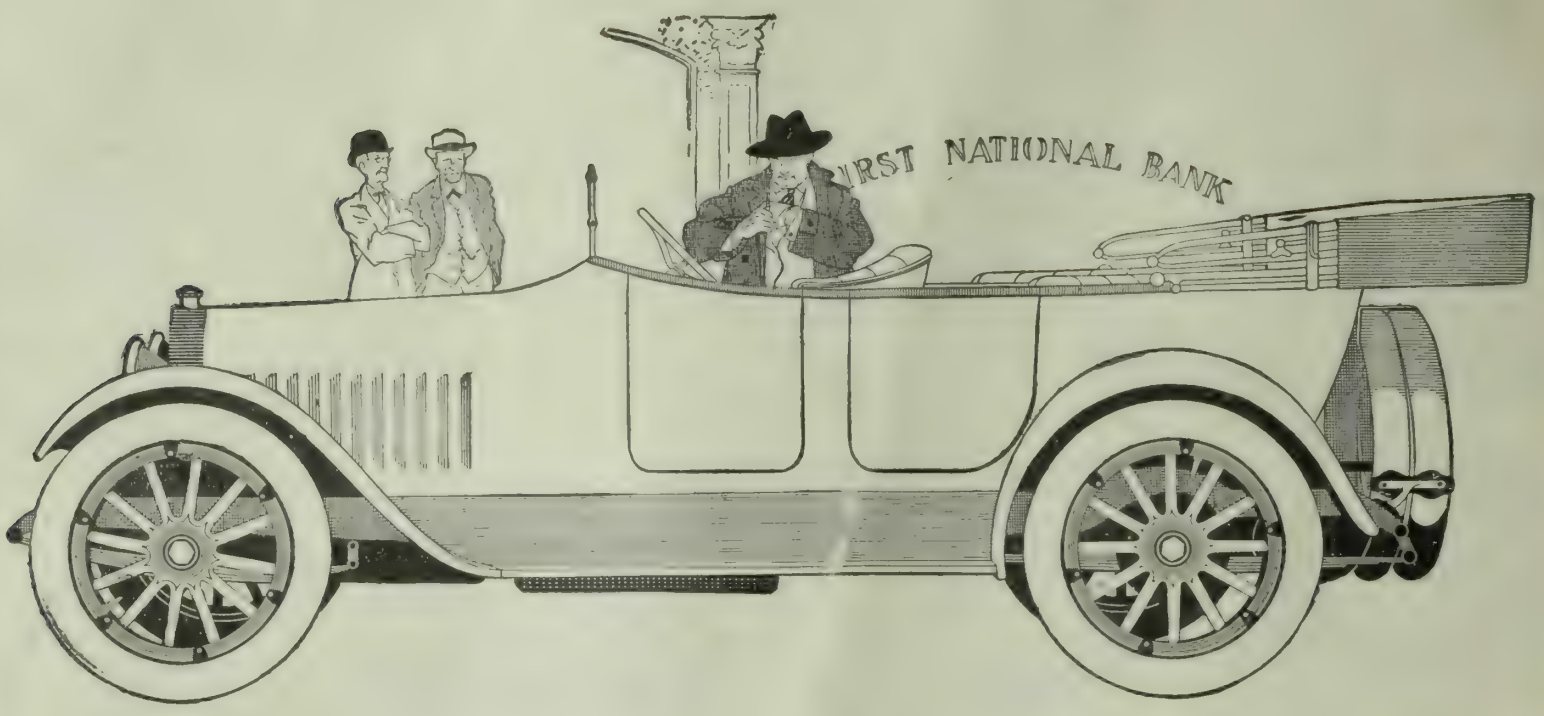
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This is the New 3400 r.p.m. Chalmers: 45 H.P.; 2660 Pounds—the Price $1050

600 merchants, who sell a great many thousand cars every year, took one look at this new 3400 r. p. m. Chalmers and bought $22,000,000 worth in forty minutes.

Perhaps half of them came from county-seat towns, some from smaller communities. They took almost half the Chalmers output.

That means about 10,000 of the new 3400 r. p. m. Chalmers are going on the farm.

The other half will go to the cities, which for eight years have absorbed the greater share of Chalmers production.

You can stand on Fifth Avenue any day and watch a million dollars' worth of Chalmers go by. Stand on Jackson and Michigan Boulevards, Chicago, and you will think half the city is riding to work in Chalmers.

Minneapolis, Boston, St. Louis, Kansas City, San Francisco, Cleveland, Detroit, daily show the Chalmers conquest.

Now comes this new 3400 r. p. m. Chalmers; up goes the demand, new buildings, production. And down comes the price to $1050.

That is $300 less than any Chalmers model ever built before, and some $900 less than the Chalmers of three years ago.

The hundreds of Chalmers dealers who sell a great many cars to farmers every year have bought more than $10,000,000 worth of these new cars because $300 saved is $300 earned, and $300 is six per cent. on $5000.

They bought so heavily because they knew, as good merchants, that this was a good-sense kind of a car for a farmer to drive. It develops 45 horse-power at the usual cost of 25 H. P. (And gasoline isn't getting any lower).

The engine is rather small beside the big hulk of an engine it used to take to turn up 45 horse-power. The cylinders are 3¼ x 4½—six of them. But they deliver the stiffest wallop that ever came out of an engine of its size. It "turns over" 3400 revolutions per minute, or better than 56 a second.

You understand the "kick" that is back of speed. Some cars do 1400. Some 1800. Some 2200. Others 2400. One or two get around 2600; one reaches 3000 r. p. m.

But this is the highest engine speed ever developed in an American stock car.

It means great power from a small engine; a light-weight chassis; quick acceleration; long mileage on gas; abnormal tire life; and ability to pass your neighbor almost at will.

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1201 Van Ness Avenue,
San Francisco, California

Vol. XCI—No. 12 Forty-sixth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO MARCH 18, 1916. LOS ANGELES

California State Library 7-1-17

Military Precision in Frost Fighting.

Though the exact practices described are practiced by citrus growers, their lessons are clear also for deciduous fruits and other crops endangered by spring frosts.

[Written for Pacific Rural Press.]

AFTER the freeze of 1913, citrus growers invested in frost-fighting outfits by the wholesale. Now that we have had no serious troubles since then, people are prone to forget, and to allow their equipment to rust out or to provide insufficiently against repetitions of the disaster.

It is never too soon to begin planning preparedness, for equipment may have to be ordered months ahead, and construction of reservoirs and pipe lines may be more convenient now than later.

One of the orchards designated by the Fruit Growers' Supply Co. and others as being best prepared for a big freeze is that of the Arlington Heights Fruit Co. of Riverside, whose 44,000 firepots of several makes are protecting 554 acres containing about 50,000 lemon trees. This orchard extends about six miles along the foothills.

"I think we have everything well in hand," says Supt. F. A. Little. There are three main divisions divided into 14 districts over each of which a certain man has charge of the lighting.

The main features of the defense equipment, aside from the smudge pots and torches to light them are: (1) a half-million gallon steel tank 200 feet above the orchard from which an 8-inch screw pipe runs the oil down to a lateral across the upper end. The aim is to keep oil enough on hand to fill all the pots three times. From this lateral a 2½-inch pipe runs down the various streets and delivers oil at two convenient faucets on each 10 acres. (2) Twenty-eight tank wagons of 350 to 500 gallons, from which oil is distributed by hand to the pots, using 5-gallon oil cans. (3) A dozen telephones, from which to report temperatures and conditions, and to receive orders for lighting. (4) Reliable thermometers at significant points, maximum and minimum thermometers, and three recording thermometers from which the charts are removed once per week. (5) A book for each of the three main divisions in which daily temperature records are kept, as well as half-hourly records or oftener during nights when smudging is in progress. These records help form judgment of when or when not to light the fires.



Snow-capped mountains on the rim of the Redlands citrus district. The cold air currents from these mountains make frost fighting preparedness a good investment.



A deciduous orchard, well supplied with frost fighting equipment to guard against spring frosts which sometimes do great damage.

Men Required.—To light up the whole outfit quickly on a cold night would require 145 men, all of which are available, besides teamsters, who are not called out except as a last resort, because they have to work on the refilling next day. Most of the workers are instructed and trained in lighting fires.

Placing and Lighting Pots.—The smudge pots are placed, one per tree for five rows (in colder blocks for seven rows), then one row is vacant. The pots not used in the vacant rows are placed outside the orchards in cold spots where the customary air currents will carry heat and smoke over the trees. The pots are set level to avoid spilling oil which damages the trees and reduces the capacity for long firing.

The torches hold four to eight quarts of a mixture of half distillate and half gasoline. In the spout is an asbestos wick, around which has been wrapped a piece of fine copper wire netting. When the mixture has moistened the wick, it may be lighted and is then ready to light about 300 pots. This wick is loose enough to allow drops of the burning mixture to fall onto the smudge oil and there is practically no danger of explosion. Men have crossed ten acres lighting 30 pots in four minutes. The average time is 5 or 6 minutes.

It takes the same time to put out the fires by closing the dampers and putting on the covers. New pots are harder to light, so a piece of sacking is put into each just touching the oil. This acts as a wick until the surface oil is heated enough to generate gas.

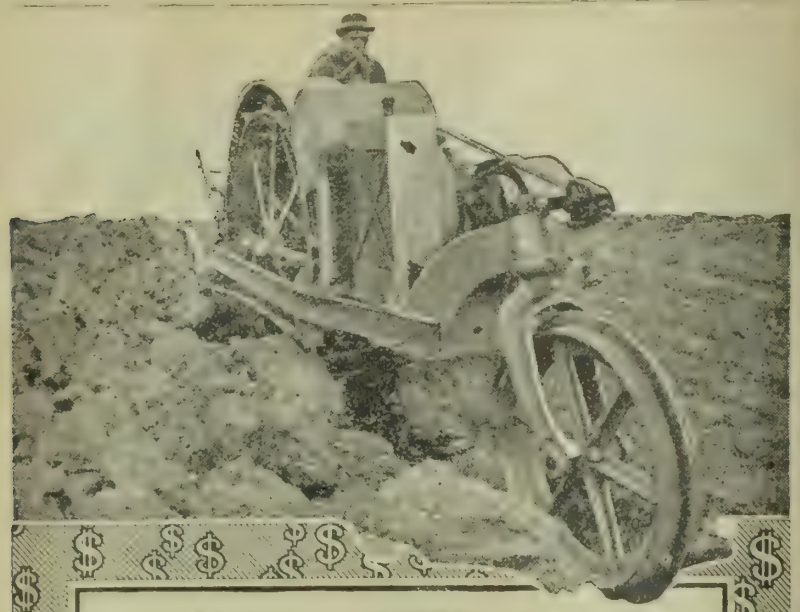
Distributing Oil. — The tank wagons are filled from the faucets in 2½ to 3½ minutes and driven down designated and previously pruned rows to fill the pots. When the ground is soft and rough it may require four mules even on the smaller size; but the hauling is easier in the designated rows, and the breaking of branches, less. The same rows are used to haul fertilizer and fruit.

Seven men per wagon fill five rows of pots at once, emptying the tank in 20 to 25 minutes. Meanwhile a full tank has driven up and the men get busy emptying it while the first returns for another load. Whenever any oil is spilled, the oily dirt is at once put into a box on the tank wagon and later dumped outside the orchard.

Telephones Necessary.—Telephone central, to which temperature reports come on cold nights, is located centrally in the largest area likely to be cold.

"To light up intelligently, we must have prompt information regarding temperatures. On some nights the variation of the temperatures along the six miles is astonishing. In the past, on cold nights when smudging was done, it was uncertain what had been accomplished; but now we have the means of information in hand. That means intelligent control; it may mean not to light up, which would save oil and that means money; it may mean light up and

(Continued on page 351.)



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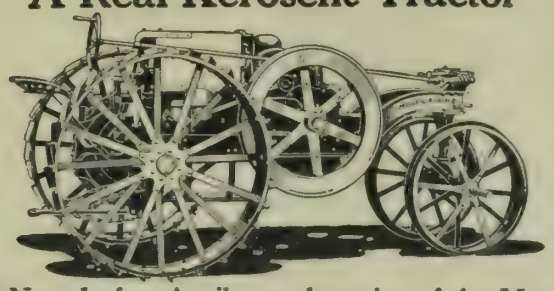
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Pacific Rural Press

SAN FRANCISCO · MARCH 18, 1916. · LOS ANGELES

Farmer Stenzil's Ranch of 1000 Wonders

How waste on one of California's most diversified farms has been eliminated to the minimum by the addition of livestock to its activities.

[Written for Pacific Rural Press.]

HIS Portuguese help call him "Boss Stenzil," he signs his name F. Stenzil, but the writer prefers calling him "Farmer Stenzil," because, if we may be pardoned for using an antiquated term, "he's a farmer from the ground up." He has an office just next to his garage, one befitting in outside appearance the thousand-acre farm he reigns over and situated in just the right place to allow familiarity with all of the ranch's operations. What that office looks like inside the writer is unable to say, for while he spent the best part of a rainy day with this "Farmer Stenzil," he didn't see the interior of it. To add to his curiosity about that office, as he was being driven to San Leandro to take the car, the driver let slip this brief advice, "He's got a big man's job, all right. During the busy reason he's in the saddle from morning to night bossing the 200 hands he hires." Now, we reasoned, if he isn't in that office in the busy season nor on rainy days in the dull season, just what use does he make of it?



4th. Right Top—Back View of milking barn and corral. Right Bottom—A two-year-old heifer just fresh. Left Top—Future Herd Prospects. Left Bottom—Farmer Stenzil and his office. Center—Marie Clothilde De Witt

Holsteins Were Lucky.—We found Mr. Stenzil leaning against a feed bin in his dairy barn, a big, fine, well-ventilated and well-lighted structure, with cement floors and steel stanchions, the last word in sanitation and convenience. "That is right," he afterwards confided, "it cost money. There's ten thousand dollars stuck around here somewhere in it and the milk house. If it hadn't been for that, though, I might have quit the dairy game one time when both myself and milkers were being just about pestered to death with a fool inspector from the city."

That was one time the Holstein breed was lucky, for this Farmer Stenzil breeds purebred Holsteins just like he farms, constructively. "Feeding a boarder is the most disheartening job I know of," he told us, and that typifies the man. He's not only a large farmer, but probably the most diversified farmer of his size in the United States and everywhere he eliminates waste to the last degree.

His implement shed is just one illustration of his abhorrence of waste. In building it a floor was laid on top of the rafters, providing a storage space for hay over the implements, thus making the roof serviceable for two purposes instead of one.

No doubt it has been this utilization of small things that has made Farmer Stenzil a pyramider of land, for he has builded a thousand-acre farm near San Leandro, Alameda county, with an average valuation of a thousand dollars an acre, from a foundation in '88 of 250 acres worth $225 an acre, and, in his own words, "Every acre and every improvement has been purchased with profits from the farm."

It is not surprising, when you know the man, that he started his dairy to eliminate waste. For over 20 years he had been buying land and fitting the most suitable crops to it till now his farm is cut up in this manner: 150 acres to pear and apricot orchards, 75 acres of currants, 75 acres of rhubarb, 50 acres of peas, 100 acres of tomatoes, 150 acres of barley and a like amount of grain hay, besides 75 acres of alfalfa, 25 acres of stock beets and some wild pasture land.

If you can imagine the supervision required to farm such a large acreage in such a diversified manner as those crops demand, then you won't wonder that the writer asked, "But why, with all these vast interests to look after, did you assume the additional responsibility that was certain to came in breeding registered Holsteins?" Neither will you be astonished, after what we have already told you, at his reply.

The Deciding Point.—"Well, sir, I guess the incident that was the deciding point with me was a 150-ton lot of hay I sold to a Swiss dairyman. You see we used to have trouble some years selling the hay we grew on the low spots of the ranch. When there was plenty of hay in the country I had to beg fellows to buy it. This dairyman agreed to give me ten dollars a ton and when he came to pay me he handed me a check for $1500, the creamery check for one month's cream from his herd of 80 cows. That set me to thinking. It'd set anybody to thinking wouldn't it?

"We'd always had about 20 cows on the place, just scrubs, you know, to furnish milk and butter for our own use, but they weren't handled right. Then we started to sell cream. That made me appreciate a good cow as I never had before. It taught me that you can't show much profit with poor stock. You see how quick this Farmer Stenzil detected the leak? In less than six months after he started his dairy for the purpose of eliminating his waste with hay, he found another leak, poor cows, and by June, 1911, he had sent a mail order to New York for 30 registered Holstein heifers and two registered bulls. "That was the best buy I ever made," he assured us; "the poorest purebred is better than the best grade I ever owned. My herd average is right around four gallons a day per cow, while Blank's grade herd over there doesn't average but three gallons a day to the cow."

"But how, without previous experience, did you select a herd intelligently by mail?" we asked, for we couldn't by this time imagine Farmer Stenzil doing anything blindly. "Did you consult some experienced breeder?" we continued, for we had one or two theories we wanted to confirm. "No, I didn't consult anybody. Fact is, I'd been reading about purebred Holsteins in the farm papers for years, and from them I formed a preference for the King of Pontiac strain of Holsteins. I'd been reading about the wonderful records of his progeny, so I ordered all of that breeding I could get. Yes, I guess the farm papers got me into the purebred game, but I've never regretted it."

"Was I satisfied with the mail-order buy? Look here, last year I started to do official testing—that's the only way of telling what a cow is doing—and 17 of those 30 heifers have made 7-day records

(Continued on page 368.)

California Has Ideal Canning Strawberry

The special adaptations of the new Ettersburg races of strawberries are shown to be as striking and original as their origin is novel and distinctive.

[Written for Pacific Rural Press by Albert F. Etter of Briceland, Cal.]

Strawberries for Special Purposes.—The trade consumes large quantities of crushed strawberries used by cooks and confectioners. The consumers demand a product that is quite red, and while the manufacturer naturally prefers a deep red berry, he is able to redden up a light-colored stock by the addition of harmless coloring matter, and the trade does not object to this practice. The more essential requirements of a berry to fully meet the wants of the crushed strawberry trade are high flavor, sodility, and meatiness to give the product good body and attractive flavor. The same requirements as above noted are necessary in a berry for jam manufacturers.

The glace and maraschino manufacturers need a berry of solid structure—one that will not go to pieces in processing. They too need color in the finished product, but are able to use artificial coloring if the variety is deficient.

Strawberries, in the rank and file of ordinary varieties, never have been a pronounced success from the canner's point of view. Their deficiency is in a structure that breaks down and forms a shapless puree in processing. Added to this defect is that, regardless of the brilliant color of the fresh berry, the canned product soon fades and loses all attractiveness. Serious as this is, the flavor departs with the color. Accustomed to good canned strawberries, as it has been my good fortune to be for the last fifteen years, trying to enjoy the canned strawberries on the market causes wonder why they are put up in No. 2½ cases when a small sample would be quite sufficient where only a taste is enough. Some of these, to avoid sufficient cooking, or to counteract old age, are doctored with benzoate of soda. This is the situation of the second fruit in commercial importance in the temperate zone, as a canned fruit. Rebuild the strawberry and overcome the defects I have enumerated and the gateway is opened to a vast industry that will utilize thousands of tons of strawberries grown especially for canning purposes.

An Ideal Canning Strawberry.—We will now consider how far I have, in my work, overcome the defects in the ordinary strawberry for canning purposes. The ideal strawberry for canning is preferably globular, or nearly so, in shape; it must be red and lightly flavored; it must be firm, solid, and resist going to pieces when processed; it must hold its color and flavor indefinitely when canned; it should be of regular size and true to form. I have not one, but half a dozen varieties, that can fill every classification enumerated, and then some. Ettersburg No. 121, a hybrid between the wild Alpine strawberry of Europe and the buck strawberry from Devil's Gate, south of Cape Mendocino, fills it exactly. It is a berry that can also be picked without the husk, shipped to a cannery any distance, and after arrival stand washing like potatoes. It does not readily and quickly become overripe, nor will it break down with any amount of boiling. It is practically a wild berry and has the hardiness of the robust beach strawberry. In my region it will grow on manzanita land, too sterile to grow good wild grass. Only on medium to poor land will the berries grow to their largest size, and here, too, we get the firmest fruit, which will average between three-quarters and one inch in diameter. This fruit, if picked as soon as ripe, if processed by the minimum sterilization heat of 176 degrees for 35 minutes, will can almost solid and the fruit is as firm and whole as canned cherries.



Ettersburg No. 121, a hybrid between the wild Alpine strawberry of Europe and the buck strawberry from Devil's Gate, south of Cape Mendocino.

The serious defect of No. 121 is its susceptibility to leaf spot, which almost defoliates it in some localities and also destroys the crop. Another defect is that it will not tolerate rich moist land which aggravates leaf spot, and the richer the land, the smaller the berries.

Other Special Varieties— Euresko a new variety, is similar to No. 121, but somewhat larger, less acid, and an ideal table berry. It holds its fruit clear of the ground and is neither subject to leaf spot or averse to growing on a fairly rich land.

Ettersburg No. 89 (Dornan X Cape Mendocino beach strawberry) is a heart-shaped berry of mild acid, whose only faults are that it likes rather poor land and fades slightly. It is huskless, a great bearer, and long lived. The fruit will average an inch in diameter. I do not consider it a first-class table berry, but it is well flavored when canned.

No. 80 meets every requirement except color, which is deficient. Also as compared to the other canning berries it does not readily part from the husk, which in itself handicaps the variety by adding the additional expense of husking, which practically affects the cost of picking. Huskless varieties would save this expense and add to the profit of the grower.

No. 390 (Sample X Ettersburg No. 121) is redder in color than No. 121, but not a good table berry. It is huskless, the fruit is solid, globular in form, and produced on rather long trusses in great clusters. It will most likely tolerate rich soil as the plant has a leaning to the Sample side of the combination. On rich land I would expect some of the berries to grow double.

[At another time the matter of evergreen and everbearing characters of strawberries will be considered.—Editors.]

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SAN DIMAS, CAL.

HEAVY DEMAND FOR ORCHARD TREES.

[Written for Pacific Rural Press.]

Orchard tree planting is far heavier this year than last, according to Grant Stoneburner of the Armstrong Nurseries, Ontario; and there is a much larger percentage of "home builders" orders. Three times as many people are ordering $10 to $50 worth of trees this season as last. Many of this year's planters are people who wanted to start orchards last season but couldn't on account of financial difficulties. In the neighborhood of 500 such people are recorded among last year's list of prospective planters; and their orders this season are usually just about what they had contemplated last spring.

The floods have caused some people to cancel their previously booked orders for this season, especially in San Diego county; but many of these have left their orders on the books for next season, when they expect to be in shape.

Citrus Trees in Heavy Demand.—"We will sell every citrus tree we have," says Mr. Stoneburner, "at an advanced price over last season. They are in much stronger demand."

Avocados Selling Well.—Though L. E. Nigh, who has charge of the avocados, says they are better if not planted until March 15, a great many trees are being shipped out. There is very little large commercial planting, the orders being for 100 trees or less.

The Lindsay-Porterville district is taking a great many. A hundred trees were shipped to Strathmore March 1. The thin-skinned hardy Northrup is most in demand, with the thick-skinned Taft next.

Olives by the Thousands.—Orders are on the books for 77,000 olive trees to be shipped out in March and April. Most of these are Missions and Manzanillos, with some Ascolanos and Sevillanos.

Peaches Lead Deciduous.—Muirs, Lovels, Phillips, and Tuscans are the leading deciduous fruits moving, with Royal apricots, walnuts, Thompson grapes and Bartlett pears being shipped in considerable quantities.

STRAIGHT PEACH LIMBS.

[Written for Pacific Rural Press.]

Some folks haven't pruned their peach trees yet; and it is not too late, even where the blossoms are out; for whatever sap exudes will seal the pores of the cut, and healing will proceed at once instead of letting the cut dry out a month or two as in winter pruning. There is an added advantage now in that the thriftiest fruit buds are showing their vigor and may be left in preference to others.

A limb which projects straight at an angle rather than with a curve from the trunk or main limb is preferred by V. G. Lucas of Cucamonga. The one which projects nearly at right angles and then curves upward may have its fibers better knit in with the fibers of the trunk; but Mr. Lucas has observed many such, which under a load of fruit, have bent outward to such an extent that the under half of the curved portion of the limb is split loose from the upper half, opening the limb to decay.

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Need Better Root Stock for Plums.

[Written for Pacific Rural Press.]

To the Editor: The article by Edw. O. Amundsen in your issue of February 19 is very interesting and shows the urgent need of a root stock for the Diamond, Grand Duke and Hungarian plums that will make a perfect and permanent union.

As far as my experience goes, and I have inspected a great many orchards of the above varieties of plums, grafted and budded on both peach and myrobolan roots, the latter root showed as big a loss from defective unions as the former. They usually grow well for a few years, anywhere from eight to nine, and then some will start to die. Upon examination every tree that dies from this cause will show the lumpy, poor union as described by Mr. Amundsen.

I inspected a shipment of Grand Dukes yesterday, budded on almond root, and it will be very interesting to note the behavior of stock and graft in relation to making a perfect union. I believe experiments should also be made with the apricot root.

As the matter now stands it is a very serious proposition to undertake large plantings of the above named sorts, as a certain per cent will die off in the course of a few years.

I have observed from experience that a better orchard of these fruits can be obtained by grafting into the limbs of peach trees when they are three or four years old or older. This looks like an extraordinary assertion but is a fact nevertheless.

J. E. Hassler,
Horticultural Commissioner Eldorado County.

SUCKERING PRUNES AND APRICOTS.

[Written for Pacific Rural Press.]

"There is a certain time in the spring when you can go out through your prune orchard and give the suckers a little jerk so that they will pull out, leaving a clean, round hole without tearing the bark. If you let them stay a little longer, they tear the bark; and a little longer, you will have to prune them off," says A. Taylor of Santa Clara county.

Geo. Robinson also of Santa Clara county says the same thing is true of apricots. In order to catch the suckers at the right time in different localities it will be necessary to test them once in a while after May 15.

CALIFORNIA IRRIGATION DISTRICTS.

In the past fifteen years there have been formed in California, under the irrigation act which was recently amended to meet the current demands, sixty-two irrigation districts, with an area of close upon 3,000,000 acres, according to an extensive report upon irrigation in California, given out by the State engineering department. Although definite data as to cost has not been available in all instances, it is estimated that the total cost of watering this area has been close to $20,000,000. Definite figures on 2,132,489 acres under irrigation show the cost for that acreage to be $12,142,011.

Since the report was prepared and placed in the hands of the State Printer for publication the Carmichael district, near Fair Oaks, 1306.52 acres; West Side, near Tracy, 11,500 acres; Terra Bella, 12,500 acres; Lindsay-Strathmore, east of Lindsay, approximately 18,000 acres, and South Lassen district, near Doyle, with 22,000 acres, have been organized.

A number of other districts are contemplating immediate formation. They are the Paradise, Thermalito, Oroville, Willows, Princeton, Ione, Morgan Hill, Merced, Madera, Stratton and Cardiff districts.

WEAK TREE CROTCHES.

[Written for Pacific Rural Press.]

For weak fruit tree crotches, a natural binding is obtained by F. W. Duncombe of Beaumont. He selects a branch high up above the crotch, which points toward a limb on the opopsite side of the trunk, and winds it tightly with a branch from that limb, tieing the ends temporarily to prevent untwisting but not to choke sap flow. In a year's growth, these limbs graft themselves together. The same means was adopted successfully to hold two desirable limbs far enough apart.

BEE PRODUCTS.

Nine products, four direct and five indirect, are obtained from bees, say the entomologists of the Oregon Agricultural College. The direct products are silk, bee poison, beeswax and royal jelly, the food of the young bees. The indirect products are nectar, honey, pollen, bee-bread, propolis and honey-comb.

About 3,000 Valencia orange trees are to be planted this spring by C. C. Chapman of Fullerton.

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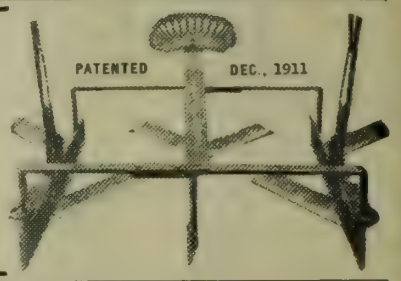
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BOX 18 FRESNO CALIF.

Military Precision in Frost Fighting.

(Continued from page 345.)

save trees and crop," says Mr. Little.

Thermometers Tested. — All thermometers are occasionally tested by a standard sensitive thermometer or in crushed ice. Incorrect registry is noted on a tag so corrections may be made in the readings.

"Cold weather is likely to occur Nov. 20 to Feb. 1 or later, usually between Dec. 15 and Jan. 10. The U. S. Weather Bureau telephones forecasts of the night's temperature; and when there is any chance of cold weather, a man is employed all night to watch temperatures on the coldest districts.

"If it is down to 35 degrees at midnight, the chances are that we will have to light up by 2 a. m. When it is down to 33 degrees we call up the men in charge of the cold districts and get some of the lighters to the various district headquarters. It takes 20 to 25 minutes after the men are called for them to report.

"As a rule we light up at 31 degrees, but if long cold seems likely, we would light at 32 degrees. As the bottom of a lot is generally colder than the top, we light the lower row of he coldest lot first, then alternate pots in alternate rows, making ¼ of the pots lit. As a rule, it raises the temperature 4 degrees. If this is not enough, another ¼ of the pots are lighted and so on, showing about what proportion will be needed in general. The blocks which have heavy bloom are most especially guarded.

"The few times we lighted showed us our faults and our possibilities, and how to handle the problems best, and we do not pretend to know all, but feel the extra expense of protecting the fruit and bloom is justified, and is another form of insurance.

THE STATE HIGHWAY.

Of the $18,000,000 bond issue voted for the construction of a State highway system, $13,746,396 has been distributed over 1320 miles of State highway, according to a statement made by State Highway Engineer A. B. Fletcher. Of the total, $11,591,188 represents contract payments and materials furnished; 84:32 per cent of the expenditure going directly into the road.

The cost of administration, technically known as "overhead" expense, including the cost of purchasing, auditing and disbursing departments, the engineering assistants at headquarters, the division engineers and their assistants and the clerical forces amounted to $604,926, or 4.41 per cent.

The balance of the expense of administration not included in technical "overhead" expense, which includes field work, drafting, resident engineer inspections and the like, makes up the balance of the gross overhead, or 11.26 per cent. Included in this additional expense of administration are surveys and maps for 850 miles of highway which have not been placed under contract.

According to the figures presented by Fletcher, the Highway Commission has available $3,647,678 to finish the work under way.

The Commission has available $1,500,000 with which to do new work.

PLANT LICE SPRAYS.

Sprays in common use against lice are tobacco sprays, oil sprays and soap sprays. Any one of these, say the entomologists of the Oregon Agricultural College, is efficient against all stages of aphids, but occasionally it is necessary to add a small amount of soap to the tobacco spray to secure proper spreading qualities.

According to the University of California there are 101 boy's high school agricultural clubs in the State this year. Last year there were 65.

Fertilizer Quality

When you buy fertilizer remember you are buying what is *in* the goods and not merely a weight of two thousand pounds.

When a smelter buys gold ore he buys not merely two thousand pounds but he insists on knowing how much gold is in the ore, and you should know the amount of active nitrogen, which is the gold of the fertilizer.

For further information write

DR. WILLIAM S. MYERS, Director
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THE "BOSS" TREE PROTECTOR



Made of Yucca Palm. Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frosts, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

Prices:

	Per 1000
10 in. long, 7 in. wide	$10.00
12 in. long, 7 in. wide	11.00
14 in. long, 7 in. wide	12.00
16 in. long, 7 in. wide	13.50
18 in. long, 7 in. wide	15.00
24 in. long, 7 in. wide	18.00
30 in. long, 7 in. wide	21.00

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Classified Advertisements.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

PRINTED STATIONERY—Hammermill bond letterheads, $3.00 per 1000; envelopes, $2.50; billheads, $2.75; business cards, $2.75; good work; sure to please you; mail order a specialty; samples free. G. C. Gallagher, the Service Printer, 309 Battery St., S. F.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

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BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds $3.00 delivered. Order with remittance. WM J. SCHROTH CO., 112-B Market St., San Francisco.

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PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

APPLES!—Buy direct from producer. Newtowns, 90c; Bulk pack, 4 and 4½ tiers, equal proportion. No. 2 grade for cooking, 65c. In 5 box lots 70c and 50c per box. Edwd. A. Hall, Watsonville, Cal.

IRRIGATION EQUIPMENT—For pumps, oil engines, gas engines, friction clutch pulleys, etc., write us. We can save you money. Commercial Iron Works, 481-497 Fifth St., San Francisco.

CONCRETE MIXERS—2 brand-new mixers at manufacturers prices. Write at once. Commercial Iron Works, 481-497 Fifth St., San Francisco.

ONE 45 H. P. and one 20 H. P. I. H. C. traction engine for sale, cheap. Will trade for stock. B. T. Brewster, Box 466, Davis, Cal

GAS ENGINE—25 H. P. Fairbanks Morse Vertical. Guaranteed perfect. Bargain. J. J. Pottinger, 189 2nd St., San Francisco.

SEEDS AND BULBS.

SOUDAN GRASS SEED—Guaranteed absoutely free from Johnson grass seeds. 30c per pound for less than 10 pounds., 27½c per lb. for 10 to 49 pounds; 25c per pound for 50 pounds or more. I pay postage or freight. John Silbersack, San Martin, Cal.

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GRAIN AND BEAN SEED—Three Money-Making Crops—Soudan Grass, Feterita, Tepary Beans. Buy now and secure first-class, authenticated seed from grower direct. Write for prices and instructions to Dittmar & Stahl, Ripon, San Joaquin county, Cal.

SEED BEANS—We have choice Red Mexican and Blackeyes grown on sandy land, producing a heavy crop. Well cleaned and in good order. Write for prices to THE GRANGE COMPANY, Modesto, California.

TEPARY BEAN SEED—Recleaned A No. 1 seed. None better on the market. Also Sudan Grass seed; guaranteed pure. Carl Nelson, Strathmore, Cal.

LIPPIA LAWNS—Best for California climate. Thrive where bluegrass dies. Ask U. C. experts. Write for booklet. J. F. Swett, Martinez, Cal.

TREES AND PLANTS.

WALNUT TREES — Late blight-resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California black root as the California Black root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

WALNUTS—Budded on California Black root; Franquette, Mayette, Concord, Eureka and other leading varieties. Extra fine stock. No better anywhere. Write for full particulars and prices. Woodbridge Walnut Nurseries, Motor Route B, Box 269, Modesto, Cal.

EUREKA WALNUTS ARE THE BEST.—Grafted on native black roots. Our prices will surprise you. Write today—tomorrow never comes. Geyer Bros., Walnut Nursery, 214 S. Alamansor St., Alhambra, Cal.

30,000 CITRUS TREES—Absolutely the finest ever grown by anyone anywhere at any price. All large two-year-old trees—Valencias, Navels, Grape Fruit 15c to 30c. In tree row according to quantity and variety. Lem A. Brunson 1120 Haas Bldg., Los Angeles. Phone F4003.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

FRUIT AND ORNAMENTAL TREES and all kind of nursery stock, especially suited to Central and Superior California conditions. Buy from a responsible firm. East Lawn Nurseries, Box 418, Sacramento.

NURSERY STOCK—None better. 2-year-old Navels, Valencias and Lemons, ⅝ and up, 25c, balled or packed in moss. Ask for prices on carload lots. J. C. Johnson, Azusa, Cal.

SOUDAN GRASS—We had the best seed at Denver Dry Exposition. Thirteen dollars per cwt. delivered. Order now. Amarillo Seed Co., Amarillo, Texas.

ACACIAS AND EUCALYPTUS—Most varieties, in cans 3 feet up. Fine stock. Any quantity. Write for prices. Ekstein Nursery, Modesto, Cal.

FOR SALE—Orange trees from selected two-year-old stock. K. Matsuoka, one mile west of Sanger, Cal.

FOR SALE OR EXCHANGE—1500 San Jose Mayette Grafted Walnuts. Six to ten feet. Price low or will exchange on light auto or good heavy team. Chas. Story, Rivera, Cal.

GRAFTED ENGLISH WALNUTS—A few hundred fine vigorous trees. Two-year-old California Black Walnut roots, one year Concord Walnut graft. Bishop Bros., San Ramon, Cal.

SUDAN GRASS—The dry land hay crop. Recleaned. Certified Seed. 10 lbs. $1; 25 lbs. $2; 50 lbs, $3.25; 100 lbs. $6. F. O. B. Lubbock, Texas, ACME SEED CO.

CITRUE, FIGS, PEACH AND APRICOT TREES—Also Thompson, Muscat, Emperor and Malaga rootings for sale at the Wood Ranch, two miles south of Del Rey. I. Takahashi.

SWEET POTATO PLANTS for April and May delivery. California Yams, $2.25 per thousand, 35c per hundred, prepaid. J. Braswell, R. D. No. 2, Lindsay, Cal.

SELECT LOCKEFORD BURBANK—Rural and American Wonder Seed Potatoes. $1.50 per 100. N. H. Locke Co., Lockeford, Cal.

SOUR ORANGE SEED grown in section free from citrus canker, guaranteed fresh. Dr. L. A. Shattuck, Leesburg, Florida.

TEPARY BEANS FOR SALE—Eight cents per pound. Robert Paulsen, Lockewood, Cal.

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FOR SALE—Spineless Cactus Plants. Prices right. B. C. Engbert, Byron, Cal.

WANTED.

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. R. Humphrey, Principal. Stockton Cal., Box 704.

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WANTED—Position as manager of large orchard, vineyard, dairy, alfalfa and grain farming by a man with many years of practical California experience. Reference. Room 55, Overland House, San Francisco.

RANCH SUPERINTENDENT—Experienced in developing and handling large tracts under irrigation, desires location on salary or percentage. M. W. Russell, 1516 1st Ave., Seattle, Wash.

DAIRYMAN WANTED to take charge of a 30-cow dairy in Yolo county on shares. A good milker and feeder is desired. W. H. Donaldson, Esparto, Cal.

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NEW OPENINGS—Enlraged Homesteads. Nearly TWO MILLION acres GOVERNMENT LAND, different counties, plainly marked on COUNTY SECTIONAL Maps, $2.50, any County. Booklet, map, circular FREE. STATE MAP, showing 600,000 acres of SCHOOL land opening over State, $2.50. Order TODAY. Checks taken. JOSEPH CLARK, Sacramento.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg, Minneapolis, Minn.

FOR RENT OR LEASE—Ranch exceptionally adapted for cattle or sheep, 2000 acres controlling about 20,000 acres outside free range, Lassen County. Rental and price reasonable. Address R. H. Cross, Mills Bldg., San Francisco.

116 ACRES AT GRIDLEY, CAL.—All in alfalfa. Abundance of water and shade trees. Splendidly drained. Good improvements. Absolutely right and high-class. Owner, Paul Goodloe, Route 13, Box 28, Gridley, Cal.

FOR SALE—Equity in 15 acres alfalfa land in Merced county. Would exchange for automobile or live stock. J. F. Herbert, 812 Spencer Ave., Santa Rosa, Cal.

160 ACRES near railway, well improved, on county road, suitable for small dairy or stock ranch. Good local market. A. O. Nelson, Raymond, Cal.

A BARGAIN in Olive, Orange, English Walnut trees and Thompson vines at Central Nursery, Route 8, Tulare St., Fresno, Cal. T. Kimura.

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HIGH GRADE CITRUS TREES

Oranges Lemons Grape Fruit

We have spent our entire life growing citrus trees. You cannot buy better citrus trees than we offer you. All trees from stock of 1 and 2 year buds, selected with greatest care, and taken from our own grove. Our nursery is located in a clean district—our trees absolutely ree from insect pests, 5-8 and up, guaranteed **TRUE-TO-NAME.** You cannot beat our prices for quality stock.

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Large Stock of Field Grown, Clean, Thrifty Trees. Guaranteed True to Name.
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Superior Garden, Flower, Tree and Palm Seeds. Roses, Flowering Plants and Trees. Everything for the California Garden. Write for 1916 Catalog.

Theodore Payne

345 S. Main St., Los Angeles.

Cured Fruit of the Standard Prune.

To the Editor: I am sending you a sample of Luther Burbank's Standard prune. I had a few tons of them dried this year and the whole crop averaged 32 to the pound dried. I have sent many samples to prominent growers in this State and Oregon and they all say they were the finest prunes they ever saw.

I see by the Rural Press that Mr. Swett of Martinez speaks very discouragingly about them. I think he must have them on very poor land and his trees not pruned and not well cultivated.

I sent samples to a well-known judge in San Jose, who is well posted on prunes. He answered and said that he did not want to be disloyal to Santa Clara Valley, but would say the sample of Standard prunes I sent him were the finest prunes he ever saw. How do you like them? **H. A. Bassford.**

Vacaville.

[It is not safe to base definite general conclusions on a single specimen of a product, and therefore we do not know how far the comments we make on Mr. Bassford's sample will be true, and they are therefore subject to revision. The prunes are large, of good color and finish. The next thing noticeable is that the skin is very finely wrinkled all over and does not retain considerable areas of smooth skin as a French prune does when it collapses under loss of moisture. This gives the fruit an unusual appearance from the prune point of view. The skin aspect is rather that of a wrinkled shriveled apple than that of a prune. When the fruit is eaten (after being soaked and gently cooked in the proper way) the flesh is found to consist largely of a stringy mass with a flavor, first, that of a partly dried plum and then a slight taste of fermentation. The stringy mass yield's only partly to mastication and has to be gulped down. The flesh characters and flavors thus indicated are very different from those of the French prune and much less desirable. In fact, our personal impression is that if we give the people such prunes for stewing, they will be satisfied with few of them. The pit is smaller and smoother than that of the sugar prune, but is still a coarse pit as compared with that of the French prune. But such a prune as Mr. Bassford shows will undoubtedly sell for a high price for no one knows how long.—Eds.]

THINKS HE WILL HOLD UP THE STANDARD.

To the Editor: I wrote you a few weeks ago a report of an unsatisfactory test of Standard prunes in Contra Costa county.

A few days ago I was surprised and delighted to receive from Mr. Henry Bassford of Vacaville, a small box of dried Standard prunes that are certainly attractive. They are large, running about 32 to the pound, sweet, delicate in texture, and glossy black in color. If they cook up well, it would indicate that the variety may prove of much value.

With California's wide variations in soils and climates, a variety may be very valuable in one place, and of little value in another place. I hope Mr. Bassford will write the Rural Press and tell of the conditions under which his Standard prunes are grown; soil, stock on which grafted, age of trees, time of ripening as compared with French, and also, last but not least, how these prunes were dipped and dried, for in skilful handling lies much of success or failure. But the test of a prune is not in the complexion nor in its eating qualities, raw. If I can secure a sample large enough to cook—then will come the real test. It may cook up badly; it may cook up well; but, unless, when cooked, it equals the French prune, then its value is dubious.

I shall suspend judgment on the three acres of young Standards, whose heads I was about to amputate I had planted three acres of Standard prunes, and after hearing my neighbor's experience with them, I had almost made up my mind to bud them over to some other variety. And I'm grateful to Mr. Bassford for a year's respite to my 300 Standards. **Frank T. Swett,**

County Horticultural Commissioner, Contra Costa County.

Martinez.

A report from Marysville states that the owners of the Mission Olive Acres, a 4500-acre tract of land, will be set to olives, oranges and other citrus fruits.

10,000 ACRES

of cowpeas were treated with our culture of cowpea bacteria in a state wide test in South Carolina last year. Results were stupendous. Over ninety per cent. of the farmers reported from twenty five to

100% INCREASE

over untreated crops. Most of this soil was already producing fair crops and supposed to be well supplied with bacteria—proving that the carefully selected high bred germs in

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are more effective, more active and produce better results than native soil bacteria. What South Carolina did, you can do Not only on Cowpeas, but on ALL LEGUMES—Peas, Beans, Alfalfa, Clover, Vetch, Soy Beans. You can double your crop for

ONLY $2 Per ACRE

5 acre size bottle $6. A 5 acre size bottle means 5,000 lbs. of Nitrate Nitrogen to enrich your soil. Bought as

NITRATE of SODA

the price of which has advanced as a result of the war the cost to you would be $200.00 at the rate of

$40 Per ACRE

Not only as a matter of absolute economy, but in order to get the most and best crops out of your soil, inoculate your seeds with FARMOGERM. Proof of these statements, and the "Legume Grower," our book on growing profitable crops and building up soils, sent free. Write to day. Interesting and very instructive reading you should have.

1 acre $2.00—5 acre size bottle $6.00
50 acres (in 5 acre size bottles) $55.
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Garden size 50c. At all seed stores or direct from

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For street, roadside or lawn.
For shade, ornament or windbreak.
For coast, valley, or desert.
Tall or spreading.
Fast or slow.
Single specimens or hundred lots.
A pine for every purpose and every place.
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Write us you needs, and let us suggest.
Ask for catalogue.

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Extra choice Trees at lowest prices.
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1941 E. Colorado St.
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Bartlett Pears

on blight resistant roots.
French and Imperial Prune on Myroholan. Mission Olives on Picholine root.
Write for Price List. Selling fast—don't delay.
UNITED FRUIT COMPANY,
NEWCASTLE, CALIFORNIA

The Fresno Nursery Company, Inc.

Is it your intention to plant nursery stock this season? In placing your order with us, for whatever you may need, you are assured the very highest grade of stock, we having pleased our many customers the past twenty-eight years by giving them RELIABILITY, QUALITY, SERVICE.

We Have a Large Assortment of

APPLES, PEARS, CHERRIES, PLUMS, PRUNES, APRICOTS, PEACHES, ALMONDS, FIGS, WALNUTS AND CITRUS TREES.

Also a nice stock of ORNAMENTALS on which we would be more than pleased to quote your prices.

Catalog and Prices Mailed You on Request.

P. O. Box 615, Fresno, Cal.

PLUMS Orchardists are a good deal like sheep—they all move in the same direction at once. For instance, last summer Plums were cheap. This year nobody plants Plums. Just for that reason, this is a good time to plant Plums. Surplus trees, magnificent quality, prices cheaper than they are ever likely to be again. **Use your head.** Plums are steady regular, reliable. Investigate the new sorts. Prize, Beauty, Gaviota, Santa Rosa, Duarte and others, and write for special prices for Orchard planting.

FIGS The Best all-around Fig is White Pacific (identical with Kadota). Needs no Caprification, and ripens deliciously sweet, both on the coast and the interior. We can offer a splendid stock of all sizes, and some special bargains for Orchard planting.

MAMMOTH BLACK-BERRIES Extra cheap prices on extra strong plants. Write us how many you can use, and get special rates. Also lots of Himalaya on hand, as well as a good stock of St. Regis Everbearing and other Raspberries. Five kinds of Strawberries. Ask for "The Catalogue that Tells the Truth."

Pioneer Nursery

DEPT. R, MONROVIA, CALIF.

USE NATURAL FERTILIZERS--- DON'T ROB THE SOIL.

Put back into the ground at least a portion of the natural elements you take out of it.

Use Hauser's Organic Fertilizers.

HIGH GRADE.
Ground Tankage—Dried Blood.
Fine Blood Meal—Bone Meal.
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Commercial Fertilizer..4-10-2
Commercial Fertilizer..5-10-5

Nitrogen and Phosphoric Acid derived from organic sources only. Carloads or less. Write for prices and list of satisfied customers who will give references as to results from the application of natural fertilizers.

We will put up any formula to order for any special requirement. Send for booklet "Good Reasons," tells you why "Natural Fertilizers" fertilize and return you many times the money spent for this unexcelled plant and tree food.

"Plant" a few dollars in Hauser's Organic Fertilizers and reap hundreds in profits.

Hauser Packing Company

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CITRUS TREES

at less than cost of production. Late Valencias, Navel, Grape Fruit, Eureka Lemon, guaranteed quality name. Special inducement to Nurserymen. Mission Nurseries, adjoining old Mission Grounds, San Fernando, Cal. Phones, San Fernando, Red 1053; Los Angeles, Main 9341; Home 60288.

HAZELTINE & CRONEMILLER, Proprietors.

KILL THE BUGS A full line of Sprayers and Spraying Material, both liquid and powder. Spraying Calender FREE. Also our Seed and Plant Catalogue—full of "Hints on Gardening"—FREE.

MORRIS & SNOW SEED CO.

439 S. Main Street, Los Angeles, Cal.

Beekeepers' Supplies Everything for the Honey-Bee

Catalogue sent free on request.

THE A. I. ROOT CO. 245 Mission Street, San Francisco, Cal.

California Garden Flowers $1.50 Postpaid Pacific Rural Press

A crop is often injured by the use of improperly mixed fertilizer or by fertilizers that contain too much of any particular element.

Gold Bear

Fertilizers are prepared by men who know what's what in fertilizers.

There is a booklet on fertilizers we would like to send you. Write for it.

PURE ANIMAL MATTER AMMONIATES

GOLD BEAR TRADE MARK FERTILIZERS

FOR CALIFORNIA SOILS

WESTERN MEAT COMPANY

704 Townsend St. San Francisco

DELTA PRODUCERS TO ORGANIZE.

A well attended meeting of fruit and vegetable growers of the Delta section around Stockton was held under the direction of State Market Director Weinstock at San Francisco last week.

Mr. Weinstock made it plain to the growers that in his official capacity he could do very little for them as individuals, but if they would combine their products into a selling organization he could do much. By efficient organization the markets could be kept free of glutting and products be properly standardized. He stated that a movement was on foot to provide proper facilities for handling perishable products for the San Francisco markets at auction, and if the growers would organize they could take advantage of the chance to bring buyers and sellers together and the best produce would command the highest prices.

A set of resolutions were adopted pledging those who signed them to organize the strongest possible producers' association, and the Market Director is to appoint an organization committee of five.

WILLOW BORERS.

To the Editor: I have a weeping willow tree that is bothered with some kind of a borer or worm, in the crown. Can you give me a remedy? —W. S., Hughson.

[We cannot prescribe definitely without knowing more of the nature of the insect with which you have to deal. It may be too small to follow up and kill or it may be large enough so that you can cut it out with a knife or kill by punching a wire into his burrow. If we are obliged to prescribe without more knowledge we would advise to cover the crown or base of the tree, all over the rough bark, with asphaltum Grade D in the expectation of holding in the present inmates so they could not emerge to lay more eggs and to exclude all other hatchings from eggs which wandering outsiders may deposit. This band of asphaltum should begin say six inches above the ground surface and extend six inches below—as is done in the cases of root borers which affect fruit trees growing on peach roots.—Eds.]

TO KILL WILLOW SPROUTS.

To the Editor: Is there any way to kill willows except by everlasting grubbing? Where the roots are cut they sprout up so badly.—E. C. H., Turlock.

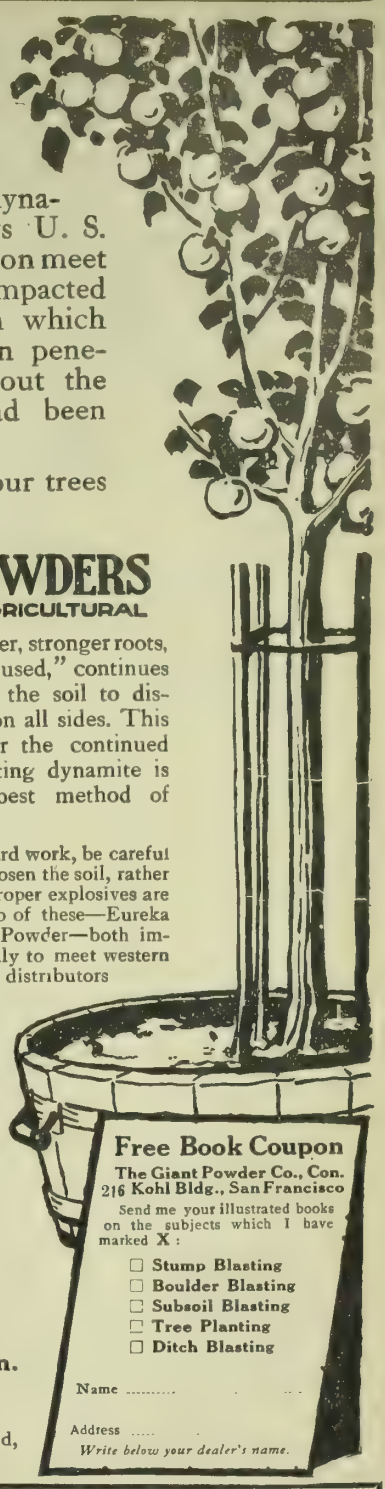
[Willow sprouts can be killed by pouring a little gasoline close to the base where it will follow down to the root, but it is an expensive method. Grubbing out deeply is the common way.—Eds.]

SUDAN ON ADOBE.

To the Editor: Will adobe land be suitable for Sudan grass, and what is the best time to sow? Answer through our (not your) paper. —A Subscriber, Morgan Hill.

[Sudan grass will grow on any kind of land which will grow anything, so long as there is no frost. Plow and harrow while the land is in good condition and sow when you consider it safe to plant corn.—Eds.]

Would you plant your fruit trees in large tubs?



"Without the use of dynamite in tree-planting," says U. S. Bulletin No. 38, "the roots soon meet with the smooth and compacted sides of the hole, through which they have great difficulty in penetrating. The tree is in about the same situation as if it had been planted in a large tub."

But when you plant your trees in holes blasted with

GIANT FARM POWDERS
STUMPING — AGRICULTURAL

the trees will grow faster, develop deeper, stronger roots, and bear earlier. "When dynamite is used," continues the bulletin, "cracks are formed in the soil to distances of five or sometimes six feet on all sides. This makes the very best conditions for the continued growth of the tree. For tree planting dynamite is recommended confidently as the best method of preparing the soil."

In selecting explosives for your orchard work, be careful to get those that will crack, powder and loosen the soil, rather than pack it or throw it in the air. The proper explosives are the Giant Farm Powders. There are two of these—Eureka Stumping Powder and Giant Stumping Powder—both improved forms of dynamite, made especially to meet western agricultural conditions. They are sold by distributors everywhere. Ask your dealer for them.

Book, "Better Orchard Tillage," FREE

Mail the Coupon Today

Practical, helpful, valuable information on improved methods of planting and cultivating fruit trees is contained in our illustrated book, "Better Orchard Tillage." This book and others on stump blasting, subsoiling, ditching and boulder blasting are free. Choose the books that you want and mark and mail the coupon.

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J. C. LOOMIS - - Assistant Editor

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., March 14, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	0	32.06	34.91	62	38
Red Bluff	0	19.04	19.41	88	40
Sacramento	0	17.80	15.39	80	46
San Francisco	0	26.51	18.09	77	50
San Jose	0	15.40	13.26	82	38
Fresno	0	10.78	7.28	86	46
Independence	0	7.14	7.11	80	..
San Luis Obispo	0	25.62	15.83	92	48
Los Angeles	0	18.99	12.49	96	52
San Diego	0	11.97	8.01	80	54

THE WEEK

"WHAT TO DO FOR RURAL CREDIT?"

WE GAVE a lukewarm answer to the question, "What to Do for Rural Credit?" in our last issue, because the measure we then had in mind was so short a step in the right direction that it seemed doubtfully worth while to take it at all. Since our last issue we have received an outline of a measure which goes farther and should be supported by those who are seeking rural credit in the public interest. It appears that the earlier measure, which came from a joint House-and-Senate committee last January and was patted on the back as safe and sane by stand-pat economists, pleased nobody else but them, and was scouted by farmers' organizations at the East as not acceptable as a redemption of the administration's promises in the rural credit line. And so modifications and extensions were framed by the Senate committee in the hope of filling this deeply felt, political want. This is the measure, of which an outline is given on another page of this issue. No one can say what chances it has, but it may be easily imagined that it has no chances at all unless it is strongly supported by those who favor rural credit provisions which really provide something, and it must clearly appear that it has a demand among the farmers, to whom it will give a way to use their credit for the support of their industry.

IT WILL HELP EVERYBODY.

OF COURSE this bill will be opposed as class legislation, but is only class legislation in the sense that it gives the debtor class a chance to meet its obligations and its needs, fairly to itself. The March issue of the Journal of the American Bankers' Association has this comment upon the bill we are approving:

It converts the government into a farm loan agency with the obvious result—if not the purpose—of competing with all existing plans of making farm loans and of destroying individual initiative and opportunity. It creates a favored class, and the correction of the idea of favoritism will not be found in the repeal or modification of this provision, but in the gradual inclusion of other classes in other favors of similar import.

Judging by the context from which this quotation is taken, the point made is intended to be adversely critical, but it appeals to us as one of the strongest arguments for rural credit that can be made. It seems to be an apprehension that if the farmers get this chance to assemble their security for credit at fair rates, other borrowers will in some way do the same. Well, why not? This apprehension justifies our suggestion that the only class legislation involved is justice to the debtor class as against the creditor class, which has thus far enjoyed advantage beyond sound public and private interest. It becomes then class legislation in the sense of evening-up benefits and advantages between all classes, and particularly between the great debtor and creditor classes—both of which include men of all interests and occupations. And there is another aspect, perhaps a more superficial one, in which usable credit at fair rates helps everybody. It increases production; multiplies the demand for manufactures and supplies used in production, and gives new purchasing power to secure them; it opens wide new fields for trade, transportation and national influence; it solves problems of unemployment, and lifts everybody to a higher level of comfort and satisfaction in living—and, what should win the support of the capitalistic and money-handling vocations to it, it will keep more money constantly and profitably busy. As it now is, one-half (or some other fraction which we do not know) is practically locked up so that the balance can struggle for a high rate of interest. As it ought to be, all the money should be busy, yielding less for the dollar, but more for the mass, to the owners of it. This is no dream; it is a demonstration. Before the war, practically all continental European countries had rural credit provisions like that now proposed for this country, and have still the results they achieved as an important element of their fighting strength. The old-line banks fought them at first and prophesied disaster. A few years later they ceased to fight rural credit associations, and began to use them. They found them secure and a good line of activity for their idle money. With little increase of over-head and without interference with their old methods and policies, these banks quietly slipped millions into rural credit channels and increased their net earnings notably. It will work just the same in this country as soon as the conservatives recover from the shock of the pending operation. The American Bankers' Journal is perfectly right; there will be a "gradual inclusion of other classes in other favors of similar import," and the banks will make lots more money out of money, although our contemporary shivers at an apparition the beneficent purposes and practices of which he does not understand.

BRITISH EXCLUSION OF OUR FRUITS.

THE British order against the admission of our fruits, which was rather dimly descried in our last issue, has now become more clear. It is "an order in council" manifested by royal proclamation forbidding, after March 3 or March 13 (there is still doubt about the date), the importation of "canned, bottled, dried and preserved fruits, except currants," but such products from dominions and the colonies are exempted from the order, as likewise are "any fruits imported under license given by the board of trade." Cargoes enroute before the right March date will be admitted. As to the reason for this exclusion of our fruits it is said that the order comes because of the "blacklist" under the oft-repeated British claim of "trading with the enemy." If this is true, a little return to "twisting the lion's tail," which was so popular a pastime half a century ago, would not be amiss. We could easily make him roar that way—but let that go for the present.

With the official action noted above there comes to local dealers from their London brokers this statement: "The British government will, on October 31, state what of the 1916 American crop they will take, and indicate that it will not exceed 50 per cent of the normal demand." If that is from the government, it is a pure bluff; they will take what the people of England demand and can pay for. The British government is not strong enough to go against the popular cry for good food, and there is no reason why even a stronger government should do it. It is not an English policy. In fact, it is something which the British nation claims to be fighting against.

WHAT SHOULD BE DONE ABOUT EXCLUSION.

THE thing manifestly best for our affected fruit industries to do is to keep a cool head. The shock comes at the best possible time of the year to fight demoralization by investigation, calculation and co-operation. In the first place the continuation of the war, upon which the exclusion seems to be based, is not at all sure. Personally, we believe it will be over before our fruit ripens, because of the sheer heart-sickness of the belligerent people and the poverty of their governments. Then it will be a rush for whatever indulgence in food money can be found for; and the flavor, wholesomeness and cheapness of our dried fruits will commend them. If England does not wish so much of them Germany will desire more and Germany has been upon a prescribed and restricted diet so long that her people will be ravenous for something good. But suppose the war does go on, it does not follow that British fruit exclusion will; it may drop any time at a touch of diplomacy. If we should threaten them a little less of munitions they would be willing to take a good deal more food. So it is important for the grower to realize that the whole thing is a pawn in the war-game and not to be demoralized by it.

At the same time it is important for the producers to do everything that it would seem wise to do if there were no escape from exclusion, either by removal of it or by diversion of supplies to other foreign consumers. Let them get together and dig up wisdom. Let them accumulate force for defense and for aggression by co-operative organization. Is it not humiliating that the call upon the Washington government for a protest against adverse British discrimination is so far apparently going only from fruit dealers? What are the growers voting and paying taxes for? Don't go back in the corral and moan; get out on the highway and yell!

Then, too, get busier on co-operative selling. Tell Col. Weinstock to placard every large American town with your fruit sales. Americans could and would eat all your stuff, anyway, if they knew how good and cheap it really is. Don't get rattled; do something! If you cannot think of anything else, go out and fight the British by plugging firewood against the barn door. It will make you feel better and ready for something more reasonable.

THE BLUFF ON BARLEY AND HOPS.

TO GET fuller conviction that this dried fruit exclusion is only an incident in the war game, as just claimed, see what has happened to the barley-and-hop exclusion which was recently threatened. E. Clemens Horst, our leading Californian in these lines, reports receiving London advices, carrying assurance that the United Kingdom was unlikely to place an embargo on imported barley and hops. It seems, as we stated some weeks ago, that exclusion of brewery supplies was proposed first and afterwards shifted to fruits—which probably means that the government concludes that the people can get more comfort from beer than from prunes. This conjecture seems to be supported by Mr. Horst, who recently said: "The person who sent the cable is in touch with a member of the British Parliament, and is, therefore, enabled to feel the pulse of that body regarding a barley and hops embargo." This being the case, we hand over the whole British governmental outfit, from George to Tommy, to our prohibition readers—remarking that we do not care what they do to them.

POULTRY IN "THE HOUSEHOLD."

OUR poultry department, which the reader always finds farther along in each issue, is so well endowed by President Croley and Madame Swaysgood that the editor seldom has more to do than cast admiring glances upon it. Once in a while, however, there arises a great issue in the poultry department of our general social life that requires a leading comment. Just now it occurs to us that it may indeed be in the poultry yard that the great issues of feminism and masculinism, which are now vexing the whole world, must actually be fought out, for all the conflicting rights of the sexes are represented in it. This statement does not admit of argument, but invites concrete illustration. Last week in Oakland there was filed a divorce complaint by Helen M. Hawthorne against Francis A. Hawthorne, a Mendocino county rancher. She claims that Hawthorne forced her to keep his turkeys in the warm kitchen. She declares that three hundred turkeys in one kitchen, and live ones at that, are too many, and she says to him, "No"—in great scarlet letters. About the same date in San Mateo county Hans J. Toft brought a suit for divorce on the ground that his wife was a great chicken fancier, taking such a fancy to chickens that she has been giving them more liberties about the house and paying more attention to them than to her husband. He admits that chickens may be all right in their place, but have no proper title to roost on the back of dining-room chairs. Toft admits also that incubators may well be considered indispensable—but resolutely refuses to move his bed to make room for any more of them. And over both these cases there has arisen a great crowing and cackling in the courts.

Queries and Replies.

Querists must give name and address.

Treatment of Apple Grafts.

To the Editor: I have two-year-old apple grafts which were cut back last winter and again summer-pruned last summer. They have made a growth of 4 to 6 feet since the summer pruning. Should they be cut back now or merely thinned out and shaped and allowed to continue their growth?—P. P. W., Little Rock.

We presume these are top-grafts on an old tree. If so, we should both thin, shape and cut back once more for fear such strong growth might catch too much wind-stress and blow out. Smooth the stump at the base of the graft so that good growing over may be facilitated and keep exposed wood of stump painted lightly, so the graft may have a sound stump to grow over. If, however, you refer to low grafts on young roots which are to make tree trunks, removing surplus shoots for shape may be all the pruning needed this winter.

Peach Blight in Lake County.

To the Editor: I am sending you peach twigs infected with some disease and would like to know what it is. The twigs are from old trees. I have some young trees affected the same way, only not so badly. While the trees showed the disease it has developed rapidly since they were pruned in December.—E. T. S., Upper Lake.

It is a very characteristic case of "peach blight." The killing of the bark of the new wood in spots and patches and glistening exudation are the result of the progress of the fungus since the leaves fell. It is to prevent this serious injury that spraying with Bordeaux or lime-sulphur should be done not later than December 15, or immediately after pruning if pruning is finished earlier than that.

About Tomatoes.

To the Editor: In setting out tomato plants, is it best to put manure in the hill or spread it on top of the entire piece and harrow it in? The soil is the red heavy hard-pan kind that bakes very easily. Also advise me as to the best way of pruning the plants to get the best fruit.—C. A. S., Fresno.

We would use no manure in the hill but apply it broadly over the land and work it in during the winter preceding the tomato planting. Tomatoes, however, are not most fruitful in soil which is too moist or rich, and direct manuring of them is not desirable unless the soil is very poor. If the number of plants you are growing is not too great we should mulch around them with broken straw or other litter to keep the soil from surface baking, and only enough to keep the plants growing slowly. In a deep light soil with a fair amount of subsoil moisture they will bear better without irrigation—but of course they must not be allowed to get too dry. Pruning is seldom done. With strong-growing plants, allowing four or five branches, removing low side shoots and cutting away the top a few inches above the highest blossom cluster, often promotes the setting and development of the fruit.

Corn and Cow Peas.

To the Editor: I have been reading in an eastern paper about corn and cow-peas being raised in the same field. The corn is planted in rows seven feet apart and the rows of peas half way between. It is stated that more corn has been raised per acre than in adjoining fields where corn is planted three and one-half feet apart and no peas. Of course the peas are leguminous and supply nitrogen to the soil, but it does not seem as if this should help the growing corn. Is there a market for cow peas?—K. O. P., Orland.

It is true that a growing legume supplies nitrogen and improves the growth of another adjacent plant while both are growing. We do not know the exact measure of that help but we must doubt that it would make one row of corn do the work of two rows—cultivation and moisture being the same in both cases. Try it and you can tell us something about it. The cow pea which is largely grown in this State under the name "black-eye bean" sells well. Other cow peas are not largely grown, but are in demand as seed for green manure crops to a certain extent.

Clean Ground for Nursery Stock.

To the Editor: I am thinking of setting out some myrobolan seedlings on a piece of ground from which old neglected prune trees were removed this winter by a tree puller. An occasional tree displayed root knot. Would this ground be a possible source of infection to young nursery stock? As the old roots were all pulled from the soil, would the disease still remain? Would excellent care of nursery stock help resist infection if such infection is possible under condition mentioned?—Planter, S. F.

Although we might not hesitate to replant orchard on the ground you describe, changing the rows so as to plant in the old middles, we would not think of planting nursery on such ground, if we could find new land which has had neither orchard nor nursery stock for a few years. Avoiding the chance of root knot is only one of several reasons for getting new land. Of course you are not sure to be free of root knot on new land, but the chances are certainly worth seeking. No amount of care nor any kind of treatment has been demonstrated to be successful in preventing the trouble.

Watermelons and Piemelons.

To the Editor: Will a volunteer melon patch eventually produce the citron, a so-called pest? Is it best to secure melon seeds each season from a dealer, or to use the same seeds each season and thereby avoid the chance of producing citrons?—R. L. W., Fresno.

We never saw just the transformation from watermelon to piemelon (citron), which you describe, but we should rather expect to see it, for both melons are of the same species, and the piemelon is the more permanent form, and others would be apt to revert to it. To get the best watermelons you should buy seed each year from a seed grower who has a reputation to preserve, and therefore keeps his plants beyond cross-pollination, and takes seed from none but the best specimens of the true type of the variety he is growing; or you must grow and select your own seed in the same way that a good professional seed-grower does. If you take seed from misshapen specimens which will not sell or from those left over at the end of the season, your melons will get poorer and poorer. The same will be true if you buy seed without assurance that they have been properly selected. If there are piemelons growing within flight of bees you are likely to keep getting nearer to a piemelon. Whether you will get there without crossing with the piemelon we do not know.

Mechanical Power on the Farm.

CARE OF THE AUTO ENGINE.

[By L. B. Weyman.]

To secure satisfactory work from an automobile engine, attention must be given to at least four particular points. The carburetor must be properly adjusted, the combustion chamber free of carbon, the spark plugs must be in good condition and oil should be reasonably fresh and clean. Now, all of these points can be attended to by the owner or user, provided he has the disposition to do so—technical skill is not at all necessary, especially with a machine constructed as simply as the 1916 Overland.

The first and most important point, of course, is the adjustment of the carburetor, which should be so adjusted that the mixture will not be too rich or two lean. The proper mixture is one that is just as lean as possible, as a thin mixture is faster and more powerful than a rich mixture. All that is necessary is to thin out the mixture by increasing the air or cutting down on the gasoline supply until you arrive at a condition where with a cold engine there would be a sneezing or coughing in the carburetor, which symptom will pass away as soon as the engine is warm. This is a very easy adjustment for any one to make.

The next important point is to keep the carbon out of the combustion chamber, and this is also very easily attended to by any one by scraping the carbon loose with carbon scrapers, which can be secured from any supply store, and blowing the loose carbon out of the valve domes, or the valve caps, with a foot pump, bellows or compressed air. The only point to be careful about is to see that the bottom valves are shut, so that none of the loose carbon will get under one of the valve seats.

To insure the piston being in firing position, proceed as follows: Remove the valve caps or domes from No. 1 cylinder, open the pet cocks in the other cylinders, crank the engine over by hand and watch the inlet valve until it rises and then seats.

The next time the piston comes to the top it will be in firing position and both valves are shut with the piston anywhere near the top. With the piston at the top, or within one-fourth of an inch of the top of the stroke, go in with your set of three carbon scrapers and scrape the carbon loose and blow it out as above directed. Screw in the valve domes and pass on to the next cylinder, working on one cylinder at a time.

To see that spark plugs are right, there must be no cracked porcelain.

The spark plug must be reasonably clean, and the important point is that the spark plug points must be 1-32d of an inch apart. Spark plugs should be occasionally inspected as to the spark gap, because this distance is sometimes increased by the slow burning away of the spark plug wires from the action of the electric spark.

The oil in the engine crank case should be drained off every 1000 miles and the crank case washed out with kerosene and fresh oil supplied. After draining off the old oil, close the drain plug and put one gallon of kerosene in the crank case, start the engine and run it for a minute, and then drain off the kerosene and fill the engine with fresh oil. As stated, this should be done every 1000 miles, because after the oil has been splashed around in the engine for that distance there is very little oil to it and it is more like dirty water than oil.

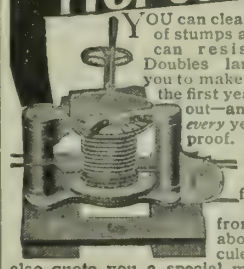
DRY CELL TESTER NEEDED.

[Written for Pacific Rural Press.]

How an automobile helped a tractor is told in regard to W. S. Herring of Puente who had worked half a day to get his Samson tractor started. At last he found that the trouble was in the batteries. His wife took a flying trip several miles to town in their auto, returned with new batteries, and the tractor was soon busy plowing up an orchard.

This suggests the need of a little

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YOU can clear an acre or more of stumps a day. No stumps can resist the Hercules. Doubles land value—enables you to make $1200.00 on 40 acres the first year after stumps are out—and $750.00 in crops *every* year after. Get the proof. Why not

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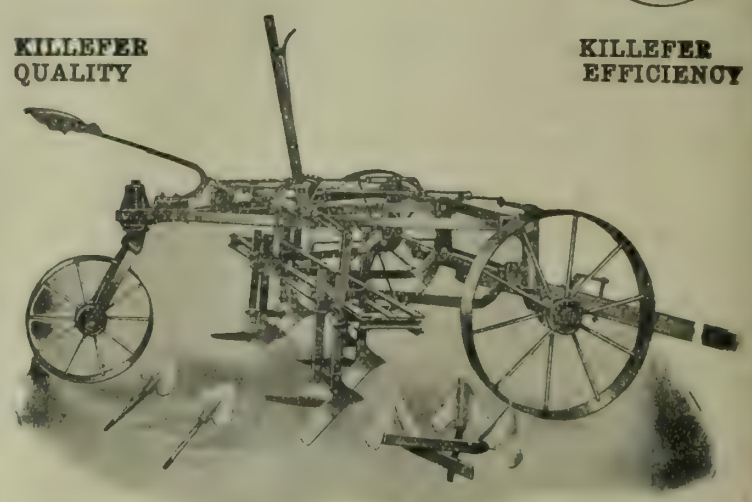
Book tells all the facts—shows many photos and letters from owners—tells all about the many Hercules features. We'll also quote you a special money-saving price proposition that *will interest you.* Address

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Beet Cultivator (K)

KILLEFER QUALITY **KILLEFER EFFICIENCY**

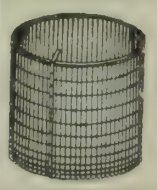


The frame of this Cultivator is made of one continuous piece of high carbon steel with a truss connecting it to the main castings, supporting the two steering wheels. This construction makes a cultivator that is almost impossible to break down in the center and in consequence the wheels are always in line and under easy control.

The lower frame or tooth bar is from the same quality of steel with a strong arm at each end, which connects with the lifting rod, allowing no chance for the frame to dip or run deeper at the ends. The seat is set back far enough to give an unobstructed view of the rows. The foot control of the front wheels is adjustable with a turn-buckle for taking up wear, and is very easy on the operator. A lock is provided for the rear wheel that holds it rigidly in line except on the turns. This is the **strongest** and **best made** Beet Cultivator for sale on the Pacific Coast.

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Ground Carbonate of LIME

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Send for Bulletin and Prices.

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Balboa Bldg., San Francisco.

P. & O. No. 40 Combined Corn and Bean Planter



Furnished with open center or solid concave tires.

The Combined Corn and Bean Planter here illustrated is a machine built by one of the largest manufacturers of planters in the world, particularly to meet the requirements of the Pacific Coast trade.

It is not a made-over machine but is built from the ground up for Coast needs. This fact, together with the reputation of the P. & O. Company for building tools right in every detail, insures absolute satisfaction to every user of this planter.

It's the Way They are Built

FEATURES:

Equipped with a full set of plates for planting any of the different kinds of corn or beans commonly planted in California, including Egyptian and Kaffir corn.

Adjustable to any width rows from 28 to 44 inch. The check rower machine is adjustable for checking rows 3 ft. 4 in., 3 ft. 6 in., and 3 ft. 8 in.

Accurate planting insured by the sight feed. Sight feed has a large opening, and the seed is visible at all times to the operator as it drops from the hopper to the upper valve.

Quick, detachable runners held on the shank by one bolt. Easily removed for sharpening.

Write for descriptive circular and address of nearest agent.

Baker & Hamilton

San Francisco, - Cal.

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Diameter in Inches { Driving Pulley ..... / Driven Pulley .....

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Width of Belt ..... Ply

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Larger than runway; jaws pull rodent in; catches large or small gopher and holds it. Farmers say it's worth dozen other makes. Big sales. **Price 50c.** If not at your dealer's will send it to you postpaid; 2 for 95c; 6 for $2.70; 12 for $5.10. Money back if you are not satisfied. Free circulars.
E. J. Chubbuck Co., Dept. B San Francisco, Cal.

instrument to test the current generated by a dry cell. When touched to both poles of the cell it indicates the number of amperes of electricity. A good cell should generate 30 amperes.

A dead cell in the battery reduces the efficiency of all the rest. This was shown recently when R. L. Rice of Los Angeles had trouble with his automobile. It missed so many explosions that he was afraid to start on a pleasure trip. Test with the instrument caused one dead cell to be thrown out, and though no new one was added, the trip was made with practically no misfiring.

CARBURETION.

The office of the carburetor is to mix air with liquid fuel as it comes from the fuel tank. This vapor then enters the cylinders, where, being highly combustible, it burns with great rapidity when ignited by the electric spark and gives force to the pistons and so on.

Progress of Carburetion.—The fuel as it comes from the fuel tank is a liquid. This liquid fuel enters the carburetor through the admission valve. When the proper quantity has entered the bowl, the float is raised and shuts off the flow. When the level of the fuel goes down (due to the vaporized fuel entering the cylinder), the float lowers and admits more fuel. This float-feed type of carburetor is most generally used on gas motors.

The suction in the cylinders, caused by the piston moving away from the cylinder-head, draws a volume of air through the air-passage and across the spray-nozzle. From the spray-nozzle a thin jet of fuel is spurting and this draught breaks it up into a finer spray and vaporizes it. The finer the spray, the more rapid and complete will be the evaporation. This in turn means that the combustion will be more perfect and greater power obtained from the fuel. This fuel vapor is now drawn into the cylinder for compression and burning.

On some types of carburetors there is a special adjustment for the air-intake which requires more or less attention.

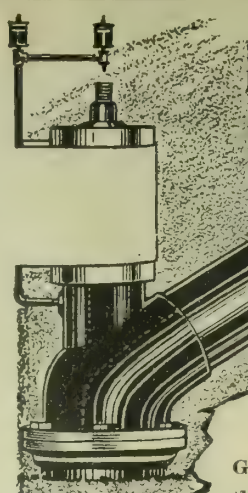
A vaporized gasoline or distillate charge is 1500 times greater in volume than the liquid fuel. When mixed with air it is 15,000 to 18,000 times greater. The importance of an ample supply of air is thus shown.

The vapor entering the cylinder can be regulated in two ways:

1—At the carburetor by adjusting the spray-needle by means of the spray-needle-valve thumb-screw. When the proper adjustment has once been obtained here, this spray-needle-valve should be left strictly alone.

2—By the throttle, which is operated from the driver's seat. This throttle opens or closes the butterfly-valve in the strangling-tube and so controls the volume of air to be sucked through the carburetor. When the valve is open and more air is coming through, a larger quantity of fuel is vaporized and enters the cylinder for combustion. This lowers the fuel liquid in the bowl, the float goes down, more fuel is admitted for vaporization, and so on.

The chief control of the speed of the motor is this opening and closing of the throttle.



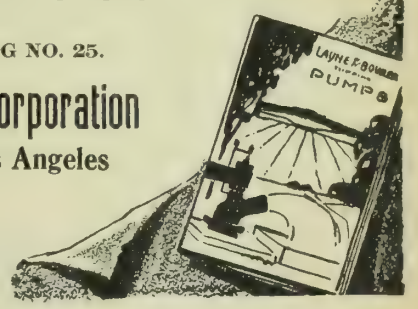
LAYNE & BOWLER PUMPS

Great improvement has taken place during the last decade in pumping machinery. The efficiency of the pumps has been noticeably increased and the designs simplified. Probably the most wonderful achievement has been the substitution of CENTRIFUGAL MOTION in place of complicated valves and plungers, and reducing friction to a minimum. The greatest economy will now be obtained by installing a pump of the centrifugal type. No other style of pump of equal capacity can be purchased and operated for so little money.

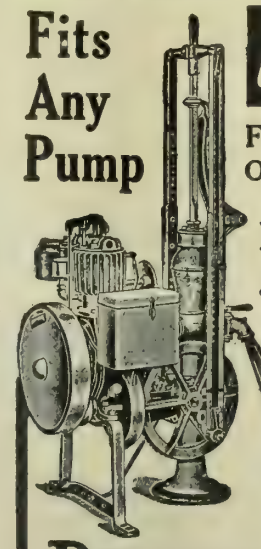
Layne & Bowler Turbine Centrifugal Pumps have for many years been invariably recognized by every pumping authority as the type of pump affording the greatest simplicity combined with the least investment for a given pumping capacity.

WRITE FOR CATALOG NO. 25.

Layne & Bowler Corporation
900 Santa Fe Ave., Los Angeles



Fits Any Pump



All You Want Of It

FROM 270 TO 2450 GALLONS OF WATER PER HOUR WITH THE

FULLER & JOHNSON FARM PUMP ENGINE

This Farm Pump Engine has been rightly called *"the mainspring of the farm."* Can be attached directly to any pump without extra fittings, special platform or foundations. It works in any kind of weather and will supply all the water needed for home or stock in the hottest and calmest days—for household or garden use—for washing buggies—fighting fire—for cooling porches—sprinkling lawns, etc.

No extras to buy. Comes complete in one crate, ready for instant use.

Remember there are 73 years of honest manufacturing experience behind this **Farm Pump Engine.**

It is not to be compared with cheap articles of the same sort which are *built merely to sell.* This engine is *guaranteed* and once you use it you'll say it's the best investment you ever made.

Our Low Price will surprise you.

Power

The **Farm Pump Engine** is also a complete power plant in itself. Relieves you of turning cream separator, churn, washing machine—in fact, anything that can be hitched to it. Runs steadily and easily and without vibration.

FREE BOOKLET

Let us explain in detail just what this pump can do and why it will pay you to own one. Send for our free booklet.

Pacific Hardware & Steel Co.

San Francisco.

Water

General Agricultural Review.

DECIDUOUS FRUITS.

Satsuma and Burbank plums were in full bloom in Los Angeles county last week and promised a heavy setting.

C. Brawley of Fresno has purchased 40 acres of land near Merced which will be planted to Adriatic figs this spring.

Smudging to protect their apricot trees was practiced by some growers in the Santa Clara valley last week. No damage was reported.

The California Prune and Apricot Growers' Information Bureau has appointed L. R. Boedefeld local representative for Colusa county.

A report from Victor Valley states that 45 acres of apple trees have been planted and 35 acres of pears are to be planted on the ranch of Dr. Hitchcock.

Driver and Driver, who recently purchased 160 acres of land near Dinuba, are planting it to figs, 80 acres being planted to Calimyrna and 80 to Adriatic.

Berry growing in the Gardena and Strawberry Park section of Los Angeles county has practically passed into the hands of the Japanese, who raise them cheaper than white men can.

According to statistics compiled by the Santa Rosa Clearing House Ass'n, prune growers in that vicinity realized $310,000 profit from their prune crops last year. Neither grapes nor hops fared so well.

E. W. Beers, Horticultural Commissioner of Santa Barbara county, reports the seizure of one shipment of trees infested with Peach Yellow and Little Peach during the month of February.

According to Niles Searles, County Farm Adviser of Yolo county, the prospects for large fruit and nut crops in Yolo county are exceptionally bright, the trees being heavy with blossom with prospects for a light fall.

E. M. Parker of Tulare has what he believes to be a perfect strawberry which he has been developing for the past six years. Some of the plants are six years old and still bearing, frost seeming to have little effect on them.

At a meeting held in Orosi last week $1520 was signed up for the California Peach Association. Bankers and business men are supporting the new association throughout the San Joaquin valley with generous subscriptions.

That seedling walnuts are no longer demanded is the statement of C. A. Stoddard of the Magnolia Nurseries, Whittier, who says that of their 1,000 Chase seedlings, only 300 were dug and 295 of them are still on hand. People specify budded Chase walnuts.

Chas. F. Collins, County Horticultural Commissioner for Tulare county, reports a heavy planting of prunes in Tulare county this year, particularly in the Farmersville district. He states that some farmers are even tearing out peach trees to make way for prune planting on a larger scale.

An effort is to be made by the directors of the California Peach Association to sign up the remaining portion of the peach growers and get the money into the treasury by April first. With that end in view they will hire expert salesmen who will be sent into all peach growing districts of the State.

H. W. Adams, traffic manager of the California Fruit Distributors, has secured an agreement from the railroads to permit storage of pears in transit for an extra charge of five cents per box. This will do away with the glutting of markets as under the new plan pears can be stored in Omaha or Kansas City or other middle western points and distributed according to the demand.

An open meeting of the Prune and Apricot Growers' Information Bureau was held at San Jose March 10, to discuss the possibilities of auctioning prunes in the Eastern markets. The meeting was addressed by E. L. Goodsell, who handles the bulk of California fruits sold at auction in the East, and by State Market Director Weinstock. Mr. Goodsell and Colonel Weinstock also addressed a similar meeting of peach and raisin growers in Fresno, March 11.

That fire blight in orchards of Yakima county has resulted in the cutting out of trees on 2,000 acres, causing a loss of $100,000 in the assessable valuation of Yakima county lands, and has reduced the loan value of Yakima orchards by $2,500,000, are statements contained in the annual report of District Horticultural Inspector. He states that agents of loan companies have informed him that the loan value of orchards, formerly $200 per acre,

ACAMPO NURSERY CO.
Guarantees its stock. Get our prices on Deciduous Trees before purchasing elsewhere.
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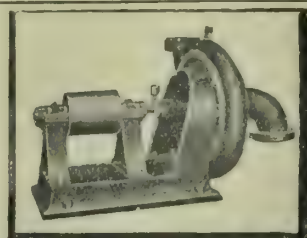
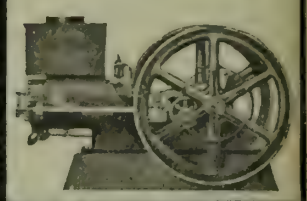
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Prices Reasonable.
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COLMA, San Mateo Co., Cal.
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Write for it.
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Eucalyptus
Write for prices, stating quantity and variety wanted.
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Established 1878. Incorporated 1906.
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MORGAN HILL, CAL.
"We Grow Everything Worth While"
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Grape Vines
We are closing our stock of resistant grafted vines—Carignane, Zinfandels, Petit Sirah and Cabernet.
First choice vines at $45.00 per 1000.
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PUMP HOUSE
33 TO 41 FREMONT ST. SAN FRANCISCO, CAL.
PUMPS FOR EVERY SERVICE AND USE
FOR IRRIGATION—Power, Belt, Electricity, Air, Vacuum, Ship, Spray, Wine, Oil, Mines, Steam, Water Works, Wind Mills, Road Sprinkling, Rams, Hand, Deep and Shallow Well Pumps, Goulds Celebrated Triplex Pumps.
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10 ins. deep where no other tractor can budge



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Reg. U.S. Pat. Off.

In many a competition the Caterpillar has walked off with a gang of plows that other tractors could not budge.

Rated horse-power was the same. But years of experience in Caterpillar building have shown us how to turn power into drawbar-pull with the least loss.

In the same way we know how to build best-wearing materials into a tractor that will stand up and give longer service and cost less for repairs.

When you buy a Caterpillar, you know you are making the wisest choice. You know that many years service in the field have proved it right. You know there are 3000 owners who will tell you it's the best buy.

We have a new folder that shows the full Caterpillar line. There's a size for every sort of work Drop us a postal asking for Folder C 335.

The Holt Manufacturing Co., Inc.
Stockton Los Angeles San Francisco

Grand Prize—San Francisco and San Diego Expositions

has been reduced 25 per cent as the result of the blight. The inspector informs his superiors and the county commissioners, to whom a copy of the report was furnished, that with proper co-operation by owners of orchard lands, inspectors and officials, blight can be entirely eradicated during the coming season.

CITRUS FRUITS.

The San Dimas Nursery shipped 10,000 Marsh Seedless grapefruit to Rio Grande Valley, Texas, last week.

Two new orange packing houses are to be built at Lindsay before the next navel season starts, according to advices from that city.

A packing house is to be erected by the Strathmore Early Orange Ass'n in a short time, a building site having already been purchased.

McMillan and Graffin of Spadre made a shipment of 6,000 navel oranges and 6,000 Eureka lemons last week to Rio Grande Valley, Texas.

The Anaheim Citrus Fruit Ass'n will build a $40,000 ice and fruit pre-cooling plant this season. Their year's output is estimated at 700 cars.

Some 500 acres of Valencias and lemons are being planted this spring by the Banstanchury Ranch Co. of Fullerton in addition to over 1,000 acres planted in recent years.

The Lemona Heights Nursery Company of Riverside shipped two carloads of citrus nursery stock to Imperial Valley last week and will ship another two carloads to the same place in the near future.

RAISINS, NUTS AND OLIVES.

Reports from Santa Barbara county are to the effect that a San Diego firm is endeavoring to purchase oil olives in that county, but are meeting with little success.

Walnut growers near Hemet have formed what is said to be the first walnut growers' association in Riverside county. The association will be affiliated with the California Walnut Growers' Ass'n.

FIELD CROPS.

The rice acreage in Butte county this year will amount to between 20,000 and 25,000 acres.

The honey crop of Kings county amounted to about 180 tons last year and was sold at an average of 3½ cents a pound.

According to data prepared by the California Olive Growers' Association there were between 7,000 and 8,000 tons of pickling olives produced in California last year and with a normal increase the crop this year will be about 12,000 tons.

F. W. Waite, Horticultural Commissioner of Imperial county, is advising farmers to keep down the grasshopper pest by spraying all ditch banks with crude oil or creosote.

E. L. Davenport of Chino reports the alfalfa outlook for the year to be very good. Cutting in all sections of southern California is now under way and prices in field are starting at $14 a ton.

Early prices of asparagus have been entirely satisfactory from a grower's standpoint this year, the California product being sold in the East at a much higher price than that produced in the southern states.

What is said to be one of the largest movements of barley across the continent by rail ever sent from California is a shipment of 70,000 tons which is already stored in warehouses at Port Costa, Stockton and San Francisco.

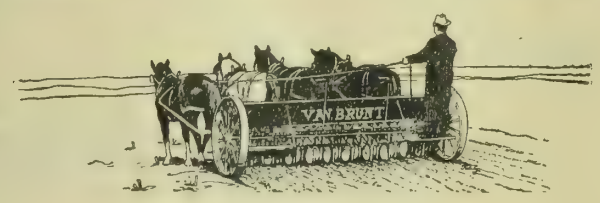
A 3600 sack lot of onions were dumped in the San Francisco bay last week, having been condemned by State horticultural inspectors. They were being held by speculators who failed to realize anticipated prices.

Mrs. J. W. Terrill of Florin states that moth balls, powdered and dusted on the corn silk, just as it appears, will keep the ear free from worms. A pepper shaker makes a handy utensil to do this with. A couple of shakes to the ear is all that is necessary.

Corn growing is to become popular in Kings county this year as a result of the contest which has been started by the Kings County Chamber of Commerce. Kings county farmers have been raising good corn for many years, but not on such an extensive scale as it is thought possible.

The University Farm Picnic this year will be held at Davis, April 22. It is expected that the auomobile travel to the picnic will be materially increased this year as a result of the completion of the causeway across the Yolo basin, which connects Sacramento and Yolo counties.





Van Brunt Drills
With Adjustable Gate Force Feed

THEY plant any small seed, alfalfa to bearded oats, peas or beans.

Amount sown per acre easily regulated merely by shifting feed gauge levers.

All the ground sown, because the Van Brunt adjustable gate force feed and special agitator in the hopper compel seed to leave hopper in even, continuous streams—no bunching or choking up—and an equal amount goes into each furrow.

An even stand of grain is secured, because pressure springs compel all the discs to cut furrows of even depth, and the closed delivery places seed at bottom of these furrows.

Van Brunt Drills do not clog up. Scrapers keep discs absolutely clean.

Smooth running—each wheel drives half the feeds, equally distributing the work. A direct, double, gear drive from the continuous axle.

High grade discs with bearings that are guaranteed to last lifetime of drill. Either single or double discs.

Grass seeder attachment can be furnished which will drill or sow broadcast as desired. Write us for free booklets.



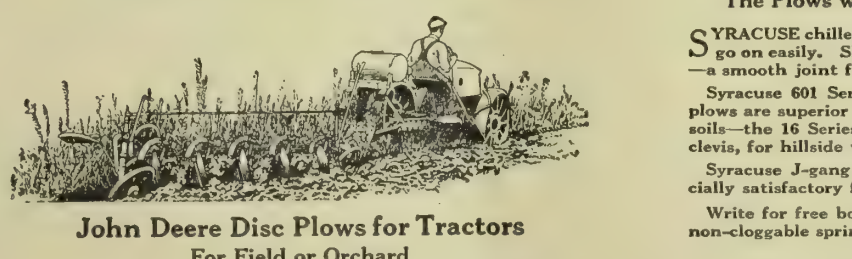
John Deere Plows for Light Tractors
For Orchards and Vineyards

PRACTICAL—one-man outfits. Work with any standard tractor. Controlled by man on the tractor.

High and Level Lift—Pull the rope and all bottoms raise high and level. Another pull lets them down. Plows do not clog or gather trash on the turn.

No levers—plows leveled and depth regulated by screw device. Can be run close to trees and vines without injuring branches.

Regular with three or four 12-inch bottoms. Quick Detachable Shares—save 80% time changing shares. Write for free booklet describing light tractor plows for orchard and vineyard, or regular field work.



John Deere Disc Plows for Tractors
For Field or Orchard

MADE especially for use in the West. Work successfully in every soil where a disc plow should be used.

Plow anywhere from five to twelve inches deep.

One-man outfits—controlled by man on the tractor. Work with any standard tractor.

Can be used either for field or orchard work simply by changing the land axle.

All levers down close to plow when at work—plow can be operated close to trees and under limbs without injuring them.

Easily transported—special lever at the rear for lifting discs high and level.

Over fifteen inches clearance under beam; twenty inches between discs.

Twenty-four or twenty-six-inch discs with chilled metal bearings—constructed so that bearings do not drag along wall of furrow when plowing deep.

Can be reduced to four discs by taking off one intermediate section and telescoping connecting rods.

Write for free booklets describing the John Deere Tractor Disc Plow No. 10 for field work and No. 11 for orchard and vineyard.

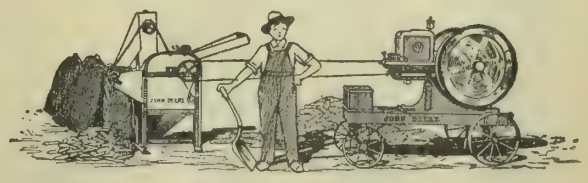
John Deere Syracuse Plows
The Plows with Perfect Fitting Parts

SYRACUSE chilled shares fit perfectly—extra shares go on easily. Share draws up snugly to its place—a smooth joint formed always.

Syracuse 601 Series, wood beam, sloping landside plows are superior for general purpose work in light soils—the 16 Series, wood beam, with side shifting clevis, for hillside work.

Syracuse J-gang plows, three bottoms, are especially satisfactory for vineyard and orchard work.

Write for free booklets. Also ask about Syracuse non-cloggable spring tooth harrows.

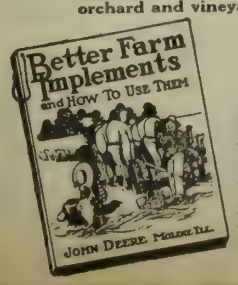


R. & V. Engines
Dependable Farm Power

"R & V" Triumph—always develops rated horse power—made in 1, 1½, 2½, 4, 6, 8, 10, 12, 16 and 20 H. P. sizes, stationary and portable.

Easily started; perfect speed control (speed can be varied 40 per cent without stopping engine). Complies with insurance regulations. Hopper cooled—a simple, efficient system that does not require long pipes and numerous fittings.

High grade throughout. Inspect the extra guard ring over piston pin to prevent possibility of scoring cylinder. Ask about the "R & V" oscillating magneto. Write for free booklet.



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BOOK FREE—168 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars. Describes and illustrates: Plows for Light Tractors; Steel and Chilled Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Lister Plows and Cultivators; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain Wagons; Teaming Gears; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders, Stackers, Sweep Rakes, Mowers, Self-Dump Sulky and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills and Seeders; Grain Binders; Corn Binders; Gasoline Engines. This book sent free to every one who states what special implements he is interested in and asks for Package No. X-152.

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Largest and best equipped soil laboratories in West.
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Analyses of Soils for Plant Food Values and Alkalies. Agricultural and Industrial Products, Water, Insecticides, Etc.

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CHEMICAL and BACTERIOLOGICAL ANALYSES, SOILS, WATERS. FEEDS, DAIRY PRODUCTS.

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You Almost Forg

A six cylinder motor is superior to a four chiefly in that it is *possible* in a six to have greater range of speed on direct drive—requiring less gear shifting.

But not *all* sixes are superior to *all* fours.

We build both sixes and fours.

We build fours that have greater flexibility than many sixes.

Our only purpose, therefore, in building a six is to satisfy *with Overland finality* those discriminating buyers who demand well nigh miraculous performance in an automobile.

So the Overland Six is equipped with a motor so flexible that it almost lets you forget that you have a gear shift.

Except for the start
will drive the Overland S
and hill conditions with s

And not only is the
flexibility.

It has great reserve p

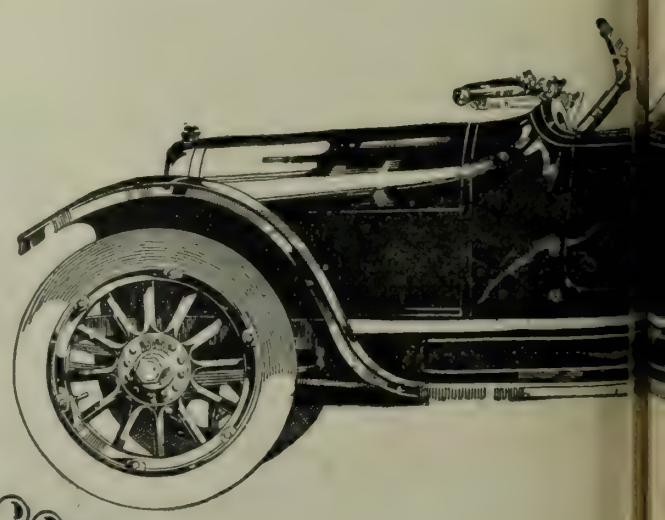
Its range of speed on
coupled with reserve powe
with *lightning rapidity* fro

And our enormous ou
Six, equipped with our va
hundreds of dollars less
formance in any other car

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The Willys-Overlan

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Overland
TRADE MARK REG.

Your Gear Shift

absolute standstill, you
even the severest traffic
eed to shift a gear.

Six motor a marvel of

ve or "high" is therefore
nables you to accelerate
est to the *highest* speeds.

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ior six motor, at a price
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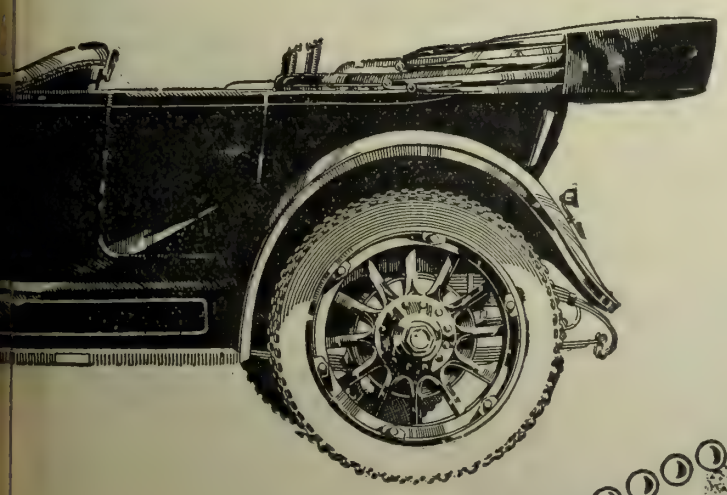
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We are the world's largest builders of sixes and fours, producing virtually two cars for every one of any other concern building similar types and sizes of cars.

Obviously, the Overland Six is underpriced—is dominant Six value—comparable only with very much higher priced cars.

The rush of spring buying naturally centers upon such excess value, taxing even our unequalled production capacity.

See the Overland dealer at once and order your Six *now*.



What You Can Do for Rural Credits.

A pending proposition which shou ld be approved by farmers and farmers' organizations.

Since answering a correspondent in our last issue that rural credit propositions at Washington had not assumed form to warrant much activity in farmers' support we have learned that another measure is now pending which comes nearer to what is needed. It is Senate bill 2986 known as the "Hollis bill," which has been favorably reported by the Senate Committee on banking and currency. Orange Judd Farmer of March 11 gives an outline of it as follows:

The bill provides that 10 or more farmers in any community who wish to borrow on long-time mortgages may organize a national farm loan association. Each member must pay in $5 for one share at par for each $100 he wishes to borrow. He thereby assumes double liability, that is, he becomes liable to the association for $10 on each share. He has one vote for each share, but not to exceed 10 votes in all. Only borrowers may become members.

Each member applies for a long-time loan secured by a first mortgage on his farm worth not less than twice the amount applied for. Interest shall not exceed the legal rate. No loan for less than $200 nor more than $10,000, nor for less than five years or more than 35 years. Installments shall be paid on principal each year sufficient with accrued interest to wipe out the debt at maturity. Then the mortgage is discharged, the borrower's shares, are paid back and he is free and clear.

If the loan is approved, the association indorses it and gets the money for it from the federal land bank. In other words, the borrower has to put up a margin of 5 per cent in cash, his liability to others is limited to twice the amount of his investment, although unlimited liability may be legally assumed if desired.

The continental United States is to be divided into 12 districts, each of which shall have a federal land bank of not less than $500,000 capital stock. Joint stock land banks also are authorized to compete with or participate in the federal system.

The system is to be in charge of the federal farm loan board, a bureau in the treasury department, and consisting of the secretary of the treasury, together with four members appointed by the president with the consent of the senate. Each federal land bank may issue bonds upon the security of the mortgages it buys, the sale of these bonds to furnish additional money to loan. Any shares in the federal land bank not subscribed by the public shall be paid for from the federal treasury. This is to be reimbursed subsequently by the sales of said stock thereafter. Each national farm loan association must invest in its federal land bank's shares the cash received from the sale of its own stock to individual borrowers.

Not to exceed $6,000,000 of government funds may be deposited in federal farm land banks at 2 per cent interest in any one year, and secured by farm bonds at par. Not to exceed 30 per cent of the deposits in postal savings system may be invested in farm bonds at not to exceed par. Time drafts with farm bonds as collateral may be discounted by any bank, and shall be eligible for rediscount through the federal reserve. Shares and bonds of the system shall be free of all taxation. Bonds to bear not over 5 per cent interest.

This comes nearer to being what is wanted than anything previously favored by a congressional committee and it is very desirable that believers in rural credit should urge their representatives to vote for it. Unless thus urged it is very likely to be forgotten in the press of war and politics.

William Willoughby is planting 2,000 Blenheim apricot trees on his ranch near Kings City.



The Salof Self-Setting Gopher Trap.
Only trap having free passage. Will entirely rid your place of gophers in one season. Will catch all sizes. If you want a trap that will give results, try this one. If your dealer can't supply you, will be sent postpaid for 50c; 3 traps, $1.00. Circular free. A. SALOF & CO., 3914C 39th Ave., Oakland, Cal.



SAMSON with SIEVE-GRIP
Reg. U. S. Pat. Off. and Foreign Countries
TRACTORS

The angular Sieve-Grips act as clod-breakers and soil agitators. They crush the large, hard lumps and prepare the way for the cultivator.

One round with a Sieve-Grip Tractor and harrow gives a perfect mulch where two are usually needed.

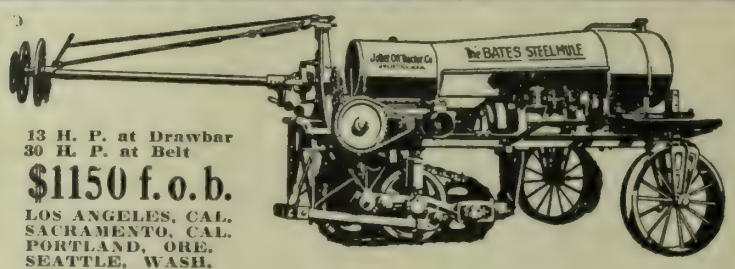
Sieve-Grip Tractors are adapted to orchard and vineyard work because of their low, compact structure and dust-proof features:

"Six-Twelve" $725 f. o. b. Stockton "Ten-Twentyfive" $1250

Have you enough and economical power for your spring work? Let us tell you about these Sieve-Grips. Send us a card asking for our latest illustrated folder P. R.-8

SAMSON IRON WORKS, Inc.
Stockton, California.

This Machine Is More Than A "Tractor"



13 H. P. at Drawbar
30 H. P. at Belt
$1150 f. o. b.
LOS ANGELES, CAL.
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The "CRAWLER" Is Spring-Mounted

RIDDING FARM OF WEEDS.

[Editor's Note.—This is the third of a series of five articles on weed eradication that have been prepared by Mr. O. W. Newman, Assistant Secretary State Commission of Horticulture, and which will appear in coming issues of this paper.]

HOW TO SAVE THE FARM FROM JOHNSON GRASS.

Where Johnson grass does not occur the thing to do is to keep it out. Sow clean seed! There is great danger that sowing Sudan grass will spread Johnson grass, and the State Commission of Horticulture has investigated the possibility of procuring pure Sudan grass seed. The most satisfactory information received came from the United States Department of Agriculture, and is given below:

"There are no varieties of Sudan grass seed recognized at the present time, though there is some difference in regard to seed. This is mainly due to hybridizing influences. The Texas station has attempted to differentiate between pure and mixed or hybridized seed by indicating the former as 'cream hull,' or that which has a decidedly golden cream color. Seed with darker glumes or that tending to a reddish color, or even black, is more likely to be a mixture of a hybrid seed. This can not, however, always be depended upon. The only safe method of procedure is to purchase seed that is grown in Johnson grass free districts."

The letter supplies the names of growers of Sudan grass seed which could be guaranteed practically free from Johnson grass. We would advise those intending to plant Sudan grass to communicate with Mr. Roland McKee of the U. S. Dept. of Agriculture or with this Commission.

The Johnson grass problem in California is already a very serious one. Thousands of dollars have been spent in its attempted control and still it remains one of our worst weed pests. Hundreds of acres have been completely abandoned to it. If the most rigid care is not taken by prospective grain purchasers and seed men, still greater areas will be ruined. Witness the misfortune of the rice growers and take warning.

The only practical method of eradicating Johnson grass, so far as recommended, is thorough plowing, raking and burning. Turn hogs into the field and they will root out large quantities of the root-stocks. Rotate crops, using hoe crops wherever possible.

Keep ditch banks, roadsides and other waste places free of the weed. Do not allow it to go to seed. Screens in the headgates and ditchgates will keep out large quantities of the seed. Johnson grass and other weeds growing along the ditch banks are a serious means of spreading weed seed. Chemicals for the control of Johnson grass have not yet been sufficiently tested to be recommended.

Do not get the idea from what has been said about Johnson grass that it cannot be controlled. Although sometimes it may seem like a hopeless task, we know it can be done, because it has been done. It requires time and perseverance, and it costs money. There is no easy road to eradication, and there is much land from which it will not pay to eradicate Johnson grass by our present methods. We are now working on chemical sprays as a possible means of reducing the expense and increasing the efficiency of eradication methods, but these sprays have not yet been sufficiently tested to be recommended.

I want to include here a statement made by County Horticultural Commissioner William Wood, at the California State Fruit Growers' Convention, held at Visalia in November, 1915:

"Some may think from the statement I have given about Johnson grass and morning glory that it is a hopeless task to destroy or control them. Not so. Wherever we find a good farmer there is no Johnson grass, even though he is located under the most adverse conditions. It is the farmer who has made one or two half-hearted attempts to destroy these weeds and given it up, who says it can't be done.

I have known men who have let the Johnson grass and morning glory become established over most of their farm, and then have sold their property for less than half what it would have brought if free from these weeds. I have also known a man who bought 100 acres covered with Johnson grass. This man destroyed every root on the 100 acres in one year. So you will see the difference is in the man more than the unfavorable conditions under which he has to work * * *"

This statement is quite true. I have heard it from all sides, and always from good, hard-headed, successful business men. The weed problem is a vital one, and it is one we must constantly watch.



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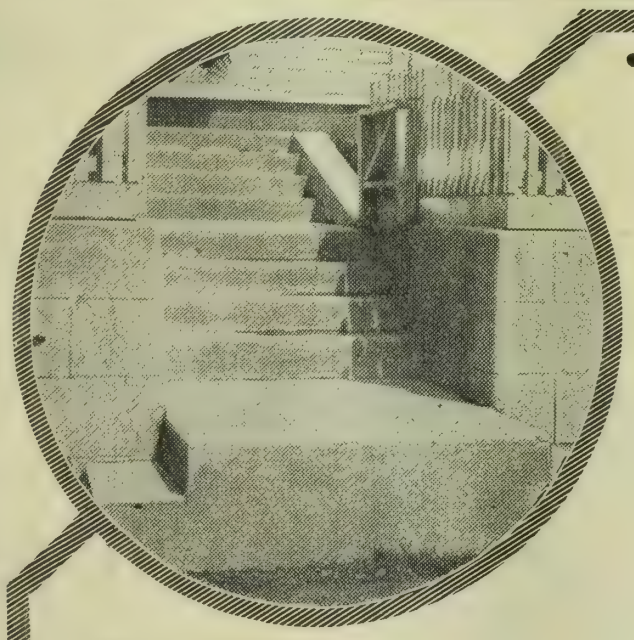
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Keeps out rats, vermin and moisture. Makes the sanitary floor.

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Safeguards the purity of milk. Concrete absorbs no impurities, gives off no odors, can be washed absolutely clean.

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Saves feed from being trampled in the mud. Keeps the stock's feet in better condition.

Concrete Manure Pit
Preserves all the liquid fertility of manure. A load of well-rotted manure from a concrete pit is worth two loads of ordinary manure.

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Keeps the water clean. No impurities can soak through a wall of concrete.

Concrete Dipping Vat
Every farmer needs one for the comfort and health of his stock. Cannot leak nor become foul.

Concrete Watering Trough
Keeps drinking water clean and free from the slime and splinters of decaying wood.

Concrete Barn Floor
Can be easily washed and kept clean. Never rots nor gets slimy like wood floors. Is not slippery.

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More sightly and convenient than cans, and better protection. May be moulded to permit the frequent burning of garbage.

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Keeps hogs from getting plastered with mud. Becomes an automatic dipping vat.

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Safeguards the family's health. Prevents contamination of water. A big improvement over the insanitary privy.

Concrete Root Cellar
Prevents freezing of vegetables and fruit. Preserves them for right market conditions.

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Make permanent passageways over ditches.

Concrete Chicken House
Better than wood. Rat-proof, vermin-proof, sanitary.

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High-Producing Dairy Progeny.

[Written for Pacific Rural Press.]

A high-producing Holstein cow has a high-producing daughter which has a high-priced son, all owned until recently by the Whittier State School.

The 10-year-old cow has just completed her year's record of 711.56 pounds fat (889.45 of butter) from 19,241.8 pounds milk. During the record period she was fed and milked by several different boys of the State School, experienced and inexperienced, good milkers and poor ones. This comes near the average of the highest five Holstein cows over 10 years old, which is 781.44 pounds fat.



The cow's name is De Kol Pietertje's Favorite Queen. She and her daughter, Whittier De Kol Pietertje, are still owned by the School. The latter's record at 5 years old is 24.09 pounds butter in seven days and 95.45 pounds in 30 days. She is now on yearly test and is making an excellent showing, being still milked and fed by the boys.





This daughter's bull calf sold at 8 months old for the price of half a dozen full-grown, high-grade cows, to Edmund D. Barry, Jr., of Daggett, Cal. That price was paid because of the records of the calf's dam and grandam. All three are beautiful dairy types.

The chief value of purebred stock lies in the practical certainty that the best characteristics will be transmitted to the offspring.

The chief value of records of production is that they show which individuals have the characteristics that are valuable not only in the individuals but also in all their offspring and relatives.

One of the chief values of purebred livestock at the Whittier State School, according to Ranch Superintendent E. B. Balis, is its effect on the young men who care for the animals. They take great interest in their work, and are likely in a few years to be showing our California livestock men a little about breeding, feeding, milking and making records.

It is certain that their association with fine cattle has a beneficial effect on their moral character, for the boys at the dairy have chosen that work in preference to other work provided by the school.

Advice on Concrete Silo Construction.

To the Editor: I see in your issue of February 26, a query from a subscriber of Stonyford asking about the cost and economy of concrete silos. I shall endeavor to answer this query through the Press, as the answer following the query is so high as to cost that it is almost prohibitive for the average dairyman.

My father and I have built concrete silos since 1902 and have upwards of 30 in southern Michigan and northern Indiana, varying in size from 10 feet diameter and 30 feet high, to 20 feet in diameter and 52 feet high, all giving the best of satisfaction.

A concrete silo, properly built, will preserve the entire contents with no waste at all except the top three or four inches, if allowed to remain very long after filling, before covering or feeding. We have found by actual experience that the proper size is 14 by 40, for all conditions. If the dairyman needs more capacity a similar silo should be added.

The walls of the silo need be no thicker than nine inches at the bottom, tapering to four inches at the top. The cost of a 14 by 40 foot silo will approximate about as follows: 42 cubic yards of concrete, divided into about 42 barrels of cement, 14 cubic yards of sand and 28 cubic yards of gravel. A barrel of cement to the cubic yard just about equals a 1-2-4 mixture of concrete.

The dairyman can figure the price of sand per yard, gravel per yard and cement per barrel for his particular locality, then add to this cost $4.00 to $4.50 per foot in height and he will have the approximate cost of a silo of 150 tons capacity.

We always allowed the dairyman to do his own excavating, and hauling of materials, because he can get his materials on hand and have everything all ready.

The Law Demands Sanitary Barn Equipment

Write for Catalogs "LOUDEN" Equipment



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Registered Beef Bulls

For sale at prices to move them, 15 head of fine, registered Hereford Bulls, and a number of registered Shorthorn Bulls, all tuberculin tested. Recently from the East and in fine breeding condition. Call or write.

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WILL BE SOLD AT THE

First Annual Southern California Breeders' Consignment Sale on April 14, 1916, at the Rio Vista Ranch, Rivera, Calif.

Owing to the fact that we have purchased the great King Segis De Kol Korndyke, we have no further use for our former herd sire, Tilly Alcartra Son, who is a son of the world's champion milk cow for one to four years' production and the world's champion butter cow for from two to four years' production. This is the only opportunity that has ever been offered to purchase at your own price a son of the world's greatest milk and butter producer.

McAlister & Sons, Chino, Cal.

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SHORTHORN CATTLE

Shropshire and Merino Sheep

FOR SALE, SINGLE OR CARLOAD LOTS



KING LANCASTER,
Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.

THEY HAVE GRAND CHAMPIONS BEHIND THEM.

In most cases he realizes hardly any cost for materials except the cement. **A. S. Burbank.**

[Of course our estimate of cost took into consideration the work of teams and men in hauling gravel, sand and cement, and in instances where these materials have to be hauled some distance that factor should not be overlooked.—Editors.]

Pigs Harvest and Balance Own Ration.

[Written for Pacific Rural Press.]

To let 300 brood sows and their offspring harvest and balance their own rations in some ten pairs of fields on a ranch of 200 acres is the system of G. D. Willoughby and Sons of Calexico. About 100 of the old sows are registered Durocs, largely of Eastern blood.

As nearly as convenient, each alfalfa field has its mate in grain. Barley is sown November to February, and if sown early is pastured till spring. This being cut when practically ripe late in April or early May, is stacked in its adjoining alfalfa field for the pigs to eat at pleasure. This lasts all summer. Seven stacks were used last year and there will be more next season. The stubble is irrigated, plowed, and planted to milo even as late as July. This is partly cut to feed in the head during winter, and partly hogged off. The stalks make good pasturage when alfalfa is too wet. Barley is also sowed on all alfalfa fields for winter pasture, and perhaps half of it is allowed to ripen. Pigs eat it into the ground, but do not kill it.

All pigs are fed grain in the morning. This is measured closely (not estimated) in order to know how much to give when an increase is desired as the pigs grow. "Plenty of the ranchers here are feeding the blackbirds by estimating too much grain, especially that fed in the head," says Gilbert Willoughby.

"We have farmed in Sacramento and San Joaquin Valleys and near Ventura, but nowhere else can they raise hogs as cheaply as we can. We grow all our own feed, and by our system of fields and crops, two men besides ourselves can feed everything. We expect to have 900 head on the ranch all the time, though we aim to sell all barrows when they are worth $8 or $10 each, to other people for fattening."

Succulence will be added and the ration cheapened by growing 20 acres of beets to feed the sows in brooding pens.

Hogging-off Volunteer Barley.—One field of about 25 acres was sowed to barley in the fall three years ago. It was pastured till February, when the hogs were taken off till it ripened. They then hogged it down till fall. The field was disked and furnished green feed all winter. This volunteer crop was allowed to ripen and was then hogged off as before, the process being repeated. In January, 1916, there was still a heavy growth and a thick stand of flourishing green barley.

A feature of the ranch is that the pigs are transferred to fields at an early age so there are never many around the house, but wherever one looks he sees healthy hogs busy about the open fields. Running water is provided from the irrigation ditches, being run through settling ponds.

ROARING HORSES.

Whistlers, wheezers, blowers or roarers. These uncomplimentary terms were not applied in anger, but merely used to indicate the character of the unsoundness in horses, known as roaring. Their use may be avoided by saying that the horse is afflicted with laryngeal hemiplegia. Horses affected with this disease appear normal while at rest, but when severely exercised the breathing efforts become much greater and the characteristic noises are heard. Ninety per cent of the cases are caused by partial paralysis of the muscles of the left side of the neck. It may be cured in a great majority of cases by an operation on the larynx. The operation is not dangerous if performed by a skillful veterinarian. Most cases are ready to be put back on work in course of eight weeks.—Carl N. Kennedy, Horse Specialist, O. A. C.

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Jersey Bulls

EMPRESS LASS, Grand Champion Jersey Cow at Alaska-Yukon Exposition, and several times at California State Fair, gave 82.32 pounds fat during December, 1915, under dairy conditions.

Her Grandsons and other Bulls from good-producing cows for sale

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Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.

Write or call and see us

SWINELAND FARM,
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GET STARTED RIGHT
Registered Duroc Jerseys.
$10 each PIGS $10 each
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What's the use of raising "Scrub Hogs" when purebreds may be had at this price? They grow faster. Send today.

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Bred sows. Boars ready for service. Weanlings. All choicest breeding. Weanlings sired by "Masterpiece" boar.

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All diameters from 2 inches to 12 feet. Much cheaper than any metal pipe. Will carry 30 per cent more water than metal or cement pipe of same diameter. Will outlast any metal pipe except cast iron. Cannot be injured by roots or displacement. Furnished for any pressure from 0 to 400 feet, and guaranteed for 100 per cent overload.

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Grand Champion Sow, P. P. I. E.

Medium Type
POLAND-CHINAS

Choice breeding stock, both sexes, from Panama-Pacific International Exposition prize-winning strain. 12 firsts, Junior Champion and Reserve Grand Champion Boar, Junior and Senior and Grand Champion Sows. $2145 cash awards. Write to

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SHORTHORN BULLS and HEIFERS

Will arrive from the East with a car of choice Shorthorn Bulls and Heifers about March tenth. Solid Red—Registered and Tuberculin tested.

These are splendid animals—lots of bone and individuality.

Also a few choice, registered Berkshires for sale.

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A representative of Bishop Bros.' firm, whose noted San Ramon flock of Shropshires was awarded 15 first, 9 seconds and 6 championships at the P. P. I. E. Live Stock Show, will go East about April 1st, to fill orders for registered rams and ewes of that breed.

Other Orders Solicited—Prices on Application.

Individuals or Carload Lots.

Personal Selection of All Stock Will Insure You Sheep of Correct Type and Good Breeding.

For further particulars apply at San Ramon Rancho, Contra Costa County, California, or at Office, 166 Geary Street, San Francisco.

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Gilts from Weanlings to one year old. Bred or open. Boars from weanlings to 8 months.

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With the Live Stock Men.

DAIRYING.

The annual meeting of the Stanislaus County Cow Testing Ass'n was held at Modesto last week.

A number of Holsteins on the Stanford University's ranch at Vina are being officially tested.

The 120-acre dairy ranch, owned by M. Rosing near Tipton, Tulare county, is being equipped with modern dairy barn and milk house.

A meeting was held in Orland last week to consider the new dairy laws and their application and to take final steps toward the organization of a cow-testing association.

Many silos in the Compton district of Los Angeles county have been empty several years; but dairying and alfalfa are again beginning to replace beets.

Practically all of the cows at the Whittier State School are in the A. R. O. or are entered for A. R. O. records, according to Farm Supt. E. B. Balis.

At the annual election of officers of the Porterville Co-operative Creamery last week, V. D. Krupp was elected president, L. M. Owens, vice-president, and C. O. Premo, secretary-manager.

The California Central Creameries Co. of San Francisco have definitely decided to erect a creamery at Chowchilla this year. It is stated that there are 2,000 cows in that section at this time.

Due to the high price of hay, the great many dairymen are beginning to cut their first crop of alfalfa and feeding it green, in Stanislaus county. Those who are pasturing their cows are watching them very closely to guard against bloat.

R. E. Watson of Modesto, manager of the Rancho Dos Rios herd of registered Jerseys, reports that he will hold an auction sale sometime during April or May of about 30 head of purebreds. This is the oldest herd of registered Jerseys in California and also the largest. These two factors should make it possible for Mr. Watson to offer some of the choicest Jerseys ever sold at public sale in the State.

With a production of 74.8 pounds of fat from 1348 pounds of milk, the Jersey cow Empress Lass, owned by N. H. Locke Co., again headed the list of cows in the San Joaquin County Dairymen's Ass'n for the month of February. Of the 15 cows in the testing association producing over 45 pounds of fat for the month the N. H. Locke Co. owned five; E. B. Goodwin, six; Mrs. E. C. Clowes, one; County Farm, one; C. A. Beecher, one; and J. DeCarti, one.

Plans are now complete for the official testing of Holsteins on the Millbrae Dairy, in San Mateo county, on a large scale. A new test barn with box stalls for eight cows has just been completed and is a model of convenience. Mr. Robb, Jr., who will have charge of the test cows, states that they will test all of their purebred cows as fast as they freshen from now on. There are about 150 head of registered cows on this farm which will be increased to 300 head. The herd is now headed by a son of the King of the Pontiacs.

Alexander and Kellogg, Milking Shorthorn breeders of Suisun, write that they have just returned from a trip East where they purchased three registered cows, five heifers and a bull. One of the cows, Rose Fairfield 2nd, was undefeated in six fairs during 1915 and has a record of 10,045 pounds of milk in 300 days, and all of them are of exceptionally high quality. The bull they purchased was Glenside Coming Star, out of an English cow, Welcome Lass, who produced 13,560 pounds of 4.1 testing milk with her last calf. The bull is sired by Bradford Prince. Over $12,000 is said to have been paid for the nine head purchased.

SWINE.

For some time several Los Angeles buyers have been busy in Imperial Valley buying hogs and the Valley at present is pretty well cleaned up.

Bedell and Sons of Roseville have established a very choice herd of registered Berkshires on their ranch just west of that town.

W. T. Gatton, the Hampshire swine breeder formerly located at Gardena, has moved his herd of purebreds to Calexico, Imperial county.

Felton and Hoyt, Duroc Jersey breeders of Hanford, now have 16 brood sows and two fine boars, but expect to have a herd of 50 sows by fall. They believe in culling rigidly, offering only the tops for sale for breeding purposes.

A choice herd of registered Berkshires are being added to the Elder Creek Dairy Ranch near Sacramento as a side line to their registered Jersey cattle. Mr. Smith, the proprietor, believes there is more money in good stock than in scrubs.

A swine breeders' association to be known as the Tulare County Swine Breeders' Ass'n was formed at Tulare March 4. Thirty-five hog growers were present, J. L. Nickerson being elected temporary vice-president and Arlington Smith, temporary secretary.

Highly crossbred pigs sold at weaning time to feed for pork are a profitable side line for A. G. Masten of Gardena. One litter of 11 pigs was sold at birth for $3.50 each, to be delivered at six or seven weeks old.

E. F. Curtis of Napa informs us that he has just received a Duroc Jersey gilt, bred to Colonel Protection, from C. P. Dexheiser, of South Dakota. Her grandsire is King of the Colonels and it is said by Eastern judges that she is one of the best Durocs ever sent West.

H. P. Slocum and Son of Willows report the sale of seven registered bred and open Duroc gilts and two boars to the Fontana Land Co., of Fontana. This firm is doing a great deal to aid the purebred swine business in the State and the Slocum purchase should be of value to them in their work.

Mr. A. Boyd of Silsbee, Imperial county, has found purebred Duroc Jerseys a profitable investment. His first sow raised a litter of 12 pigs and two of her offspring eight months old are now nursing litters equally as large. Mr. Boyd says that the profits from Durocs are larger than he anticipated.

The Berkshire breeders of Yolo county have organized the Yolo County Berkshire Association with F. B. Armstrong as president, G. H. Hecke, vice-president, and A. H. Brinton, secretary-treasurer. They plan to hold a spring sale of Berkshires at Davis. The next meeting of the association will be held March 18.

C. B. Cunningham of Mills, Sacramento county, has received five Chester White sows from the East and a six-month-old boar. Four of the sows are bred to sons of Wonder, who is said to be one of the best boars of the breed. The other one is bred to St. Elmo, who was a four time grand champion. The boar is out of William A., grand champion at Minnesota State Fair.

Word has just been received from Prof. J. I. Thompson, secretary of the California Swine Breeders' Ass'n, that a consignment sale of all kinds of hogs will be held at Chico, May 24, in connection with the Butte County Spring Exposition. Animals will be consigned from some of the best herds in the State. Particulars concerning the sale can be secured from Prof. Thompson, Davis.

J. A. Crawshaw of Hanford advises us that he has purchased from the middle west one boar and two sows of the Spotted Poland China breed. He says they are fine individuals and the first so far that he knows of in California. He will compare them with the black Poland

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SWINE.

BIG TYPE POLAND CHINAS—One to a carload. Any age, either sex. 600 on hand. They have plenty of size, extra good hams and shoulders, strong arched backs, great length, depth and thickness of body, with good looks as well. Many are sired by IOWA WONDER, a 1000-pounder in show condition. I believe his pigs are the best in California. Visitors say they are the best they have ever seen. He sires the kind that grow faster and larger, have more, better and stronger pigs, and are more practicable and profitable—the kind that are highly satisfactory. Extra special prices on account of being overstocked. I have hogs galore Prices will surprise you Satisfaction guaranteed Write Geo. A. Smith, Corcoran, Cal.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—Everything registered and Cholera Immune. Have two young boars of service size and a few bred gilts to offer. These are extras in every way. Price very reasonable. Have recently received some bred sows from the East that are from Grand Champions and are bred to Grand Champions, from the best and most popular blood lines. Will have an attractive lot of pigs to offer from the coming spring farrows. These will be the equal of any raised in this country. Am booking orders now for same. Write for prices and catalogue. C. B. Cunningham, Mills, Sacramento County, Cal.

YOUNG POLAND CHINAS—Large type boar, "I. B. A. Wonder," won first in class and Reserve Champion P. P. I. E. 730 lbs. under two years in breeding condition. Sows bred and sired by "I. B. A. Wonder." Also weanling pigs, either sex. Trios unrelated. None bigger. None better. $15 and up. Will please you or money refunded. W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEYS—Prize-winning stock from Iowa, Nebraska and Wisconsin. 75 head—bred cows and gilts. Also weanlings in groups of from one to five and boar unrelated of Crimson Wonder, Golden Model, Advancer, Golden Hero, Orion, Chief and Colonel blood. Price $10 and up. Haden Smith, Route 1, Box 97A, Woodland, Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

REGISTERED DUROCS—Twelve large, smooth boars, about fifteen choice gilts, all farrowed last September and October. Sired by Waukena Wonder 176555. $20.00 up. Write now. Felton & Hoyt, Hanford, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

DISPERSION SALE—Registered Poland Chinas. Herd of big sows. Herd boars and pigs of all ages. Write quick for low prices and descriptions. Roy J. Turner, Trowbridge, Cal.

BLATCHFORD'S PIG MEAL weans easily and safely; no trouble; no milk. Write for free folder, "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feed for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

REGISTERED DUROC-JERSEYS—Service boars and fall pigs. Also mature sows—bred. S. S. Southworth, Napa.

REGISTERED DUROCS of guaranteed breeding. Bred gilts, service boars and fall pigs. H. E. Boudier & Son, Napa.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen A. Day, Box 1140, Sacramento.

RANCHO RUBIUS—Durocs all sold except one service boar and a few October pigs. Spring litters will be "best ever." Elmer Lamb, Ceres, Cal.

ROSELAWN STOCK FARM—Registered Poland Chinas and Shorthorn cattle. Young stock, both sexes, for sale. T. B. Gibson Estate, Woodland, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Price and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

PLAINFIELD STOCK FARM—Registered Berkshires and Durocs. Young stock for sale, both sexes. H. M. Bullard, Woodland, Cal.

REGISTERED BERKSHIRE WEANLINGS—The quick-growing kind. Service boars, gilts and sows. J. M. Bomberger, Modesto, Cal.

PIGS OUT OF SUPERBA—Panama-Pacific Grand Champion Poland China. Booking orders now. Chas. R. Hanna, Riverside, Cal.

REGISTERED POLAND-CHINAS—The big little half-ton kind that have quality. Prize winners. Hale I. Marsh, Modesto.

REGISTERED IMPROVED CHESTER WHITE BOARS for sale from prize-winning stock. S. R. Cheney, R. 2 Lindsay, Cal.

DUROC OF QUALITY—Predominating bloods of Defender, Buddy Ky, Crimson Wonder. C. T. Thompson Bishop, Cal.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the state. $30 up. M. Bassett Hanford.

REGISTERED POLAND CHINAS—Stock from champion herd at Exposition. Dimmick Bros., Lemoore, Cal

Chinas as to economy and prolificacy. The Spotted Poland China is commanding a great deal of attention in the middle west at this time and the result of Mr. Crawshaw's experiment will be watched with interest.

HORSES.

A. L. Meredith, manager of the Rowland Ranch at Puente, has purchased the registered jack, Knox, from Thos. Murphy of El Centro. There are 20 mares on the Rowland Ranch at present, which number will be increased to 50 in a short time.

Henry Wheatley of Napa reports the sale of two aged Shire stallions, one to Jos. Williams Jr. of Contra Costa county, and one to Pat Walsh, Austin, Nevada. Mr. Wheatley states that these two sales completely depletes his offering for this year and that he could sell more if he had them.

The Blackhawk Stock Farm at Burlingame has just sold the stallion Anwick Arthur to R. F. Frisby of Thornton, San Joaquin county. Mr. Ward, the manager, says that he believes the sale price to be one of the highest ever received for a Shire stallion in this State. The horse has been a remarkable foal-getter on the Blackhawk Ranch, having earned an average of $800 annually in outside service fees besides siring approximately $14,000 worth of colts for Messrs. Easton and Ward. Mr. Ward says they will show 20 head at the State Fair this year. They have also recently sold Blackhawk Marvel, a two-year-old stallion, to Mr. Boone of Danville.

MISCELLANEOUS NOTES.

Reports from Orland state that there have been very few losses in lambing since the late heavy storms.

A rice company at Willows, Glenn county, intends experimenting with rice silage this year, as a feed for dairy cows. It is said that 12 tons of rice forage can be grown to the acre.

SWINE.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

REGISTERED HAMPSHIRES—Winners at P. P. I. E. Stock of all ages. W. T. Gatton, Box 231, Gardena, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED BERKSHIRES—Big-boned. Cholera immune. Riccomi Bros., Mountain View.

REGISTERED BERKSHIRES — Weanling pigs, $10 each. G. A. Casey, R. 7, San Jose.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES — Prize-winning stock. Sunnyside Stock Farm Perkins Cal

REGISTERED BERKSHIRES—Young boars for sale. Alexander and Kellogg, Suisun, Cal.

ROSS' DUROCS—A tip-top lot of weaned pigs. Also 27 bred sows and gilts. R. J. Ross, Route A, Modesto.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

BIG TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

PURE-BRED BERKSHIRES—Stock of all ages. Brae Bourne Ranch, Route 3, Box 172, Santa Rosa, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderas Ranch, El Cajon, Cal. M. S. Allen, Manager.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRE PIGS—Write or call. Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED POLAND CHINAS—Large type C. M. Stetson, Route "A," Ceres, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

FAIR OAKS RANCH, WILLITS, CAL.—Registered Duroc and Berkshire Swine.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

CHAS. GOODMAN — Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED BERKSHIRES—All ages. Choicely bred. U. Hartman, Ripon, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED DUROCS—All ages Either sex. W. A. Pack Hollister, Cal.

CURTIN DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY. Lakeport, Cal

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel. San Lorenzo, Cal.

WANTED—About 25 good dairy cows to be paid for in 12 equal monthly installments. Payment secured by mortgage on stock. Party reliable. Box 205, Pacific Rural Press.

VANDERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly records. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

WANTED—Any number of Holstein heifers, 18 months old to 2 years; also 40 Milking Shorthorns, same ages. D. O. Lively, 216 Hobart Bldg., San Francisco.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

TWO CARLOADS GRADE JERSEY COWS and Heifers of fine milk strain. Also 11 head of yearling Holstein Heifers, cheap. E. H. Webb, Escondido, Cal.

HOLSTEIN BULLS—Purebred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

FRANK MEACHAM, Petaluma, California — Breeder Red Polled Cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell Visalia.

BREEDERS OF REGISTERED SHORTHORNS — Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631 637 Brannan St., San Francisco.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TWO REGISTERED HOLSTEIN BULLS out of A. R. O. cows. Sired by King Mead. Ready for service. J. H. Harlan Co., Woodland, Cal.

TWO REGISTERED HOLSTEIN BULLS old enough for service. Very light in color. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

REGISTERED HOLSTEIN BULLS — Serviceable age. From finest strains. Panama-Pacific Dairy. Sutter Creek, Cal.

FOR SALE—Nine Guernseys, including Glenwood Bull, $2,000. One made 425 pounds fat. I. J. Scott, Pomona, Cal.

FOR SALE—Pure-bred Guernsey Bull, 2 years old. Advanced registry breeding. E. L. Skidmore, Route C, Tulare, Cal.

ELEVEN REGISTERED HOLSTEIN COWS—Priced to sell as a bunch at very low figure. K. W. Abbott, Milpitas, Cal.

FOR SALE—About 90 head grade Holstein, Durham & Jersey heifers from six months to three years old, all first-class. Prices very reasonable. J. S. Smith, Box 515, San Jose, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

PALENDALE HERD of Registered Holsteins. Young bulls for sale. J. A. Pelanda, Modesto, Cal.

REGISTERED JERSEY BULLS from register of merit cows. D. F. Conant, R. "B," Modesto.

BREEDERS OF A. R. O. Holstein Freisian cattle exclusively. Dirk Dairy Farm, Lemoore.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEYS — Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F Guerin. R. 3, Box 58, Visalia, Cal.

N. H. LOCKE CO., Lockeford, Cal—Choice young Jersey bulls from tested cows for sale

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

BREEDER of Registered Holstein Cattle. Ernest Ott McClure, R. 2, Modesto, Cal.

BREEDER OF REGISTERED HOLSTEINS—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams B. F. Anderson, Modesto.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd. D. & H. Rowles, Modesto.

JERSEY BULL—8 months old. A bargain. O. J. Ames, Oakdale, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson Napa, Cal.

HORSES AND MULES.

HORSEMEN, ATTENTION! — Coming three-year-old Brown Percheron Filly. Good size, well built, no blemishes. Fine brood or work mare. Sired by Monitor, imported horse. U. S. Rutan, Route B, Box 456, Modesto, Cal.

SEVEN LARGE-BONED grade Shire brood mares for sale. Weight 1450 to 1700 pounds. Five to nine years old. Guaranteed breeders. Must make room for colts. Frank B. Marks, Dos Palos, Cal.

H. G. LEARNED—Prize-winning Percherons. Mares, all ages. All bargains. No. 1 Stallions. See colts and producers' prices. Phone 5J3, Route 4, Box 22, Stockton, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

BEEF CATTLE

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco, or H. J. Macomber, Paicines, Cal.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of imported Villager 295884.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

WANTED HEREFORD BULL—two years or more. Address E. V. Buddecke Roseville.

SIMON-NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

HEREFORD BULLS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHEEP.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

BREEDER OF MERINO SHEEP—Rams for sale. J Bidegaray, Fresno, Cal.

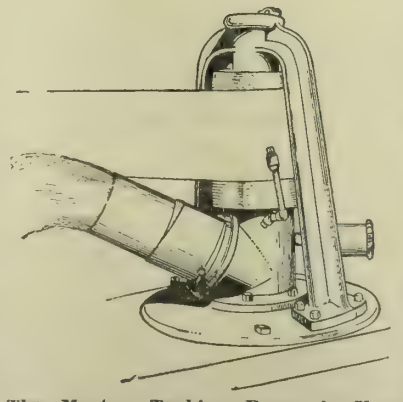
BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers, Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets, Hanford, Cal.

MISCELLANEOUS.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells live stock—any kind—any quantity

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.



The Morton Turbine Pump Is Your Logical Choice Because—

It saves you money in initial cost of pumping plant.

It pumps more water with less horse power.

It pumps 250 gallons per minute from a seven-inch well.

It pumps 1000 gallons per minute from a ten-inch well.

It pumps 2000 gallons per minute from a twelve-inch well.

Every bearing is protected from sand and water and is lubricated by force feed.

The best well—the sandy well—is the home for the MORTON TURBINE PUMP.

Write for Catalogue.

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More Butter and Better Butter

YOUR HERD should average at least 500 lbs. of butter per year. A good Jersey herd will do even better—600 lbs. per year, and the butter will be of the finest flavor, texture, and color. There are many individuals of this breed producing 1100 lbs. They make good use of every ounce of feed, do not require fancy feeding, mature early, thrive in any climate, are steady producers, are beautiful and gentle. They pay big dividends on the highest priced land.



Our latest free book, "About Jersey Cattle," tells all about the development of this hardy breed. Send for it—*now*. You'll be glad you did.

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Registered Jacks



Range raised; Guaranteed satisfactory breeders. Field Jacks a specialty. Registered Shire Colts. Will trade for young mules, horses or land.

James W. McCord
Hanford, California

Stow Royalty

Second prize aged

Shire Stallion

at P. P. I. E.
and Iowa State Fair.

Admitted the best individual Shire stallion in the West today.

I will accept a limited number of mares for service during the season 1916.

This is your opportunity to share with me the services of this great sire at reasonable price. For further particulars WRITE

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RIO VISTA, CALIF.

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A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish.* Every bottle sold is warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
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BLACK LEG

LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials.
10-dose pkge. Blackleg Pills $1.00
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Use any injector, but Cutter's best.
The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only.
Insist on Cutter's. If unobtainable, order direct.
THE CUTTER LABORATORY, Berkeley, California.

Veterinary Queries and Answers.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for $1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

ANSWER TO W. L. M., SONOMA.

[This cow has rheumatism. Give two pounds epsom salts in one gallon of warm water.]

SHOULD SELL COW.

To the Editor: I have a six-year-old cow that will not breed. She has been bred repeatedly, but after two or three months will come in heat again. Have changed bulls but with no result. What treatment would you advise?—W. D. S., Merced.

[Dispose of this animal.]

BROOD SOW SICK.

To the Editor: I have a brood sow due to farrow in about a month. It seems to hurt her when she tries to eat. She eats very little and holds her head to the ground most of the time. Can you tell me what is the matter?—J. W., Turlock.

[This sow's trouble is due to her condition, which will be relieved when she farrows.]

OPERATION FOR A LEAKY TEAT.

To the Editor: Please describe the operation necessary for a leaky teat.—E. E. G., Merced.

[Operation for a leaky teat consists of the removal of a very small V-shaped piece of skin from the teat orifice. The wound is sutured and the resulting contracting narrows the opening.]

SOW HAS RHEUMATISM.

To the Editor: Have a sow that seemed to lose control of one hind leg about a month after farrowing. She was constipated and had a high fever and I put her in a dry shed with dirt. Now, her hind feet cross and she lies down nearly all of the time. What can be done for her?—O. R. L., Gilroy.

[Your sow has rheumatism. Give her 10 grains of hexamethylamine once a day with a like amount sodium salicylate.]

MAY BE ANTHRAX.

To the Editor: Last fall I lost several shoats. The first symptoms were, swelling of throat or one side of the jaw, containing hard formation. As it developed it looked very much like a bad case of quinsy and usually lost them the day after they were taken with the disease. What was the trouble?—G. M. W., Manzanar.

[This looks like anthrax.]

MARE WITH WORMS.

To the Editor: I have a mare that has pin worms very badly. They are not in her stomach, but in just the last passage of her intestines, too far back for any worm medicine to reach. What can be done to get rid of them?—V. T. A., Merced.

[Inject one quart water with an ounce of salt in her rectum, two or three times a day.]

BULL HAS INJURED PENIS.

To the Editor: I have a young bull whose shaft was bleeding when he was last used. Since then the inner sheath has swollen in such manner that I can't use him and the pouch has a tendency to hang out most of the time. Can you advise me what the trouble is and how to cure him?—C. A. R., Maxwell.

[Your bull has injured his penis. Inject 1-1000 potassium permanganate in his sheath once daily.]

COW SICK AFTER CONSTIPATION.

To the Editor: I have a cow that became constipated after changing her ration from clover and rye hay to second crop alfalfa. I gave her a physic, and she got over it, but now I notice she does not pass water freely. When I feel her left side it seems to be hard inside. Would like to know what to do for her.—C. Z., Fort Jones.

[Give your cow one ounce fluid extract saw palmetto daily for four days.]

HORSE WITH PARASITE.

To the Editor: I have a horse colt that bites his flanks, turns round in circles and kicks high in the air. Has been doing this for eight months. His skin seems to itch, but I can see no signs of mange or lice. I feed alfalfa hay and grain. Can you tell me the probable cause?—N. B. W., Thalheim.

[This colt is troubled with some parasite. Wash him off with lime sulphur dip at intervals of seven days.]

MILK FEVER.

To the Editor: My cow freshened two weeks ago and has had milk fever twice since. I had a doctor both times who pumped air into her bag both times and gave her a capsule the last time. She has been running off the bowels for three days now and will not eat anything. Seems to be in pain for she moans a great deal, but can get up without trouble. What can I give her for relief?—A. A. Sebastopol.

[Give one quart raw linseed oil and one dram three times a day of fluid extract nux vomica.]

FARMER STENZIL'S RANCH OF 1000 WONDERS.

(Continued from page 347.)

of over 20 pounds of butter. That's not bad, is it? But I'll give them all 20 pound records before I'm through, yes sir, every one of them, and I've got several likely thirty pounders. Korndyke Ormsby Hengerveld 2nd over there made 28.91 pounds of butter for me last year as a five-year-old, but she'll do better. Her two-year-old heifer over here goes on test next week and I'll be a badly fooled man if she doesn't make better than twenty pounds with her first calf."

Ambition Aroused.—At last we had awakened that spark in this Farmer Stenzil which shows his

Tagus Ranch

BREEDERS OF PUREBRED

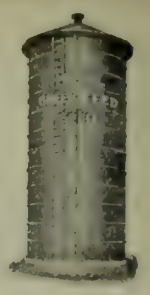
Holstein Cattle
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BERKSHIRES

Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 180837 and Breed's Model 165859, both winners of blue ribbons at State Fair.
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It isn't what you put into a Silo, but what you get out of it that counts.

WHEN YOU OPEN UP YOUR SILO, you will get the real proof of silo values. If you have an Ideal Green Feed Silo, your silage will be good. You can rest assured of that. But if you have one of the so-called "cheap" silos you will get proof of the fact that good silage cannot be produced in a poor silo. Good silage is what you want. Poor silage is worse than none at all.

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THE IDEAL GREEN FEED SILO

gives you is well worth the cost. When you consider how many more years the Ideal will last, and give you good silage every year, there is no question of its being worth far more than any other.

THE FEW DOLLARS a man may hope to save by buying a "cheap" silo will very likely be the cause of his losing, through poor silage and the short life of the silo, many times the amount he seemed to be saving on the first cost. Your good judgment should warn you against taking chances of losing your feed by putting it in an inferior silo.

THE REASONS why Ideal Green Feed Silos preserve the silage better and last longer are completely explained and illustrated in our large silo catalog, a copy of which will be gladly sent you upon request. It will pay you to ask for this catalog before you finally decide on what silo to build.

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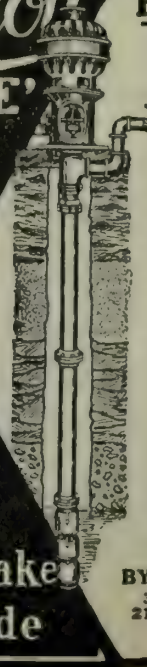


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We have several splendid grandsons of this now famous cow which we can deliver to you at prices which will suit the pocketbooks of every dairyman wishing to improve the quality of his herd, whether it be a grade or pure-bred herd. These bulls are sired by our herd bull, Prince Alcartra Korndyke and out of A. R. O. cows, and are the only living grandsons of a cow having a record of over 30,000 pounds of milk in a year. Such an opportunity for increasing production has never been offered DAIRYMEN AND BREEDERS in California, price and quality considered. Buy one of these bulls and solve your low production problem. Write

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A Better Make Not Made

For Water Deep Under The Ground

Jackson Deep Well Turbine Pumps give continuous and efficient service. They do not get out of order as they have no valves or plunger rods. Very little care or attention needed as they are oiled from the surface. Are much lower in cost than other types of deep well pumps when the expense of dug pits, cribbing and timbering is reckoned. They raise water from the very bottom of the well, thus eliminating heavy vacuums and delivering all the water the well yields. They develop slow wells and increase their flow.

Like all Jackson Made Pumps These Deep Well Turbine Pumps Are the Very Best Pumps Made for the Purpose—They are Dividend Earners, Not Expense Makers

Whatever your water problems may be our Expert Pumping Engineers will help you out free of charge—write

BYRON JACKSON IRON WORKS, Inc.
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P & O
New Victor
Combined Cultivators

Recommended for use anywhere. Has balancing lever and two depth levers; has handles and seat, and can be used as a walker or rider. Pivot Tongue Attachment furnished when wanted.



Axles telescope in steel tube, giving adjustment for wide or narrow track. Saw-toothed ratchets give minute depth adjustment, and afford quick action in raising gangs. Counter-balancing springs on gangs can be regulated for light or heavy gangs. Jointed seat rails; seat can be thrown over out of the way when walking. Low hitch with high clearance. Cone pivot gang couplings permit taking up all wear. Gangs can be set up or down to level for different depths. Gangs can be set for close or wide cultivation. 42-inch wheels with concave tires, removable dust-proof wheel boxings, hard oil screw caps, with collar and linch pins inside the screw caps. Furnished with any standard type of P & O gangs, with spreader.

The P & O Victor is strong without excessive weight, has all needed adjustments, is easy to ride and use, will do work of the highest efficiency, and has great wearing qualities.

Ask Your Dealer or Write to Nearest P & O House
Parlin & Orendorff Co., Canton, Ills.
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P&O
Light Draft Plows
Are Backed
By An
Unqualified
Guarantee

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HOLSTEINS HOLSTEINS

ALLOW us the opportunity of showing you some 200 of the choice grade cows of the state that we are offering for sale.

The Gotshall Cattle Loan Co.,
Ripon, California

HOLSTEINS

Oak Grove BERKSHIRES

CHOLERA IMMUNE

Our herd is Cholera Immune, the only Immune Berkshire herd in the State.
Fine herd boars in use and they are second to none on the coast. Our sows are of equal merit.
We know that we can supply what you want.

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OAK GROVE DAIRY FARM
H. G. ARMSTRONG, Prop.
Woodland, Cal.

PORK IS GOING UP

Now is the time to buy
REGISTERED BERKSHIRES.
I have a number of extra choice Bred Sows and Gilts, bred to or daughters of the First Prize Aged Boar at the P. P. I. E.
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BLAKE, MOFFITT & TOWNE

Dealers in PAPER	37 FIRST STREET, Blake, Moffitt & Towne, Blake, McFaill & Co.,	SAN FRANCISCO Los Angeles Portland, Oregon

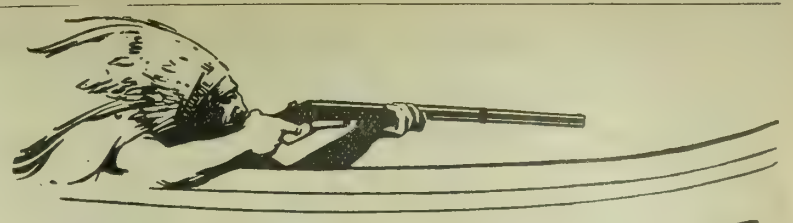
true viewpoint of things. Information came now without prompting or suggestions. He was on ground where he could visualize, where that active brain of his could see an opportunity to build. Purebreds have a habit of exciting new ambitions in a man who is naturally a builder and it wasn't surprising that Farmer Stenzil's enthusiasm got the better of his modesty long enough to relate in detail the records of some of his best cows.

Nor were we unduly surprised when he told us of his new herd bull, just brought from the east at a pretty figure, a son of King Korndyke Sadie Vale, whose first six daughters averaged over 24 pounds of butter in seven-day tests. Probably that bull doesn't appreciate all that is in store for him, but if he could just know how much reliance Farmel Stenzil is placing on him in his brick-laying fashion, we feel sure that animal would be too proud for a stranger to go near, feeling, with a perfect right, that to be one of the main cogs in that constructive machine requires out of the ordinary ability.

But don't think that ambition has got the better of sound business judgment with this diversified creator. He isn't keeping purebred cows to gratify any whim or fancy, but because it pays. He long ago figured what it costs him to feed a cow and pay interest on her investment, as well as on buildings, etc., and while his calculations were doubtless made in dollar terms originally, they were given to us on the spur of the minute in terms of gallons of milk. "It takes just about one and three-quarters gallons a day at 15 cents a gallon to pay the running expense, plus interest and so on per cow," was the way he put it. "Then you're making pretty good money out of the dairy," we suggested. "That's right," he replied, "the dairy is paying me well. And of course there's the fertilizer. That's quite a factor on this ranch, and last year I covered 75 acres from the dairy. Most of it went on the rhubarb, as that's a strong feeder, and we used to have to buy manure in the city for it."

Needs a Name.—As we look back over that short but busy day's stay on Farmer Stenzil's ranch, trying to find a weak spot somewhere, we can call to mind only one omission worthy of criticism; the ranch has never been named. Perhaps while it was being pieced together into its present large proportions, giving it a permanent name was impracticable because of its changing disposition. Many a name that fits a short-panted boy don't go well with a six-foot-two man, and the same probably holds true with a ranch.

But now Farmer Stenzil's ranch is of man's size caliber and if the writer had his way, that office, with it's prepossessing outside appearance, would have just one more adornment which would read like this: "Office"—"One Thousand Ranch." The "One Thousand," you see, is appropriate, because it suggests bigness, whether applied to enterprises, men or acres, and all of those things are embraced in that ranch. We'd be sure to have the word "Office" stuck around somewhere, because—well, what else can it be if it isn't for ornamental purposes?



Fortified

Fortified against the dangers of skidding and drive slip by the Savage Grip Tread.

And a good long run for your money every time. Adjustments on the basis of 4,500 miles.

You buy direct from factory. Write today for address of your distributor and our money-saving sales plan.

Ask for Tire Book No. 1318.

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A perfect hinge joint is formed at every second cable, making an elastic, long-life fence yet sufficiently rigid to prevent sagging. Made of tough, springy steel with a thick coat of galvanizing that adds to appearance and resists weather.

American Steel Fence Posts—cheaper than wood and more durable. Last a lifetime. *Sent Free*—write for booklet on how to set posts and erect fence. Every farmer should have it.

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Planet Jr. Wheel Hoe



gets bigger crops with half the work.

This **No. 16 Planet Jr Single Wheel Hoe, Cultivator, Rake and Plow** is the highest type of single wheel hoe made. Light and durable—can be used by man, woman, or boy. Will do all the cultivation in your garden in the easiest, quickest and best way. Strong indestructible steel frame. High, easy-running steel wheel. Costs little, and lasts a lifetime. 14 other styles of wheel hoes—various prices.

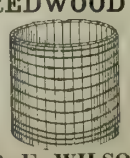
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Correct in every detail. No trouble. Cheaper water. Perfect satisfaction. 3 Irrigation Booklets free. Luitwieler Pump Eng. Co., 713 N Main St., Los Angeles.

Poultry for Profit---Producing and Marketing.

MATURITY OF FARM POULTRY.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

The question very often arises as to what variety of poultry will give the best results to the farmer.

Now the average farmer is not, as a rule, situated close to the market, nor has he the time to specialize as an egg producer. Therefore, what he needs is a dual purpose fowl; one that will lay a profitable number of eggs and then bring a reasonable price when sent to market.

I have told you many times that all of the large breeds of hens lay a colored egg; also that all large breeds without exception have red ear lobes, so that when you buy you will understand what kind of eggs these hens will lay.

Some people cannot understand why a White Rock or White Orpington does not lay a white egg the same as a White Leghorn. Color of plumage plays no part in the color of eggs. The ear lobes are the best signs to follow.

Heavy Breeds.—In the large breeds there is much more choice among the dual purpose fowls than among the small breeds. Some breeds do better in our climate than others, but they all have friends and can be made profitable.

The Black Langshan, which from its heavy-feathered legs and abundance of feathers would very naturally be supposed to do better in a cold climate, is bred in Pasadena and Los Angeles by people who make good claims for them.

The Brahma is next in size and feathers and these majestic birds make as good roasters, but, like the Langshans, are a little bit too heavily hampered with weight and feathers to be very popular in this climate.

What the farmer wants is a fowl that can carry some flesh and still be active, lay a good average number of eggs that will prove fertile and hatch. Very large breeds of any kind of poultry or water fowl lay more infertile eggs than those of medium size and weight. This should always be borne in mind. It is true of turkeys, geese, ducks and poultry.

Age of Maturing.—There is little difference in the age of maturing pullets of the different breeds, the very large breeds being the slowest to mature. The Faverolles and Rocks come next, but even here it is not so much the breed as the strain and the man who cares for and feeds the pullets. Leghorns are supposed to mature and lay in five months, but I have known of cases where they did not lay till eight or nine months. With proper feeding Orpingtons and Wyandottes will mature and lay almost as young as Leghorns, because they grow fast and do not run the flesh off their bones. But even with neglect they will lay at seven months if they have any range at all where they can pick a little.

Leghorns are supposed to mature in five months, but often run up to seven and eight months. This may be caused from having a strain that has not been selected for early maturity, from wrong feeding or poor housing. And the same thing would cause the large breeds to mature late, even though they came from an early maturing strain.

So this early maturing of birds is almost always a matter of properly caring for and feeding the stock, no matter what the breed may be. This question is brought up here because so many people are really afraid to buy the fowls of their choice because some one has told them that such and such a breed does not lay till it reaches a certain age.

When It Pays.—Early maturing is not always advisable because sometimes it is at the cost of health, in small breeds, and size in the large breeds, so that it is always better to feed first for health and size and second for early maturity.

A small-sized hen from any of the breeds that call for a hen weighing seven to eight pounds will lay quite as many eggs, but when you come to dispose of her for market there are not so many pounds to weigh in at a good price.

PROMISING FUTURE.

[By Geo. H. Croley.]

We have received a copy of Game Farming for Profit and Pleasure, a beautifully illustrated booklet of 64 pages, by Clement B. Davis. It treats of the wild turkeys, grouse, quail, partridges, and wild ducks; with special reference to their food, habits, control of natural enemies, and the best methods of breeding.

The time is fast approaching when the domestic raising in California of what is now termed wild game may become a great source of profit. Our local conditions are generally so much more favorable for the successful and profitable production of these wild fowls than in other states—where these birds are now extensively bred in captivity—that the establishment of a good eastern market for them for table purposes is only awaiting a supply extensive enough to attract attention and warrant the employment of the ways and means of marketing.

When intelligently bred and properly cared for, these wild fowls multiply with great rapidity. It is stated that one pair of any species of quail and its progeny, at a low estimate, would produce over five million birds in eight years if there were no losses. In a wild state, the great loss occurs in the destruction of all but a few of the eggs by a multitude of enemies which can be guarded against when the birds are reared in captivity or semi-captivity.

This booklet is published by the Game Breeding Department of the Hercules Powder Co., Room 155, Wilmington, Del. For the accommodation of the readers of this publication, we have arranged to have a copy sent free to those who write to the Hercules Powder Co., Chronicle Bldg., San Francisco, and mention the Pacific Rural Press.

SOME REASONS FOR POOR ARTIFICIAL HATCHES.

[By Geo. H. Croley.]

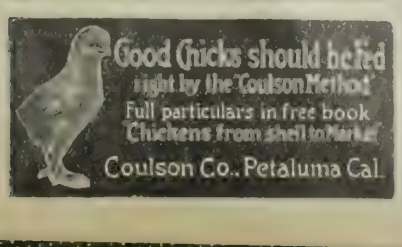
In operating an incubator it is usually a safe plan to carefully follow the directions that are furnished by the manufacturer with the machine. However at times some advantage can be gained by a little independent experimenting provided too many innovations are not undertaken at a time.

A number of very careful experiments have recently been conducted with a variety of incubators and the following general suggestions based upon the results of these experiments may be of value to those operators who, because of unsatisfactory results, are inclined to experiment for themselves: Excessive ventilation through the incubator and too much cooling and turning of eggs during the first 12 or 14 days of incubation caused many strong, fertile eggs to die. Eggs should not be turned or cooled off during the first three days; turn them once a day and cool for 10 to 20 minutes—according to the temperature of the incubator room—but once daily from the fourth to the tenth day; turn twice daily and cool, at each turning, from 10 to 20 minutes from the eleventh to the fourteenth day; turn three times daily and cool 15 to 30 minutes at each turning from the fifteenth day until the eggs pip; then close the incubator, and keep it closed, until the chicks have hatched. After the fourteenth day provide increased ventilation through the incubator and maintain an ample supply after the eggs have pipped and the eggs are no longer aired outside of the machine.

Too rapid or too great ventilation directly through the bottom of the incubator often causes vigorous, well-

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MORE EGGS
PACIFIC PIONEER
AVAILABLE PROTEIN FISH MEAT MEAL FOR POULTRY
CHEAPER TO FEED
NO FISHY FLAVOR


Good Chicks should be fed right by the Coulson Method
Full particulars in free book Chickens from shell to Market
Coulson Co., Petaluma Cal.

Pride of Petaluma, Fresh Air Brooder STOVES



This is our latest and best. It's self VENTILATING. Automatic in every respect.

MOIST FRESH AIR DIFFUSED from the base to chicks. It's the standard of reliability and economy. Don't fail to get our catalogue, or call and see us.

Fresh Air Brooder Stove Factory
J. E. KRESKY, 307 Washington St., Petaluma, California.

HOPLAND STOCK FARM
POULTRY DEPARTMENT, HOPLAND, CALIF.
Best Equipped Poultry Farm in California. Sanitary conditions perfect.
EGGS FOR HATCHING AND BABY CHICKS.
Breeding Pens now mated with large-sized, healthy matured breeding birds. All open-air housed, thus promoting strong sturdy chicks.

STANDARD-BRED SINGLE-COMB WHITE LEGHORNS.			
Hatching Eggs, $1.50 per setting		$5.00 per	100
Baby Chicks, February delivery		12.00 "	100
" " March "		10.50 "	100
" " April "		10.00 "	100
WHITE PLYMOUTH ROCKS.			
Hatching Eggs, $2.00 per setting		$ 7.00 per	100
Baby Chicks, 20c each		15.00 "	100

In the Utility Class at the P. P. I. E. Poultry Show our Leghorns received 4 awards, and on Eggs 1st and 2nd.
Our White Plymouth Rocks received 7 awards, and on Eggs 1st and 3rd.
BOOK ORDERS NOW TO MAKE SURE OF DELIVERY.
Terms—10% deposit with order, balance before shipment.

TURKEYS
Our stock are the Mammoth Bronze of early maturity. We are now booking orders for April and later delivery, as may be desired.
Young Toms
We have some late-hatched Toms suitable for present service. Purchase now and have them for a year hence. Price, $6.00.
Correspondence solicited.
JOHN G. MEE, St. Helena, Cal.

Baby CHICKS and EGGS
We will book your order for Chicks or Eggs for future delivery.
EXTRA SELECTED BLACK MINORCAS & WHITE LEGHORNS OUR SPECIALTY
Our Chicks are hatched in the
BEST VENTILATED HATCHERY IN CALIFORNIA
INSTRUCTIONS HOW TO RAISE CHICKS FREE
HICK JUBILEE HATCHERY, Route 2, Box 22, Petaluma, Calif.

developed chicks to die in the shell on the twentieth day of incubation because too much of the carbonic acid formed in the process of incubation, escapes. This acid, diffused in the damp air about the egg, is necessary to condition the shell so that it may be easily broken by the chick at hatching time.

An improperly prepared nest for a setting hen produces the same result. If the nest material is so coarse that it will not pack well, the eggs receive too much oxygen and the carbonic acid gas runs away through the openings between the coarse nest material.

When dressed, ducks are plumped by plunging them into a tub of hot water for a moment and then into cold water until the animal heat is expelled.

Poultry Breeders Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

2000 WHITE LEGHORN PULLETS, 3 months old. Price according to quality. All kinds of breeding and laying hens, roosters and pullets. Petaluma incubators, new and used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minorcas, Buff, White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards, 2550 San Pablo Ave., Oakland, Cal. **Closed Sundays.**

PROFESSOR DRYDEN, THE FAMOUS 300-EGG HEN SPECIALIST, STRONGLY RECOMMENDS APRIL CHICKS—Orders now being taken for April delivery from our flock of 635 White Leghorns, which averaged 171.2 eggs each the past season, flock housed together. We breed for heavy winter egg production. Price $10 per hundred. Order at once. BROOKE FARM (Rancho Del Paso). Office 807 J St., Sacramento, Cal.

WYANDOTTES—Beautiful, useful and profitable. Best for showing; best for egg-laying; best for table. Largest Wyandotte Farm in the Southwest and the only complete family of Wyandottes known. Eleven varieties and each from the finest strain bred in the United States. Hatching eggs and baby chicks reasonable. Write us for full particulars. VILLA WYANDOTTE FARM, Villa Road, Lamanda Park, Cal.

LIVABLE BABY CHICKS—We are supplied by reliable Breeders and experienced hatchers. Better chicks cannot be had from any source. All varieties, any number, High quality birds, bargain prices, breeders, laying hens, pullets. **Free exhibit.** Everything in Poultry, Pigeons, Rabbits, Dogs, Cats, Canaries; Pets. Give us a call or write. **Fanciers' Exchange,** 642 S. Main St., Los Angeles, Cal.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. Lay most when prices highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for heavy laying. Eggs, chicks, stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired **Heavy Winter Layers.** W. C. Smith, Prop., Corning, Cal.

WELL HATCHED AND STRONG day-old chicks from healthy vigorous breeders. White and Brown Leghorns per 100, February $11, March $10, April $9. Reduction in quantities. Let us send you our announcement. San Jose Hatchery, 373 Meridian Road, San Jose, Cal. **Chicks well hatched are half-raised.**

WHITE PLUMAGE POULTRY FARM and Hatchery. Sells day-old chicks from healthy, vigorous breeders. White Leghorns at $10 per 100, $90 per 1000. Barred Rocks and Rhode Island Reds at $15 per 100. We sell the Victor Incubator and Brooder. Circulars free. H. A. Schlotthauer, Exeter, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396, Los Gatos, Cal.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

BABY CHICKS—All sturdy youngsters from good stock and hatched right. Rhode Island Reds. Barred Rocks. Black Minorcas, White and Brown Leghorns. Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

BUFF ORPINGTONS, BUFF LEGHORNS, BOURBON RED TURKEYS, BUFF DUCKS—Winners at Riverside, Pasadena, Los Angeles and San Francisco. Breeding stock. Hatching eggs. Baby stock. Free illustrated booklet. The Ferris Ranch, R. 2, 144D Pomona, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., INC., Poultry Supplies, San Francisco.

ENGLISH WHITE LEGHORNS—Anconas and Buff Orpingtons. 200 egg strain. Hoganized eggs. $1.25 setting; $6 hundred. Roseville Poultry Ranch, Roseville, Cal.

INCUBATOR CHICKS—White Plymouth Rock, White and Brown Leghorn. Highest class of stock bred to standard and to lay. If you are interested in the best send for Catalogue. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

ORPINGTONS, BUFF and WHITE—Black Minorcas and Carneaux Pigeons. Cockerels ready for service. Susan Swaysgood, Route 2, Pomona, Cal.

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Calif.

WHITE LEGHORNS—RHODE ISLAND REDS—Trapnested and Hoganized. Breeding from not less than 200 egg birds. Booking orders now. Hatching Jan. 25th-June. Monte Vista Poultry Farm, Z. W. Wright & Son, Ontario, Cal.

HATCHING EGGS from thoroughbred Barred Rocks, White Rocks, Reds, $1.50 per 15, prepaid; Buff Minorcas, Blue Andalusians, $2; Indian Runners, $1.45. Six Buff cocks, $2.50 up. Cedarhurst Ranches, Route 2, Box 1462.

BABY CHICKS—Strong and healthy from high-bred, free-range White Leghorn stock. Prices on application. Also orders taken for day-old chicks from other breeds. Western Hatchery, W. S. Waldorf, Petaluma, Cal.

ORDER NOW if you want strong, healthy S. C. White Leghorn chicks from Jackman's pure-bred egg producers. $80 per thousand. Hatching eggs, $4 per hundred. Sunnyside Poultry Farm, Route 2, 1610 Vine St., Sacramento, Cal.

BABY CHICKS — White Leghorn, Black Minorcas. We guarantee safe arrival and full count. Strong, vigorous chicks. 1916 catalogue contains instructions on care of baby chicks. Free. Lasher's Hatchery, Petaluma, Cal.

BABY CHICKS—White Leghorns, $9.50 per 100; $45 per 500; $90 per 1000. Express prepaid and full count of live chicks guaranteed at destination. Oswald Miller Robertson, Roseneath Egg Ranch, Arlington, Cal.

S. C. RHODE ISLAND REDS, exclusively. P. P. I. E winners. Breeding stock, baby chicks to order. Hatching eggs from trap-nested stock a specialty. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

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BLACK MINORCA COCKERELS — Eggs, Trios. Reasonable. Chester Fosgate, Campbell, Cal.

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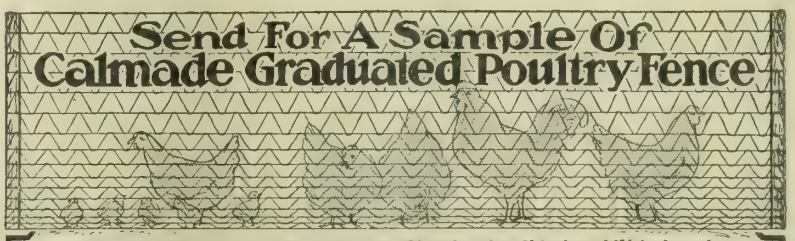
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The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends: The Fashion Shows are on in full force and even if we cannot indulge in any of these wonderful new creations we can get ideas to use in our home dressmaking.

One very new idea was a cloth combination of blue serge and white serge with a hair-line of blue in it. The gored skirt was of the striped goods with a broad band of the solid color while the waist was of the solid color with large revers of the stripe. It suggested endless combinations of materials.

Black and white checked suits are evidently going to be very popular—ranging from a very indistinct check to one that is so noticeable that all your friends would know you by your suit as far as they could see you.

For simple afternoon dresses, the shops are showing prettily flowered voiles and crepes in inexpensive materials which would want to be made in the new full skirts, either plain or ruffled and rather snug fitting waists very closely resembling the dresses our grandmothers wore. There are very good-looking collars to finish the necks offered very reasonably, some of them regular fichu effect with ends extending to the waist.

While the necks of the dresses are low, there is no indication of short sleeves—everything whether dressy or utilitarian is long-sleeved and sometimes a deep ruffle that almost covers the hand.

For better dresses, the new awning stripe silks are very effective—the stripes are fully three inches wide and there is at least one thing in their favor—they would need no trimming. Rose is without doubt the leading spring color. You see it in sport suits, sweaters, taffetas, scarfs and hats and some of the very newest blouses are made of rose linen with collar and cuffs of white and white crocheted buttons. These blouses are certainly attractive but rather formidable in price, due, no doubt, to the fact that they are new, but they could be copied at very little expense.

There are always lace waists or lace and crepe combinations for dressy wear and one of the newest conceits is a peplum waist to wear on the outside of the skirt. The stores are showing very attractive lace camisoles, or, as we have always termed them, corset covers, for wear under these thin waists.

Capes or cape effects are seen on a great many garments, from the semi-tailored coats to the soft taffetas. In many cases, they are wonderfully quaint and pretty.

In the shoe shop windows, the high shoes seem to be leading in favor, but with the popularity of spats I think we are sure to have the low shoe in use again. The spats or gaiters can be purchased in various colors to harmonize with the costume.

Next week we will discuss the Easter bonnet. Devotedly,

Rosabella Best.

(Note—Readers wishing information from Mrs Best, care of the Rural Press, will receive a reply if they enclose a stamped addressed envelope.)

APPETIZING LENTEN DISHES

The following recipes will be acceptable to those who are abstaining from meat and also those who find a welcome change in fish and egg dishes.

Sardine Loaf.—Take one can large sardines, two eggs, two tablespoonfuls melted butter, two cupfuls bread crumbs, pinch of cayenne pepper, and salt to taste. Mix all together well, turn into oblong pan, cover and bake one hour. When cold cut in thin slices. This is excellent for sandwiches or served cold as a luncheon dish.

Creamed Salmon.—For creaming salmon or other canned fish, shred the salmon with a fork and serve hot on toast in a thin white sauce composed of two melted tablespoonfuls of butter into which is well stirred a tablespoon of flour. Add very gradually, a cup of milk, with ¼ teaspoonful of salt and a dash of pepper. Beat until smooth and creamy.

Curried Eggs.—One slice onion two tablespoons melted butter, one tablespoon flour, one teaspoon curry powder, ¼ teaspoon salt, 1¼ cups milk, five hard boiled eggs, cut lengthwise in quarters. Brown the onion in the butter and add the flour; stir in the milk, stirring until it thickens and season with pepper and salt. Add the eggs and cook long enough to heat thoroughly and serve at once with hot boiled rice.

ORANGE DAY.

On the day this copy reaches you, California will be celebrating Orange Day. While generally the most enjoyable way to use that fruit is without any preparation, eating it from the hand, still a few recipes may not come amiss.

Orange Marmalade. — Orange marmalade is a very delicious preserve to serve with toast for breakfast or with muffins and tea in the afternoon to a visiting neighbor. Take one doz. oranges, four lemons; wash and slice very thin, being careful to remove any seeds. Put in granite pan, cover with 4 qts. cold water and let stand over night. In the morning, after boiling two hours, add 8 lbs. white sugar and boil about an hour longer or until it will jell. Put in glasses and cover with paraffine.

Orange Cake—One cup sugar, ½ cup butter, 3 eggs, ½ cup milk, 1½ cups flour, 1 teaspoon soda, 1 teaspoon cream of tartar, grated rind of orange. Cream sugar and butter, add the well beaten yolks of the eggs, then the rind of the orange. Stir in the milk and flour (with cream of tartar and soda well mixed in) alternately, then add the stiffly beaten whites of eggs last—folding them in very carefully. For the frosting—take 1 cup powdered sugar, piece of butter size of walnut creamed together; two tablespoons orange juice, enough milk to stir, then beat well—no cooking. This form of frosting spreads very well with much less effort than the boiled icing.

Fruit Punch.—Two cups sugar, 4 cups cold water, 2 cups chopped pineapple or 1 qt. can, 1 cup orange juice 1½ cups lemon juice. Boil water, sugar and pineapple 20 minutes. When cool, add fruit juice and dilute with water. Other fruits, such as bananas, or cherries can be added if so desired.

PREVENTING DEAFNESS.

Medical science seems to have made little progress in the cure, or rather the prevention of deafness. In many cases the trouble develops so gradually that the first stage, which is often congestion, has been passed before medical advice is sought. It is in this first stage that help can often be secured, while later, there is no relief except the use of mechanical contrivances and these are not always helpful to everyone.

All children who have a tendency to catarrh or ear troubles should be watched carefully — they should never have water run into the ear and should not be allowed to sleep in a direct draft.

SWEET PEAS.

The growing of sweet peas successfully is not always accomplished, due very largely to wrong methods.

For early blooms, peas should have been planted last autumn, but it is not too late to plant now for mid-summer blooming. Sow the seed in trenches at least six inches deep and cover with about an inch of the soil thrown out when the trench is made. When the plants are about three inches high, fill in around them with more soil and keep adding as the plants grow until all the soil has been returned to the trench.

The object of this is that the roots of the plants need to be deep in the ground to insure coolness and moisture during the mid-summer heat.

For support, brush about six feet tall with branches close to the ground is good if you can secure it; if you cannot, coarse meshed netting fastened to stout posts will be very satisfactory.

The soil should be of moderate richness and as the plants grow, either well rotted stable manure or bone meal should be added.

The two insect pests that trouble peas the most are the red spider and the aphis or green plant louse.

If the vines are infested with the red spider, the lower leaves turn white and spraying with clear water is about the only remedy. For the aphis, you will need a nicotine spray to be effective.

Do not make the mistake of using inferior seed, as the effort of growing poor flowers is no less and they do not prove satisfactory.

There are very many varieties of seed on the market. One of the best is called the "Spencer" which comes in many dainty solid colors. It has large fluted petals and is very fragrant.

THE PUPPY AND THE CARPET-SWEEPER.

Do you see that awful Monster
That Nora just brought in?
The sight of him's enough to make
A little pup grow thin.

He eats up ev'rything he finds
Upon the carpet there.
I jump, and growl, and bark at him,
But little does he care;

I've had that thing attack poor me,
Without the slightest cause;
When I was on the rug, he jumped
To gobble up my paws!

If Nora hadn't held on tight,—
As tight as she could hold
To that long round hard tail of his,—
This tale had not been told.

It's all that Nora,—strong, brave girl!—
Can do, to hold him tight;
At last, though, she can conquer him,
And put him out of sight.

She shuts him in the closet small,
Where it is still and dark;
And I'm so glad, I sit outside
That door, and bark and BARK!

—Ray Russell Jewell, in Little Folks.

HOW FAT SUSIE HELD ON.

Roguish, brown-eyed Mud Murdock waited until Miss Ridley's back was turned and then deftly threw a bit of twisted paper on Susie Ward's desk. When she innocently flattened it out, it proved to be a drawing of a fat, fat child under which Mud had printed in big crooked letters so that there should be no doubt in Susie's mind, "This is you!"

Susie gulped, blinked rapidly, and turned a gorgeous poppy-red. Then she rushed to work on her tomorrow's spelling lesson so that Mud should not know how keenly she felt about his picture. In spite of her best efforts to study, however, the words danced up and down on the printed page. Suddenly a silver tear from somewhere dropped down on the head twenty-second lesson. Susie rubbed her eyes with her little linen handkerchief and was sure she was the unhappiest girl in the world.

"I'd exchange places with any girl in this school," she thought bitterly, "except perhaps Hattie Tibbetts, as I'd rather be fat than dirty." You see, Susie's plumpness was the great sorrow of her life. But strange to say, there were no less than three girls in her class gazing enviously at her clear, rosy complexion, her heavy golden curls and immaculate white middy blouse and trim blue serge skirt, and wishing that they were Susie Ward.

The morning dragged away slowly. Susie and Dusty Gray took the whole sixty minutes of the arithmetic period to finish the eight problems which slim, gypsy-like Adelaide Spinney and Mud Murdock easily completed in fifteen minutes. Susie felt a little better when Miss Ridley announced that she and Dusty had the only two perfect papers, but her round little face clouded over again when Miss Ridley said absently, "Susie, will you please run down to Mr. Alexander's office and get some gray paper?" and she had started up eagerly, to have Miss Ridley add, "Perhaps, as I am in such a hurry, Adelaide had better go."

Susie crouched down over the map of Asia to hide her red face from the eyes of her schoolmates. Suddenly

the fire-gong clanged—not the slow "one, two, one, two," which meant to go slowly to the dressing-rooms and get your coats and hats, but the quick "one, two, three, one, two three," which was the summons to pass out in haste.

Susie took the hand of the child next to her, who happened to be Dusty Gray, and joined the row of children who were filing decorously out in pairs.

Miss Ridley glanced with wrinkled brows at 6B, from whose doors not a single child had yet come, and said crisply: "To the front stairway. Wait for the first-grade children to get out first." Susie and Dusty were first by this time, and they quickly led the way down the narrow stairway while Miss Ridley dashed into 6B, where a bewildered substitute teacher was commanding the frightened children to sit still in their seats. While she was marshalling the pupils out things were going very badly on the first floor.

The regular leaders of the first grade line were absent, and then somebody fell and broke the whole line. Consequently, in spite of the calm little first-grade teacher's best efforts to get the little people out quickly, there was a delay of several minutes, which seemed endless to the children of 6A and 6B, who were waiting on the stairway. Miss Ridley glanced through the upper dressing-rooms to make sure that there were no loiterers, as she did not realize how badly she was needed on the narrow stairway where Susie and Dusty stood like statues on the lowest step.

Susie threw back her head a little. She was sure she smelled something burning. She looked over at Dusty, who also wore a queer expression. A little gray puff of smoke came up from the basement stairs. Adelaide Spinney's eyes grew big with fright, and she gave Susie a push.

The other children behind her screamed too, and the whole line pushed against Susie and Dusty.

"Stay back, stay back!" called Dusty, who was the kind of fellow who never loses his head. "You'll trample the first-graders." Then he turned to Susie: "Hold on to the banisters with all your might."

Susie was cool, too. She exerted every bit of her strength to keep the line from sweeping her along. Her hands were bruised and swollen, but she clung desperately to the big newel-post. She shut her eyes and closed her mouth tightly, and held on, although it seemed as if she must give way.

Then she heard Miss Ridley's silver voice. "Pass, Susie and Sterling."

Out they passed and all the rest of 6A and 6B, for the frightened wee folks had gone at last.

Somewhat to the secret disappointment of a few of the boys, it wasn't a real fire after all. The tiny blaze among some waste papers was extinguished without the aid of firemen, and the little gray curls of smoke vanished as quickly as they had appeared. The children stood quietly about the playground, waiting for further instructions, while the white-faced first-grade teacher, Miss Ridley, and the principal, Mr. Corwin, talked together. Then the bell clanged again, a series of short, quick strokes, and the boys and girls formed in line ready to pass again into the school-house.

When the children were perfectly quiet, Mr. Corwin held up a little silver cup. "You all know what this is, boys and girls. The names of the pupils who have helped the school the most are engraved on this. Here is the name of the boy who won the prize essay last year, and here is the girl's name who had the best garden in the city, and so on. I will not take the time to read the list of these children who have done something for their school. We have two new names to add for their brave conduct of this morning, Susie Ward and Sterling Gray. If they had not held their lines back the smaller children would have been badly hurt."

There was a good deal of clapping, and then Mr. Corwin continued, "School is dismissed for the rest of the morning."

The first-grade teacher hurried up to Susie and put her arms around her. "You dear child," she said as she kissed her.

"I'm glad I'm fat now," confessed Susie. "If I had been little like Adelaide I couldn't have done it."

"You're a roly-poly, as your mother was," smiled the first-grade teacher.

"But mother isn't fat," objected Susie, stoutly; "she's straight and slender and lovely."

The first-grade teacher took the little bruised, swollen hands tenderly in hers. "And Susie will look just like mother by and by."

Susie smiled, a cheerful, comfortable little smile, which shone out in her cheeks and eyes. "I'm glad I'm fat now," she announced, "and I'm glad I shall be slender some day."

And she raced home to tell her mother about it.—Mary Davis, in the Springfield Republican.

Her Preference. — Sunday School Teacher—You must grow up to be good. Don't you want to be looked up to? Little Emma Wayup—No; I'd rather be looked around at.—Judge.

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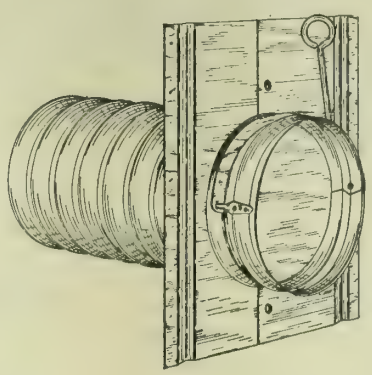
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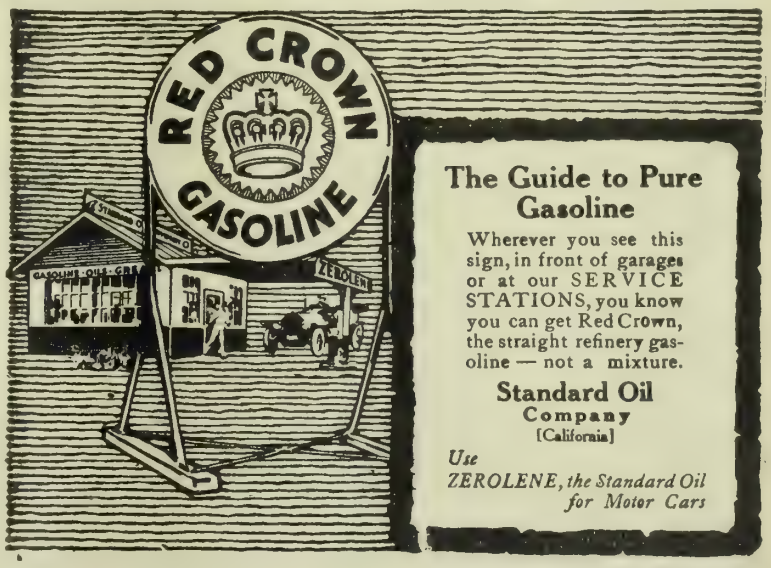
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TREATMENT OF SIMPLE INJURIES.

Splinters.—To remove a splinter, take an ordinary penknife blade first made surgically clean by boiling in water or made antiseptic by immersing in alcohol and passing several times through a flame; slip the point of it under the splinter, hold splinter against the blade with the thump nail and draw it out.

Insect Bites and Stings.—The sting of a bee, wasp or hornet is usually left in the wound and should be removed if it can be found. Then apply hartshorn, baking-soda solution or salt water. Such solutions also will relieve mosquito bites.

Sprains.—Sprains are not such slight injuries as often imagined. The most important thing is absolute rest, with as little handling as possible. Wrap the injured part in a folded towel and apply hot water continuously for one-half hour, then bandage tightly.

FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS.

San Francisco, March 15, 1916.

WHEAT.

Wheat values here show no further change. A freer movement at Eastern rail terminals has caused a little firmer feeling in some markets, but has no appreciable effect in this district, while trading is limited to local requirements.

Cal. Club, ctl	$1.65@1.70
Northern Bluestem	1.85@1.90
Northern Red	1.85@1.95

BARLEY.

Fear of an embargo on importations to England is having a rather disquieting tendency on the future markets, and trading is quiet, though the spot situation gives no ground for anxiety, offerings being moderate and steadily held. Feed has been marked up a little.

Shipping, ctl	$1.40 @1.42½
Choice Feed, ctl	1.35 @1.37½

OATS.

There is no change in this grain, business locally being of small proportions. Good white oats are firm, other grades being only fairly steady with ample supplies.

Red Feed	$1.35@1.37½
Red Seed	1.45@1.65
White	1.50@1.55
Egyptian	1.50@1.55

CORN.

Kaffir has been marked down a little. Good lots of Milo and Egyptian are steady as quoted, but there is plenty of inferior stuff coming in, for which prices are low and irregular.

Eastern Yellow, ctl	$1.80@1.85
Milo Maize	1.40@1.45
Kaffir	1.60@1.65
Egyptian	1.50@1.55

BEANS.

The bean market is decidedly uninteresting. Only one change is noted this week, and that is a drop on blackeyes. There have been various reports of a reviving movement to the East, but local dealers report business very quiet in practically all varieties. A larger demand is expected to start in at any time, however, and would no doubt strengthen prices materially.

(On wharf, San Francisco.)

Bayos, per ctl	$4.60@4.70
Blackeyes	3.20@3.30
Cranberry Beans	4.75@4.85
Horse Beans	3.25@3.50
Small Whites (south)	5.60@5.70
Large Whites	5.75@5.90
Pinks	4.30@4.40
Limas (south)	4.30@4.40
Red Kidney	6.50@6.75
Mexican Reds	4.50@4.65
Tepary Beans	4.00

SEEDS.

The leading dealers are quoting alalfa higher, as good seed is getting scarce, and there has been considerable inquiry. Some other lines have also been marked up a little, though there is little activity in most of the descriptions quoted.

Melilotus Alba	23 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	5 c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Alfalfa, per lb.	22 @24 c
Sudan Grass	40 c

HAY.

The large arrivals for several weeks stocked up the local market rather heavily, and as a result the market has been heavy, with offerings moving slowly. This effect has been the more pronounced as the demand is not very active here, and outside requirements also have diminished rapidly, as many districts are now able to rely on green feed. Prices, however, are well maintained, and for the last week arrivals have been much lighter. There is little movement to the north and south, and some, but not much, for export. Alfalfa is in ample supply, with expectations of an early first cutting.

No. 1 Wheat	$13.00@16.50
No. 2	12.00@14.50
Tame Oats	12.00@18.00
Wild Oats	12.00@14.00
Alfalfa	15.00@18.00
Stock Hay	10.00@12.00
Straw, per bale	25@ .40

FEEDSTUFFS.

All values stand as before. Supplies in some lines are rather light, keeping prices firm, but the demand is considerably lighter than it has been.

(Wholesale prices per ton, carload lots, San Francisco.)

Beet pulp, per ton	$22.50@23.50
Alfalfa Meal, per ton	20.00@21.00
Alfalfa Molasses Meal per ton	21.00@22.00
Bran, per ton	26.50@27.50
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00@25.00
Cracked Corn	39.50@40.50
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Tankage	45.00
Rolled Oats	29.50@31.00

DRIED FRUIT MARKET SITUATION.

THE situation on prunes and peaches is still too uncertain to offer any inducements either to buyers or sellers to take any immediate action, either on spot or future fruits. The Prune and Apricot Growers' Information Bureau, in a circular just issued, advises growers to sell no prunes at present prices; that the embargo will help the market if growers stand firm, as it will mean the shipment to England as soon as possible of all stocks already bought for that market. This is expected to leave domestic markets very lightly supplied, present New York stocks being far below last year. Private advices have been received from San Jose, reporting some sales last week at 3¾c, but a subsequent stiffening to 4c or over. Our former quotations still stand. A leading local packer says: "We are all up in the air, and the cooler everybody keeps, the better it will be for both growers and packers." While it may be impossible to get the prices received earlier in the season, the effect of efforts to force the market, either on spot or future fruit, would be disastrous.

VEGETABLES.

Nearly everything on the list is easier, as offerings from nearby points have been coming in quite freely, and goods shipped from a distance find but a limited sale. Sprouts are about gone, while artichokes are easier. String beans, peppers, and eggplant from Florida are much weaker; while Mexican tomatoes find a good demand. Peas are offered freely and are rapidly declining. Receipts of rhubarb have been excessive and it is much lower, with little stock bringing the top figure. Supplies of asparagus also have increased greatly and while the Eastern shipments are heavy, local prices are easy. Over 2,600 boxes came in Tuesday. Lettuce is also lower, while celery remains pretty steady.

Cabbage, ctl	50@60 c
Cauliflower, doz	50@60 c
String Beans	10@20 c
Peppers, bell, lb	15@20 c
Rhubarb, box, Bay	1.00@1.[illegible]
Peas	6@10 c
Tomatoes, Mex., box	2.00@3.00
Eggplant, lb	15@20 c
Celery, crate	3.00@3.50
Artichokes, doz	20@50 c
Lettuce, small, crate	.75@1.00
Asparagus, lb	5@ 7 c

POTATOES AND ONIONS.

Values in this line show very little change, as the market is still relying on old stock, much of it brought from a distance. A large lot of River onions that had been held for an advance have been dumped, as there has been enough outside stock to meet requirements. Some good-sized shipments of potatoes have lately been coming from Stockton.

Oregon Burbanks	$1.75@2.00
Salinas Burbanks	2.10@2.25
Delta Burbanks	1.10@1.50
Sweet Potatoes, ctl	2.30@2.50

Special Live Stock Market Report.

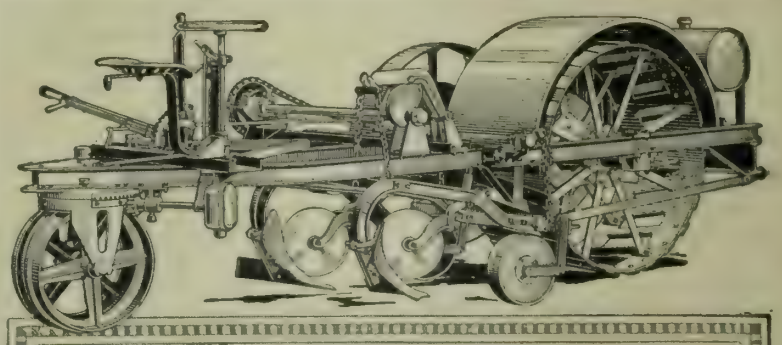
Hogs are the outstanding feature in this market, prices having again been marked up in sympathy with the general high level in all of the Eastern markets. The highest general average price of hogs since May, 1910, was made at Chicago, March 9, and provisions were also higher. Locally, packers do not expect a much higher quotation than at present prevails and while there are some lightweights slipped through, the high quotations are encouraging feeders to hold in the feed-lots for more weight.

The cattle market is steady at last week's quotations, light cattle still being in strong demand and the bulk of all supplies coming from Nevada and California feed-lots Quite a few grass cattle are expected by the middle of April as feed is in fine condition. A good many yearlings and some heavy cattle that did not feed out good in Nevada feed-lots have been received in California lately for range feeding.

Spring lambs in sufficient quantities to warrant quotations will be on the market by the end of this week. There have been occasional cars received for the past two weeks but no genral trade has been possible. There are still rumors of Eastern buyers in this field, but no one seems to know who they are or what they have bought. The mutton situation remains unchanged.

WOOL

Compared with the recent activity, the wool situation may be said to be decidedly quiet. Prices are not materially different than those of last week and there is very little country buying reported. There is a trifle better feeling in foreign markets which may, or may not be felt here later. There has been a sort of a lull in the Eastern market and buying is not at all brisk, with prices in the buyer's favor.



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The above prices on Rumely All-Purpose Tractor are effective until April 1st only

Onions, Delta, ctl. ..... 1.85@2.25
Oregon ..... 2.00@2.50
River Bermudas, crate . 2.00
Garlic, per lb..... 8@10 c

POULTRY.

Chickens are still coming in slowly. The price of broilers is holding the demand in check, but offerings show little increase and prices have dropped but little; while hens are higher than before, with all attractive stock cleaning up. Live turkeys are fairly firm, with few appearing; and old ducks are higher.

Turkeys, dressed .....25&27c
Live Turkeys, lb .....20@21c
Broilers, 15 lbs. to doz. and less, lb. .....40@45c
do, over 15 lbs. to doz. ..35@40c
Fryers .....26@28c
Hens, extra, per lb. .....18@19c
Small .....18@19c
Smooth Young Roosters, per .....21@22c
Squabs, per doz. .....3.50@4.50
Geese, per pair .....2.25@3.00
Ducks, young, lb. .....18@19c
Old .....17@18c
Belgian Hares ..... 9@11c

BUTTER.

The butter situation is less interesting than last week, as the Eastern shipping demand has subsided, though there is still some business with Oregon and Utah. With rather large arrivals from several districts, prices have receded a little. They are still fairly high, however, and most offerings are readily absorbed.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30	30	30	29½	28½	28½
Prime Firsts	29½	29½	29½	28½	27½	27½
Firsts	29	29	29	28	27	27½

EGGS.

Storage operators are taking hold more freely, buying up all offerings of suitable quality not required for current use, and causing a much better feeling in regard to prices. Values range between 19½ and 20c for extras.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	20	19½	19½	19½	20	19½
Sel. Pullets	17	17	17	17	17	17

CHEESE.

Supplies of all varieties are coming in more freely, and prices tend downward, though there is little actual change. Fancy flats are a little lower, and Monterey cheese is weak at the quotations.

Y. A.'s, fancy .....18 c
Fancy Calif. flats, per lb. ...17½c
Monterey Cheese .....17@18c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	30	30	30	28	28	27
Eggs	19	19½	19	19	19	19

DECIDUOUS FRUITS.

There is little to say of the market at present, except that there is still considerable stock coming out of the cold storage houses in fair condition, and selling in a rather limited way, the trade showing no great interest. Values are held about as before.

Apples:
Pearmain ..... .85@1.25
Baldwin ..... .75@1.25
Oregon Spitzenbergs.. 1.50@2.50
Jonathan .....1.25@1.75

DRIED FRUITS.

The New York Journal of Commerce says:

"California prunes are softer, due to the influence of the British embargo orders, which make buyers wary of securing additional stocks at the present time. This is the first trace of an easier tendency which has been noticed since the rulings were announced and local operators are inclined to discount rumors of any further slump from this cause, believing that the present movement is only temporary and that prices will recover within a short time to the level which was being very firmly held before the embargo orders were passed.

"Quotations are said to have been made by Coast packers at a 4c bulk basis f. o. b. common Coast shipping points for stocks of forties to sixties Santa Clara 1915 crop prunes.

"Future prices also slumped, though the immediate effect of the British ruling was felt at the beginning of the week, when buyers ceased purchasing almost entirely any 1916 pack California prunes.

"Owing to the very small stocks of peaches and apricots of the 1915 crop that are left on the Coast there has been no effect made by the ruling on these stocks. Prices are held with a very firm tendency."

The figures below, though largely nominal, are believed to be a fair approximation to real values.

Apples .....6 @6½c
Apricots, per lb .....7 @11½c
Figs, white .....5 @5½c
Black .....3½ @4 c
Calimyrna .....6 @7 c
Prunes, 4-size basis .....4 @4½c
Peaches .....3 @3½c
Pears .....4 @7 c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz. .....7 c
Choice Seeded, 16 oz. 6¾c
London Layers, 3-crown, 20-lb. box 1.25
Imprial Clusters, 6-crown, 20-lb. box 2.50
Bulk, layers, 50-lb. box 2.75

CITRUS FRUITS.

The eastern auction prices show better than for several weeks, caused by the cleaning out of surplus and poor oranges and the receipt of better grades. From now on the fruit will move in a steady stream to the east, mostly in iced cars and should arrive in good condition and command higher prices, especially as the most of the Florida fruit has been shipped. At the New York auction on Monday, Mch. 13, navels averaged from $1.55 to $3.10 per box, and lemons brought from $1.55 to $2.85. At Chicago the same day, navels averaged from $2.25 to $3.00, and lemons $2.25 to $3 per box.

Liberal shipments of oranges arrived in San Francisco about the end of last week, and while values are pretty firmly held locally, there has so far been no advance, the demand being rather quiet.

(Wholesale prices, San Francisco.)

Oranges, Navels .....$1.75@2.75
Tangerines ..... 1.50@2.00
Grapefruit ..... 1.25@2.50
Lemons, box ..... 1.75@3.25
Lemonettes, box ..... 1.25@1.75

HONEY.

The honey market shows a little more strength, with spot offerings gradually diminishing under a normal consuming demand, and little coming in. Requirements are light, however, with no shipping business, and no change is expected until the middle of May, when new honey will begin to arrive.

Water White, comb .....13@15 c
Amber ..... 8@12 c
Water White, extracted .. 7@ 8 c
Light Amber ..... 3@ 4 c
Dark ..... 2@ 2½c

NUTS.

The nut market stands about as before, old crop prices being almost entirely nominal, while anything of desirable quality is in good demand. Conditions still appear favorable for a large almond crop, but the yield will be uncertain for some time.

(Prices f. o. b. San Francisco.)

Almonds (1915) .....Nominal
Walnuts (1915):
Budded, per lb. 17½c
No. 1 .....14 c
No. 2 .....11 c
Jumbo .....17 c

LIVE STOCK.

(Prices, paid for stock, live weight, off cars, without feed or water, at Stock Yards, S. F.)

Steers, No. 1 .....7¼ @7½c
No. 2 .....6¾ @7 c
Cows and Heifers, No. 1..6¼ @6½c
No. 2 .....5½ @5¾c
Bulls and stags .....4 @5½c
Calves, light .....8½ @9 c
Medium .....7½ @8 c
Heavy .....6½ @7½c
Hogs, grain-fed:
100 to 160 lbs. 8½c
160 to 175 lbs. 8¾c
175 to 250 lbs. ..... 9 c
250 to 325 lbs. 8¾c
Prime Wethers .....7½ @7¾c
Full Wool Lambs .....9 @9½c

DRESSED MEATS.

Steers .....10¾ @11¼c
Veals, large .....12½ @13 c
Small .....13 @14 c
Prime Wethers .....13 @13½c
Lambs ..... 16 c
Spring Lambs ..... 18 c
Hogs .....11½ @12 c

HORSES.

The week's local offerings are light, including a few good draft mares and a lot of truck horses being sold out by a drayage firm that is putting in motor trucks. At the same time a local dealer has attracted some attention by offering to buy for cash 500 head of horses, 5 to 9 years old, 15 hands and over, 1,000 to 1,250 lbs.

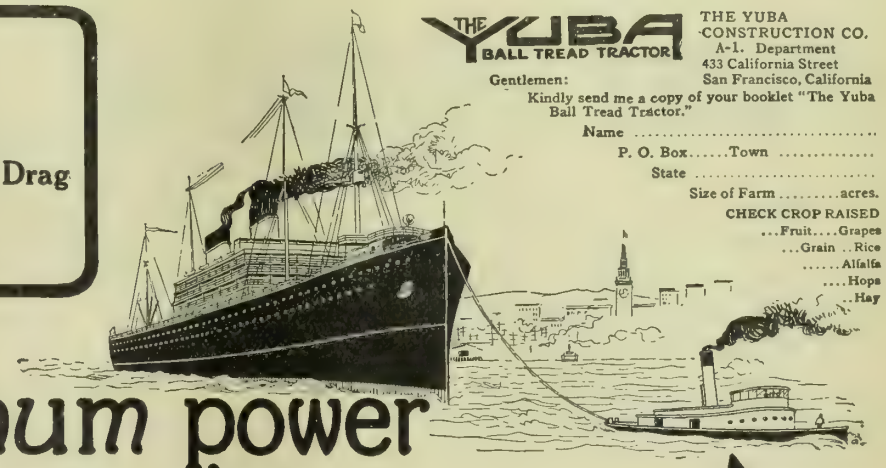
(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs and up $250@300
Drafters, 1550 to 1650 .. 150@225
Chunks, 1350 to 1500 lbs. 150@175
Wagon horses, 1050 to 1350 lbs. .....110@150
Green Mountain range horses, 950 to 1200 lbs. 20@ 75
Farm Workers ..... 50@100

HIDES.

Dry, 15 lbs. and over ..29 @30 c
Kip, 10 to 15 lbs. ...30 @31 c
Veal, 7 to 10 lbs. ..30 @31 c
Calf, under 7 lbs....32 @34 c
Wet Salted, Steers ....16½ @17½c
Cows .....16½ @17½c
Kip .....18 @19 c
Calf and Veal .....21 @22 c
Bulls and Stags .....13 @14 c
Horses, dry, large ....$1.25@2.25
Sheep, long wool ..... 1.25@1.40
Medium ..... 1.00@1.25
Shearlings ..... .60@ .80

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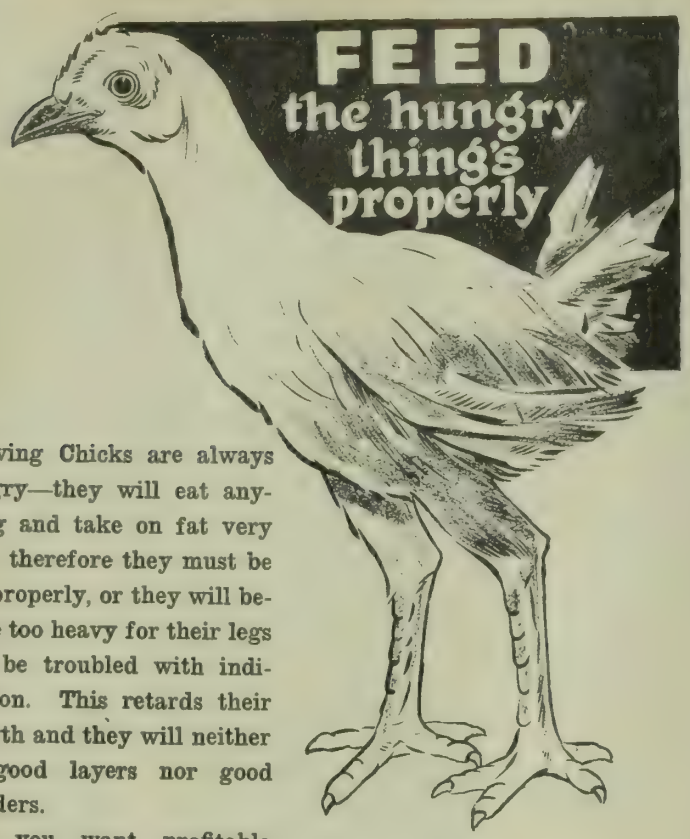
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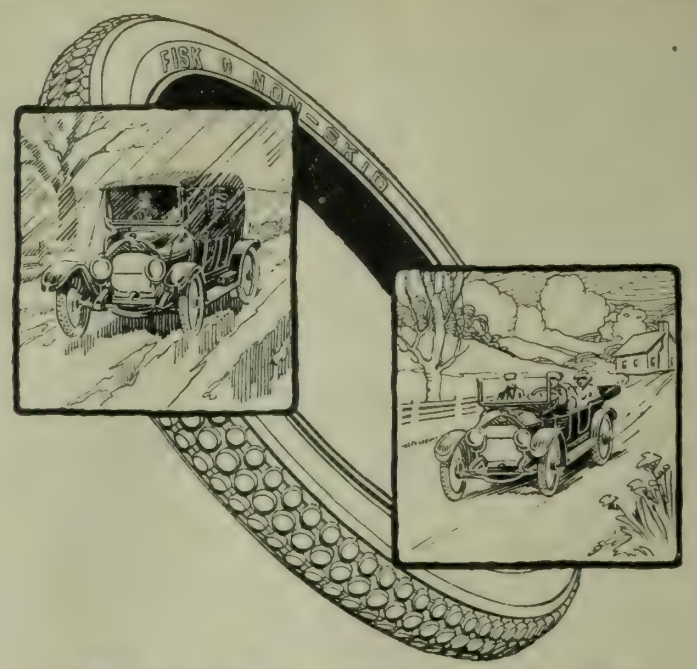


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Vol. XCI—No. 13 Forty-sixth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO MARCH 25, 1916. LOS ANGELES

California State Library

California Should Get More from Soil.

Sixth of a series of sketches in which the Editor presents suggestions drawn from long experience, of what Californians should think and do for the advancement of California Agriculture.

JUST now the attention of Californians is chiefly directed toward "getting more from the soil" through rational application of the science of economics and the arts of commerce and finance. If by co-operation and State assistance, to which the State's greatest industry is surely entitled, producers can get their fair share of what a product ultimately sells for, it will be a straightforward and legitimate way to "get more from the soil." To some of our readers this seems the most important thing of all, and they are inclined to hold that if the State will firmly press this button, they will do the rest and be content.

But there is more in economics than the art of selling—there is the operation of production, and those who are accustomed to look very intently upon half an object, until it seems to be the whole of it, are apt to hold that if they are helped to produce more cheaply, they will ask nothing more. This was the attitude of the grain-growers two or three decades ago, and when they secured implements and machines by which they could plow, seed and harrow a strip as wide as a country road in one operation, and cut, thresh and sack the same width in another operation, they certainly did reduce the cost of production to a minimum and were thereby enabled to stay in the business, even through low prices and with less crop than was harvested when the land was new. They did succeed in getting "more from the soil" than they could have done if the cost of production had not been cut in half. And the same would be true if we could reduce the cost of production by reducing the wages of the money which is employed to capitalize the operation of production. Rendering money available at low interest for rural credit, will not only open a wider range of production to many farmers but will lower the cost of production.



Adequate power deepens, broadens and cheapens tillage.



Harvesting a strip wide as a country road in one operation.

But though selling fairly and producing cheaply, either by better agencies or lower interest rates, have such important relations to "getting more from the soil," the real, fundamental thing in making all farming more profitable and all farmers more prosperous, because they can never reach their highest efficiency in wealth-making, until they are employed in connection with something else, which is itself the foundation upon which they can do their best work. They are the methods of success; they are neither the materials nor the motive power of that success. What then is this fundamental, determining factor upon which all the improved agricultural economics and trade must rely to achieve greater success?

Looking Backward.—During the last two or three decades there has been a quite widely accepted popular impression that California soils were getting old, weary and worn and therefore could not reward present farmers as they did the pioneers. Though there doubtless have been individual experiences with particular fields which seemed to justify that conclusion, it is more than probable that cropdwindling of that sort has often been more the fault of the farmer than of the field. There have always been, of course, cases of new land broken from a long process of natural enrichment, by growth and decay of wild plants, by natural tillage, by burrowing animals and by pasturage of wild game, etc., which have rewarded the first cultivator with plants of almost incredible growth and productivity, when there happened to be ample moisture to make this natural richness of soil available to them. But it is quite common experience that once in a while, when everything is favorable, such fields do even now return almost to their traditional standards—but of that we may speak later.

The Record of Average Acre-Yields. — To listen to common conversation one might conclude that half a century ago production of California grain fields, for example, was several times as great as now. It is vain to try to prove that by records covering any large acreage, because such records force one to opposite conclusions. To get a very significant generalization let us go back to a record made at a time when Californians were trying to prove that they had a good agricultural state. In a most carefully prepared address delivered at the Stockton fair on Aug. 7, 1861, John N. Anderson said: "Calaveras county reports an average of 35 bushels of wheat to the acre, yet the average of the San Joaquin district is but 15.4 bushels to the acre. Nevertheless in the year 1850 Massachusetts alone equalled that average and excelled it by but six-tenths of a bushel. Pennsylvania and Texas harvested 15; Wisconsin 14; Maryland 13; Indiana, Ohio and New York 12; Illinois and Delaware 11; Michigan 10; Kentucky 8; Tennessee and Virginia 7—less than one-half our yield, and yet these are emphatically the wheat states of this hemisphere. California is able to rival the greater states, able to exceed most of them in the quantity, quality and size of common products; able to outstrip all of them, save Massachusetts, in the average of wheat per acre."

Surely claiming victory over the wheat states of 1850 on the basis of an average of 15.4 bushels per acre does not sustain our

(Continued on page 388.)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., March 21, 1916.

STATIONS	Rainfall Data: Past Week	Rainfall Data: Seasonal To Date	Rainfall Data: Normal To Date	Temperature Data: Max'm	Temperature Data: Min'm
Eureka	.68	32.74	26.45	64	42
Red Bluff	.52	19.56	20.15	76	44
Sacraento	.24	18.04	16.04	76	42
San Francisco	.39	26.90	18.70	64	48
San Jose	.64	16.04	13.85	70	40
Fresno	.69	11.47	7.76	86	46
Independence	.02	7.16	7.59	74	..
San Luis Obispo	.69	26.31	16.78	68	48
Los Angeles	.52	19.51	13.13	78	48
San Diego	.46	12.43	8.39	72	52

THE WEEK

MARCH is making a fine record in most places. It has brought weather most opportune for the overcoming of conditions produced by the almost too abundant and continuous rainfall of the earlier months of the season, and brought them soon enough for the plowing-in of the lush winter greenery for the good of the trees or vines, or for the nourishment of field crops which must be planted after frost on lands which are now being turned and worked down for moisture conservation. It is true of course that the winter was a hard one: some spraying had to be passed; some belated pruning threw other work behind, and some spring plowing will be later than desirable. It is unfortunate also that a considerable area of low land has lost its cost of work and winter seeding through unexpected submergence, but much of this will probably be recovered by turning the unusual moisture into summer crops. After all these vicissitudes of "farmer's luck," however, March is apparently doing its best, and with occasional showers and cloudy skies and absence of acute drying winds, the spring is atoning for the freaks of winter and will minister to a large aggregate seasonal production from crops and pasture, and give to all the activities of the State a very good year.

OUR DRIED FRUITS ABROAD.

OF COURSE the shadow which the British government has thrown on our preserved fruit outlook is the darkest thing on our horizon just now—darker than a sunspot and probably much more significant. It is of too recent appearance to make out definitely its area and influence, and, as we stated last week, everyone's duty is to look at it coolly and not to be scared overmuch. Perhaps, if one familiarizes himself at once with what is probably the worst of it, he will be best fitted to illuminate that somewhat with his own courage and optimism. What seems to be the worst of it is sketched by Albert Castle, president of the Dried Fruit Association of California (a dealers' organization). Mr. Castle shows that not until October 30 will it be decided what part of the English purchases of the 1915 crop will be admitted to British ports; that 50 per cent of such purchases is mentioned, and that Secretary Lansing is endeavoring to get 75 per cent or more of them. Nothing is said, so far as we discover, of the crop of 1916—that may depend upon how hungry the British get by that time. Concerning the recent movement of our fruits abroad, Mr. Castle says:

Aside from the English markets, we have hitherto exported largely to France, Holland, Norway, Sweden and Denmark, and prior to the war Germany was our best market. Since the outbreak of the war no direct shipments have been made to Germany, and shipments to the other countries named have decreased materially of late, due to the scarcity of ships and the very high freight rates ruling at present from Atlantic ports—through the addition of about eight times the amount of freight which ruled prior to war times. Aside from this, many customers in neutral countries fear to buy our fruits, owing to the long delays in transit, due to congestion at New York and the strong probability of their consignments being seized in transit by the English authorities as intended for the enemy.

Mr. Castle presents this as a sketch of current conditions and dependent entirely upon the continuance of the war, we presume. If the war should soon collapse, as seems to us likely, it might not take ship owners long to seek charters for prunes instead of bombshells, and they surely would set much better in the European interior. This, too, would set free ships to sail through the canal, in which Mr. Castle does not now see much hope, because there are no idle ships.

OUR DRIED FRUITS AT HOME.

IF, THEN, our dried fruits have to meet British exclusion and would be handicapped by high freights, which would greatly enhance their cost even if the foreign markets were free from exclusion, and as they are handicapped also by the danger of seizure in neutral ships, what is the chance of their sale in this country? Here, again, we had better get used to the worst which can be said of it. This is Mr. Castle's view:

Under normal conditions we export about 40 per cent of our prune crop and 75 to 80 per cent of our apricot crop, as well as a large percentage of our pear crop. We produce in California considerably in excess of what the United States markets consume, so that if we are restricted to business in this country our fruits will naturally sell at extremely low prices, particularly apricots, prunes and pears. Dried peaches have never sold to any large extent in Europe, but the low price ruling on this variety of fruit during the past season has been due to the large crops of peaches produced all over the country, so that in many of the large southern markets no California dried peaches were purchased in 1915 and some buyers in the south still have in stock peaches of the 1914 crop.

This is, of course, a justified commercial view of the situation, which is that as sales have gone so sales are likely to go. It does not include any effect of new forces exerted in popularization or wider distribution than ordinary trade channels carry. Although our merchants and their Eastern connections are probably as strong pushers as their line of trade possesses, they are, of course, not doing the great stunts in exploitation and promotion which are necessary for producers of great specialties to undertake for themselves. For instance, nothing great and systematic has been done to resurrect prunes since the cataclysm of 1900, nothing even for apricots and pears, and the peach is just now beginning to turn in its grave. It has been easier and cheaper for the trade to push the surplus into the open mouth of Europe. They have acted according to their trade precepts and principles, and they have done well, but ordinary trade methods or ideas should never be expected to develop the demand which producers need. You might as well expect the common drug trade to fill the purse of Lydia Pinkham. That estimable woman would never have secured money enough to buy corks and labels if she had waited for the storemen to hand down fly-specked bottles to people who had not been told by wide advertising what kind of pains they ought to find inside of themselves. And so great special food producers have to tell and show people what their appetites ought to crave. This is what the great orange and raisin organizations are spending money for, with wonderful results, and this is what producers of other dried fruits must do. When they do this, with a wise and strong initiative generously endowed, we shall begin to know what cured fruits can be sold in this country. Of the fruits in question, California has a practical monopoly: of prunes 87.5 per cent of the value produced; of the apricots more than that; of the pears and peaches nearly all of the same style and quality. And yet, California has been content to sell to our own hundred million people, roughly, only what could not be more easily shipped abroad. If the British exclusion-act should really wake up our producers to get together and do something in their own behalf, the shock will not be endured in vain.

BUT AFTER ALL, WHAT?

PERHAPS the most important paragraph of Mr. Castle's presidential message on the British submarine prune policy, which we are appreciatively reviewing, is the one he writes at the closing of it. It is this:

In a recent bulletin the members of the new prune and apricot association were advised to take no action regarding the sale of their products until their crops were assured, and it was definitely ascertained to what extent exportation would be possible this year. The committee's advice is sound. While the outlook at present is not encouraging, a change for the better is quite possible at any time.

And of that paragraph, the last sentence is one never to forget. If the war stops soon, as we believe it will, or if diplomacy flops, as it is always doing, the whole situation may change in a day. But it is not wise to wait for that. The proper thing to do is to get so mad as not to give a jam for British appetite, but to organize to make the American people eat up all the choice special products of California.

OUR NEXT GREAT DRIVE.

IT IS probably just as desirable for an agricultural journal to have a plan of campaign and to work definitely towards it, as it is for any other human institution to have such a prearranged plan of action. We have always acted on that conviction, and have had general and special plans which seemed to us to make for the advancement of California agriculture in its various branches. We have not said

much about these plans because it seemed to us they would disclose and commend themselves to attentive readers as they were working out, and we have had abundant reason, in commendation and patronage, to believe that this expectation has been fully realized. Recently, however, some of our contemporaries in the farming-journal line have taken the ground that they ought to be admitted to our initiative, and we have to acknowledge that they might, perhaps, follow us a little closer if they could know in advance what we propose to do. Perhaps if they had known, several years ago, that we intended to use heavy siege guns against the strongholds of unfair finance and unfair marketing in connection with our fruit industries, and thus make culture surer to come through with profits to growers, they might have helped us better to reach these ends. Perhaps if we had, some years ago, told them in advance that we were starting a drive toward the fuller development of the live stock industry and the higher commercial standing of our animal products, they might have made a better show of supporting us in these particulars. Possibly they have done the best they could, and therefore we hesitate over condemnation of their shortcomings. To make sure that we shall not be longer blamable because our contemporaries do not participate in our own initiative for our own work, we do now plainly announce that our next drive will be an effort to set forth the position and condition of general farming in this State and the reasons for its systematic and zealous promotion. We shall endeavor to make clear the relations of general and specialty farming to each other and to the upbuilding of the State, and if we chance to be able to show the folly of undertaking specialty farming in a general way and the wisdom of doing general farming in a specialty way, it may not be so bad a thing to do. Then, of course, we shall have to review the cultural and economic factors of success in general farming and the ways and means which best serve their operation for individual prosperity. This effort will, of course, draw into its service all our resources of regular and volunteer writers who will bring to it special facts and suggestions which their experience and observation warrant. In this way we hope to set forth illuminating knowledge of all field crops which have been undertaken in this State, the reasons for their abandonment or for their endurance in our general farming resources, as the case may be. If we are able to pursue this work as we plan it, the newest Californian among our readers may know even more about California farming than the oldest can remember, and be thus saved from many experiments which can yield only negative results. In the special article on "getting more from the soil," on other pages of this issue, we are merely endeavoring to block in a back-ground for the varied array of landscape features, actions and figures which the finished picture must show forth. For the fundamental requirement of appreciation of how extensive and varied our general farming must become, is the assurance that California is a wonderfully great and fruitful State; that such is the basic fact about it—true half a century ago, true today, and true in days to come—and capable of being employed far more abundantly in the future than in the past by the science and art in its various branches. We have not said of better general farming.

Queries and Replies.

Querists must give name and address.

Burns Up Friends and Foes.

To the Editor: I am sending you a box of "mystery." Kindly tell me what the bugs are. I found a "million by actual count" on a little pear tree and on the alfalfa under it. Not knowing what they were I put oil on them and burned them. They don't look good to me.—Subscriber of the Press forever, Santa Clara.

Well, you have done it. The box contains a few score of plant lice which ought to be burned up and a few striped ladybirds (paranaemia vittigera) which ought to be saved because they are dining on the lice, as is their custom. These striped ladybirds are apt to be condemned, for one may carelessly mistake them for striped diabrotica or squash beetles. Such a mistake always makes these good insects blush and by looking for the pink tinge you can distinguish them from the others, which are too bad to blush. You have burned up both friends and foes alike.

What Are Lentils?

To the Editor: What are lentils and what kind of soil is best adapted to grow them.—M. L., Santa Rosa.

Lentils can be grown on any garden soil, to be planted and grown as peas are. They are small flattish peas growing two in a pod, which is the chief difference between lentils and common peas: the latter coming more than two in a pod, but the latter are round, not flattish and have a horn-like projection. They, too, are farther away from peas than the lentils are in style of growth and belong to the vetch group. Lentils are not used in the same way as garden peas, but are used in soups and stews, as split-peas generally are. Although lentils are one of the leading foods of the human race and have been known since Esau sold his birthright for pottage made of them, they are not much used in the United States.

Caprification or Grafting.

To the Editor: What shall I do for fig trees that never mature their fruit, which falls off when about the size of a quail egg? The trees are healthy and other kinds of figs do well. These trees are about 20 years old. I do not know the name of the kind of fig they are. Please tell me what these trees need and where I can get the material necessary to cause them to mature their fruit.—T. L. W., Dunnigan.

It is likely that they are Smyrna figs and need caprification. If you wish to test it, probably G. P. Rixford, 1813 Pierce St., San Francisco, will send you loaded caprifigs at the proper time to put in your tree and see if the blastophaga will make your figs stay on and ripen. If they do, you should grow a capri tree and do your own blastophagging. If you have not trees enough or interest enough to pursue this line of cure, top-graft the trees to some variety which you find prolific and profitable.

Underground Pests.

To the Editor: Please kindly give me information how to kill the slug eating carrot roots from two inches under the ground, where I plowed in bean straw last year.—A. T. I., Clarksburg.

We never heard of a subterranean slug and would guess that you have to do with a wireworm or some other beetle larva. Whatever it may be, underground fighting is largely impracticable. If the ground is sufficiently porous you can kill such creatures by injecting into the soil carbon bisulphid, but it would cost a great deal more than a carrot or other field crop is worth. You can clean the ground by summer fallowing or you can grow a fibrous-rooted crop, like grain, which would not receive a body-blow as a tap-rooted plant does.

When to Plow Hillside Orchard.

To the Editor: We have about sixty inches of rainfall every season, the land is sloping and the rain often comes in torrents. I have had a dispute as to whether I ought to plow my orchard in the winter time. My practice has been to let grass or some cover crop grow until April and May and then plow, right after what I think is the last rain. I don't plow in the winter because I want to avoid having the loose soil washed away. Our soil absorbs water easily, for my well fills eight or ten feet every time we have a protracted storm and none of the water goes in at the top. Do you think it would be best to plow in the winter time?—Reader, Paradise.

There are hillsides which should not be plowed until the heavy rains are over, but we do not know of any case in which one should wait until all the rains are over. We should say that your date is a month or six weeks too late for plowing to get the land into good summer shape. But this is a theoretical view. The real test of your method is the appearance of your trees and the value of the fruit they bear (if they are of bearing age). If they are young trees their appearance will indicate whether your practice is good or not. If they are thin and stunted the probability is that you plow too late and do not get the right kind of summer cultivation to retain the moisture.

What Is "Deep" and "Shallow" in Plowing?

To the Editor: I am trying to get a definition of shallow plowing and deep plowing. Has some recognized authority defined these terms? We are getting bids on plowing 240 acres of clayey loam soil, and find the bids run from $2.25 per acre for "shallow" plowing to $3.75 per acre for "deep" plowing. The bidders differ considerably in what is shallow plowing, some stating 5 inches, some 7 inches; similarly deep plowing is defined from 6 to 10 inches. On most engineering questions standards are defined by recognized authorities and these standards are recognized, and I am assuming standards representing shallow plowing and deep plowing have been established, but I have not been able to locate this information.—Reader, San Francisco.

We doubt if you find established or recognized definitions. The terms are not only relative to each other, but to local conditions and traditions, which vary. If a man has been plowing four inches, and hears or reads something about the advantage of deep plowing, he is apt to add two or three inches and consider that deep. If he has been going 6 inches and adds two more, he considers that deep, and so on. The figures you mention are rational as representing current views, and their overlapping is according to the facts in the case in the popular mind. We would say 4 to 6 would be "shallow" and 8 to 12 "deep," allowing the two inches between 6 and 8 for "medium." Practically the lack of definition of these terms is not important. They should not be used in getting bids or in making contracts. You should state exactly what depth of plowing you wish to get in inches and then keep busy measuring the depth on the landside of the furrow to be sure you are really getting it.

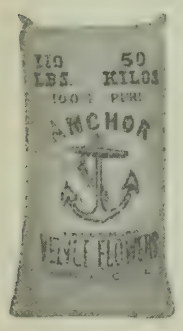
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[By E. H. Erickson, Brawley.]

[Mr. Erickson was a pioneer experimenter with deciduous fruits in the early days of Imperial Valley; and the original trees and vines still thrive close to his home "forty."—Editors.]

I do think this place, Imperial Valley, the most promising in California for early table grapes, provided we plant them on the right soil and give them proper care. Most any variety will do well here; but only a few will be profitable. We do not want to plant any wine grapes; but there is a future for raisins.

The soil must be deep sandy land which is free from alkali, will take water freely, is so porous that roots can go deep, but the land will dry out and not stay wet and soggy. Unless we have that kind, it will be of no use to plant grapes—they will not be a success. This is the reason some vineyards in the Valley do not pay; though much could be done in pruning, cultivating, and irrigation. You never could grow them on hard land or that which contains strong alkali. The vines will grow very luxuriantly, but the grapes will have no shipping quality.

Varieties.—To plant at present we have only two varieties, Thompson Seedless and Spanish Malaga. The Persian varieties are such shy bearers that I think it will not be profitable to plant them, as you cannot make them yield more by pruning and high culture. My observation of them for five years goes to show what the microscope has revealed—that they do not produce enough fruit buds. But the government has some very promising varieties at the Station here, which I believe will be worth millions of dollars to Imperial Valley in the future.

Of the two varieties which we have, Malagas are the best, but they are very sensitive to alkali. Thompson Seedless can stand more alkali. Their time of ripening is not much different if the Malagas have proper care on good sandy land.

Pruning.—The vines should be high enough so no fruit will touch the ground. But if they are too high, it will delay ripening; and the high wind we have in spring will injure the vines. Heat reflection from the sandy land will help to ripen the fruit 8 to 10 days earlier.

They should be pruned the first part of January, as too early pruning would make them dry back too much. They should be pruned with the spurs two or three buds long, and enough spurs left according to the strength of the vine. I try to get the center of the vine open so the sun can get in and give color to the fruit. It should have the golden amber, not the greenish, color.

In this country where the land is so rich, vines have a tendency to make too much top. Just before blooming, all water sprouts, suckers, and growth which would be too thick for the sun to get through and ripen the grapes, should be removed. There should be no summer pruning or topping, as it is not needed here. It would only delay the ripening and increase the foliage.

Irrigation.—The vineyard should be thoroughly irrigated in October and November. Too late irrigation would keep the sap running and also keep the land wet and cold, which would delay the starting of the vines in early spring.

The vineyard should be plowed and worked early, to promote starting of the vines. They should not be irrigated while in blossom but should have enough water before they bloom to carry them past blooming. Then irrigation should be given when the vines need it, after the fruit is set. You can cultivate them then. More cultivation would only promote extra growth and foliage and delay ripening. The soil should be let alone to dry out between each irrigation. If the weeds grow too fast, cut them out with a hoe. In that way we can avoid that big luxuriant growth and foliage. But do not give too little water, so that it will prevent developing the size of the berries and bunches.

After the grapes are picked, the vineyard should be irrigated and cultivated to let the vines grow the balance of the summer, as then we are making our crop for the coming year. If we let the vineyard go dry and grow up to weeds, there will be very little fruit the next year.

Management.—The actual acreage of my vineyard is only four acres, planted in the spring of 1906. The first year, I planted tomatoes and cantaloupes between the vines. In the fall I planted cabbage, and the second spring, cantaloupes again.

The third year after planting (1908) I picked my first grapes. I sold them for $400 cash on the vines. In 1909, I consigned the grapes to a commission house and got $350. In 1910 I sold them for cash, 60 cents per crate and the purchasers packed them. I got $600. In 1911, the first year I shipped in the California Fruit Exchange, I got $2500. I have shipped with them ever since. In 1912, I got $800; in 1913, $1600; in 1914, $1375; and in 1915, $492, a large part of the last crop having been spoiled by linnets. This totals $8117 and averages $250 net per acre for each of the eight years, not counting what I have sold locally, which would be more than it has cost me in taking care of the vineyard.

CARBOLIC WASHES FOR TREES.

To the Editor: How much crude carbolic acid can be mixed with a whitewash spray without injury to the trees? Also, can you mix carbolic acid with crude oil and not have it injure the trees that it is used upon?—H. C. B., Cupertino.

[A carbolated lime wash can be made of quicklime 150 lbs.; carbolic acid 2 gallons; water 200 gallons. You can add carbolic acid to a crude oil or distillate emulsion or to a soap wash at the rate of about one gallon of carbolic acid to 150 gallons of diluted emulsion. Crude oil must be emulsified to be available as a plant spray.—Eds.]

According to James Madison of the California Associated Raisin Co. the embargo on fruits into England will not seriously affect the marketing of California raisins, as they can be easily disposed of in this country anyway.

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Alfalfa in Almond Orchard.

[Written for Pacific Rural Press.]

"It is safe to say that I get double the amount of almonds per acre on the two acres in which I have grown alfalfa three years, over the eighteen acres in which I have not grown alfalfa, though the trees in both orchards are of the same age," says A. S. La Sell, vice-president of the California Almond Growers' Exchange. "I get about as much alfalfa as I would in the open."

True, the alfalfa in April last year was knee deep in Mr. La Sell's orchard and also in that of a neighbor nearby. Mr. La Sell cuts this alfalfa the same as he would in an open field and feeds it to dairy stock on the place, returning the manure to the land.

"I would be afraid to leave it in the orchard as some folks do on account of harboring bugs and pests," says Mr. La Sell.

Not the only advantage by this system is the addition of nitrogen from the soil air on account of the leguminous character of the alfalfa, but another advantage is gained by reducing cultivation, according to Mr. La Sell. On the eighteen acres which would be in alfalfa if it could be leased for a term of years, the cultivation is much less than most of his neighbors, but he receives considerably more crops than most of the others average. Two years ago, he harvested ten tons from the eighteen acres, when the general yield was four tons for the same acreage.

The soil is plowed very shallow to a foot from the trees and then hoed lightly around the trees. Where alfalfa is growing, it will not be plowed up for about four years more. The plowing will be very careful and shallow, and the ground will be at once re-seeded if the yields continue so much better than in cultivated orchards.

PEARS IN APPLE COUNTRY.

[Written for Pacific Rural Press.]

Pears are the best fruit on the highlands between Beaumont and Oak Glen, San Bernardino county, according to Mrs. J. G. Fisk, whose husband owns the oldest orchard in all that country. His ranch is at an elevation of 3200 to 3500 feet and is a red gravelly soil of unknown depth.

The orchard includes old prunes and apricots which are not a success and are being replaced with Bartlett pears and a few apples. The apples need more water than pears, and plenty of water is not always available. Old cherry trees, Morello and Royal Anne, are doing well and a neighbor is introducing Bings.

Winter Bartletts have borne only twice and are not known yet to be good bearers, but the fruit keeps in ordinary storage into February. We tasted some early last February which were the leavings of what had been kept in the ranch cellar. They were certainly very acceptable.

The summer Bartletts, however, color beautifully, are of fine mountain flavor and keeping quality; the trees have a healthy growth and bear well. Two and a half acres, including a few Flemish beauties, yielded 25 tons, which were sold in 1914, besides the family uses. Hail and wet weather about blooming time lessened the crop in 1915.

FOR CANKER WORMS.

To the Editor: What spray is used for the inch worm that eats the foliage off the apricot and cherry trees? I have used Paris green and arsenate of lead but it does not seem to be much good.—J. B. R., Martinez.

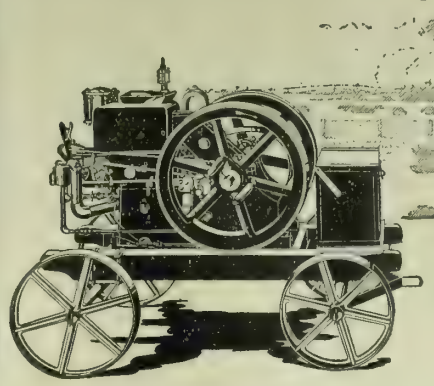
[It is rather hard to kill canker worms after they are at work. Arsenate of lead is best and it must be made pretty strong and well sprayed. Banding the tree two inches wide with tangle-foot will keep the wingless moths from getting up to lay eggs and this is better than spraying if done early in March before they come out of the ground.—Eds.]

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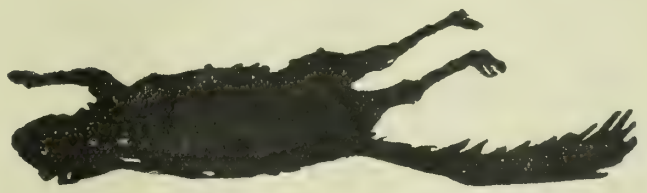
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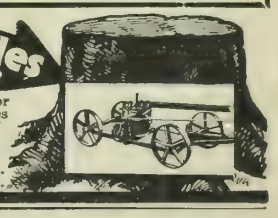
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Guaranteed not to burn your Fruit or Trees.

On receipt of $1.00 we will send a sample gallon can, all charges prepaid, to any express office in California."

Mulched Basins Help Oranges.

[Written for Pacific Rural Press.]

In the summer of 1912, the Navel orange trees wilted in a hillside block of 8 acres belonging to D. C. Lefferts of Redlands, in spite of the monthly four-day runs of 22 inches of water day and night. They were nearly 25 years old, and in the past 10 years, so far as could be found, had never borne over 4200 field boxes. In 1913 they were badly frozen, but produced 3272 field boxes the following season. A third of the usual amount of water prevented them from wilting and sized the fruit. In the next year, 1914-15, they bore 5395 picked boxes besides 600 injured by bad spraying.

He had always plowed in manure and dry stuff, and one season he subsoiled. In June the soil was beautifully mellow all the way down—in September the soil was bone-dry six inches below the cemented irrigation-sole under the plowed ground. Now, in some neighboring orchards, one cannot pick the ground loose 6 inches below the plowsole, but close under Mr. Lefferts' trees he says he can shove a hoe handle down full length in the ground. Subsoiling in spring is not practiced in that country, largely because it is useless—after the second or third irrigation the ground is cemented as hard as ever and the roots cannot get substance from it. Formerly very little life of any kind could be found in the soil—now it is swarming with bacteria and larger soil organisms.

"Bacteria, angle worms, etc., are the only means of keeping our subsoil open to water so the roots can get down deep," says Mr. Lefferts. "They will do it if we keep the soil constantly, not intermittently, moist, and not too hot. I believe we have been killing the bacteria by summer cultivation."

Mr. Lefferts has provided for moisture and coolness by basining and mulching, but his problem is not entirely solved yet, possibly for lack of the granulating action of lime or gypsum.

In Jan. 1913, he made basins about the trees just large enough to catch the drip from the leaves, and filled them with manure at 2 cents a cubic foot. The first year all the manure disappeared and only ⅓ of the water was needed.

The second year, manure was too expensive, so spoiled alfalfa hay, $300 worth at $8.50 per ton delivered, was used in the basins. Alfalfa was also planted in the three-foot spaces between basins and what little grew up was cut for mulch. The growing alfalfa would be irrigated night times, but the soil baked so that after two years' trial he has plowed up the centers the past fall, leaving the basins intact.

The basins had been enlarged in the winter of 1914-15 except one corner. On this corner last summer, the trees wilted while the basins would still be wet. So last fall Mr. Lefferts dug a trench across the center and to one of the trees.

Where alfalfa had been trying to grow, the ground was somewhat easily dug with a pick. Under the basin from the border to the tree, moist dirt was found as a sort of inverted cone 6 inches deep at the edges and 16 feet beside the tap root, where a rod was shoved ten feet below the bottom of a six-foot hole.

The water had penetrated more easily down beside the big roots. With moisture and coolness the bacteria, according to Mr. Lefferts, prevented cementing around the big roots; but that was not where the most of the tree feeders could get moisture. So this year all basins will be enlarged to the limit. Whether this will prove permanently effective remains to be seen.

The effect of the basining on soil temperatures was strikingly shown in the summer of 1913 when a thermometer bulb was buried 15 inches deep on the sunny side of a tree in the mulched orchard. It stood at 72 degrees in the morning and at 76 degrees at evening. A thermometer in a neighboring cultivated orchard buried similarly showed 68 degrees in the morning and 82 degrees at evening.

HEMET MARKET OWN APRICOTS.

[Written for Pacific Rural Press.]

With all of your marketing, get good customers for all of the produce you expect to sell; and then keep them supplied with standardized uniformly graded goods. This is the practice of the Hemet Cured Fruit Ass'n which, according to its manager, C. G. Hamilton, shipped 450 tons of its total 580-ton dried apricot crop of 1915 to New York. Of this, 75 tons were sold to one firm.

The last 90 tons were shipped to one firm late in February, 1916, at 7 cents for standards, 8 cents for choice, 9 cents for extra choice, and 10 cents for fancy. Of the fancy, they had a large proportion, since these had been held back. The 1915 crop of the Association, which comprises that of 150 members, 90 per cent of all the local growers, sold for close to $80,000.

The local Association withdrew last May from the Cal. Cured Fruit Exchange, partly because the representatives of the local people claim to have found it impossible to inspect the books of the Exchange, or to get definite information as to its operations, partly because of changes in financial arrangements which the State Exchange wished to make, partly because the returns on their shipments were so slow in coming to the local. They have every confidence in the integrity of the State Exchange people, but do not like their new propositions or their secretiveness.

"The foundation of co-operation is confidence," says President E. O. Eggen of the Hemet Association. "When the central organization attempts to run the growers, instead of the growers running the central organization, the growers want to drop out."

The Hemet Cured Fruit Ass'n has not lost a member since its withdrawal, has gained several, has been very successful marketing its crops, gets quick returns and much "fatherly" advice from its New York brokers.

The brokers sell the fruit before it is packed. On receipt of an order at a given price and its confirmation



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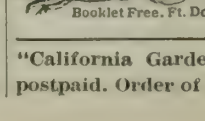
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SURFACE IRRIGATION EXPOSITION DRAIN PIPE.
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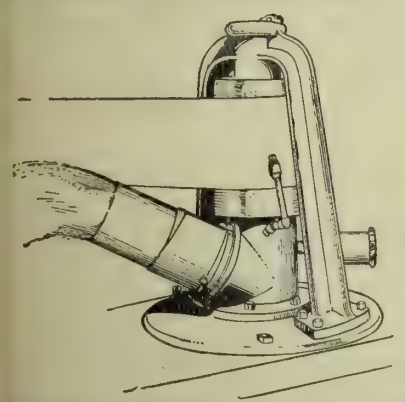
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MR. COATES NOMINATES MR. HECKE.

To the Editor: The fruit-growing interests of California are too important to be trifled with, when growers everywhere must endorse the principles laid down in the Rural Press of March 4th. The acts of the San Bernardino convention are so petty as to be hardly worth a second allusion.

The State has long felt the need of a broad-minded and practical Horticultural Executive, one versed in commercial pomology. The office has been too long a chair of economic entomology.

Why not G. H. Hecke? There may be and doubtless are other men as good, but there surely is none better. Mr. Hecke would fill all the requirements; an energetic, successful and up-to-date fruit grower, living in the center of the greatest fruit growing valley; a keen executive, and good business man, and one who knows full well the importance of the enforcement of all laws relating to the control of insect pests and plant diseases.

Mr. Maskew is evidently the right man in the right place; why not keep him there? Our Horticultural Executive must be, first of all, a thoroughly competent commercial fruit grower, and who now has the time to devote to the office.

Morgan Hill. **Leonard Coates.**

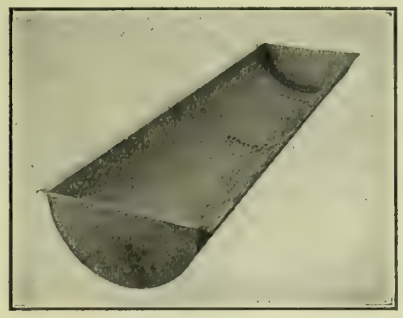
[Although we had, as stated in our issue of March 4, and although we still have, no candidate for this office, we are willing to print the statements of reasonable character and length from our readers who take an interest in the very important matter to which we have urged attention.—Eds.]

ARE DRIED PERSIMMONS DESIRABLE?

To the Editor: I notice that some parties are urging the desirability of dried persimmons as a California product. They might find it beneficial to know the exeprience of others with dried persimmons. They have been dried in Japan and China for ages and, as stated, there are "delightful possibilities" in them, but for a brief period only. If of prime stock they are superb when first dried, but they rapidly fall off in quality. Very soon after drying they begin to exude a very disagreeable sugar and presently become thickly coated. This sugar is of a mealy and exceedingly unpleasant character and should be scraped off before eating. Without doubt it can be washed off and wiped dry and made presentable, but even then it will be far below the original quality; the elimination of the sugar having caused a considerable deterioration. Therefore if attempt is made to dry them it must be for a quick market, to be used when fresh only. **W. Stuart Smith.**

Lemon Cove.





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WHAT OUR DEFLECTORS WILL DO: Immediately stop bank cutting and loss of ground. Turn current away from bank. Form new channel in center of river. Protect bridge abutments and approaches. Cut out objectional sand bars. Build up your land by depositing silt along bank line. Will not interfere with navigation. Let us send an engineer to inspect and report on the cutting conditions of your land.

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More About the Standard Prune.

To the Editor: In your issue of March 4th, J. T. Green gives the Standard prune quite a boost, which to shippers of green prunes for the market seems to hold good. The Standard is a handsome fruit of fine flavor and may ship well, but from a dried prune standpoint this variety will not do in our county.

Apart from the fact that they dry so light and need almost as much care in handling as an Imperial, it has serious disadvantages: (1) The wood resembles the sugar prune in texture. (2) The fruit dries out, when properly cured, about 4 to 1 as compared with 2½ to 1 on the Imperial or French. (3) The fruit has to be picked or batted off the trees as it has such a tenacious hold on the stem.

Thus, the cost of picking up fruit per dried ton would be $16 per ton for Standard as compared with $7 to $7.50 for French or Imperial. For it would cost at least $1 a ton more to pick from the ladder than to gather from the ground—more if the crop were light. (4) I have noticed a thin line of dark meat near the center of the fruit such as one sometimes notices on the side of a dried Imperial if it has been allowed to dry up too much before turning.

As we can turn out such superb fruit using French, Imperials and Robes, why turn to a new and untried variety rather than improve those of known excellence we already possess?

It would be a boon to horticulture if an honorary committee were established, of well-known commercial growers, to try out any new variety of tree or plant before it is thrust onto the market. There are always a number of enthusiasts—and generally men who can the least afford it—who are carried away by the glowing accounts of new products and put their all into its production only to learn years later that a mistake has been made.

In our own county, many hundreds of acres of Picholine olives were set our many years ago, on account of the high oil test, it is said. Scores of remnants of these heart-breaking and ill-advised efforts remain today, monuments of weary years of unprofitable labor. The spineless cactus may be all right in some locations. Our own rich bottoms return such handsome dividends when properly managed that we have been able to steer clear of this uninteresting and unprofitable child of the desert. Its pitiful little efforts here and there throughout the county, with good, rich alfalfa growing on adjacent ground, are object lessons.

Napa. **John J. Fox.**
Horticultural Commissioner.

STATE-WIDE INFORMATION ABOUT MARKETING.

To the Editor: The following suggestion was read before the Santa Clara county Pomona Grange March 11, discussed, and a resolution passed requesting me to publish same. I hope, therefore, that you will find space for it in the Pacific Rural Press and also that you will give your readers the benefit of your views on this big and vitally important subject:

"The local information bureau which we have now is good so far as it goes, but it doesn't have access to all sources of information in the East and in Europe which it should have. What is needed is a bureau under State management and control not only for prunes and apricots but for every kind of production in California. Then small local bureaus should be organized to receive the information for one particular product of that locality. The cost when for all products, would benefit everybody in the State and consequently the slight tax necessary would be more than counterbalanced by the increased profit in selling to advantage, due to the knowledge of the markets gained by this State Information Bureau. The State already has means for gaining information as through consuls and officials of the other States.

Each small local bureau mentioned above should receive the information only for one product, for instance, prunes (not vegetables, etc.), and should in turn collect accurate information as to amount and condition of that crop in that locality. Prunes would probably require several bureaus in this county, as different sections are so different in quality, due to different climatic conditions." **Sivert H. Shelley.**

San Jose.

[It seems to us that such an organized effort for actual facts about all crops is a part of the working machinery of the State Market Director, and that it is neither necessary nor desirable to provide another organization to secure such facts.—Eds.]

At a meeting of the Tulare County Protective Association held at Porterville last week resolutions were adopted binding orange growers, shippers and packers to abide by the 8 to 1 standard with the provision that fruit which does not come up to the 8 to 1 standard by December 10 may be shipped, without certificates, however, if it shows eighty per cent natural color.

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First choice vines at $45.00 per 1000.
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HOW TO SEASON EUCALYPTUS.

To the Editor: Could you tell me how to season eucalyptus wood to avoid checking?—M. R. B., Morgan Hill.

[Answered by Carl A. Kipfer, Acting Asst. District Forester, San Francisco.]

[The question is rather indefinite since it does not state the species of eucalyptus or the form in which it is desired to dry or use the wood. The Forest Service has experimented with the drying of blue gum and manna gum in the log, both peeled and unpeeled. The results were not satisfactory. It was, however, determined that checking can be stopped to a very large extent by leaving the bark on and painting the ends with a heavy paint to prevent the rapid escape of moisture. The safest method for drying the lumber consists in piling it in the shade where the circulation of air is not too great. The stickers used should be not more than one inch thick. Even under these conditions thick lumber checks a great deal in seasoning. The operation can be hastened somewhat by drying the partially air-dried material in a kiln in which circulation, humidity and temperature can be controlled.

There are some species which, it is claimed, can be dried very easily and with practically no loss in checking. We have had no experience in handling these and do not know what American-grown wood of these species would do. The trees should be cut in winter.]

MILLET ON SANDY SOIL.

To the Editor: Will millet grow on sandy land here near Kingsburg? Which is the best kind, and the best time to sow?—J. H. P., Kingsburg.

[Answered by Geo. H. Croley.]

[Millet will grow on either sandy or heavy soils and thrives on any land that contains plant food in sufficient quantity to produce any sort of hay or grain. When irrigated it yields heavily as green forage, hay, or seed, frequently producing 40 to 60 bushels of seed to the acre when grown on rich soil. In Europe and Asia it is extensively grown for both hay and seed. There are many varieties that we, in America, class as millet—the kinds that produce a straw similar to wheat, but the millet family embraces hundreds of varying plants including the numerous sorghums, such as Egyptian corn, Kaffir corn, etc. The seeds produced from all sorts of millet constitute the third largest supply of cereals for human food; rice being the greatest, wheat second, and millet products third. The straw millets are not likely to be extensively grown in California because the cane or sorghum varieties are considered more profitable, but there are exceptions. A farmer in Nevada county sowed a red-seed hay millet for several years and reported that it produced, for him, more good feed than any other forage crop he had tried. This red seed is not good for either human food nor for feed for poultry and animals. The soft-skinned white, yellow, or buff sorts should be planted if the seed is intended for feed. To produce a crop of seed use from 10 to 20 pounds of seed to the acre; for a hay crop increase to 30 to 50 pounds. In Fresno county April or May are good months for planting.]

Choice, Healthy
Citrus Trees



Washington Navel and Valencia Orange, Lemon and Grapefruit; two-year-old budded stock. Trees in perfect condition—grown in exposed positions. Best citrus stock scientific culture can produce.

We have three citrus nurseries—Escondido, Anaheim and Los Angeles. If you are near these points we can save you money by shipping direct from nurseries. Special prices on large shipments.

$2 Combination Offer

Four trees—Washington Navel and Valencia Orange, Lemon and Grapefruit, $2. Additional trees, 50 cts. each—single trees, 65 cts. each. All trees carefully balled—perfect condition for planting. Write or ask for Mr. Peck.

Germain Seed & Plant Co.
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Why not buy the best?

Buy from the biggest stock of clean citrus trees in the state. 100,000 trees—classy two-year-olds—no scale.
It will pay you to see us before buying.

McMillan-Graffen Nurseries, Spadra, Calif.
(Estab. 1900.) Take Los Angeles-Pomona Bus to Nursery.



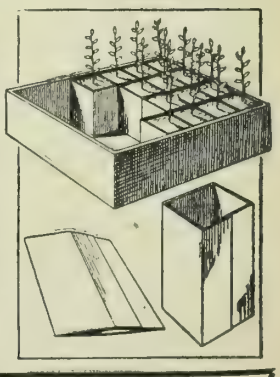
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These pots are bottomless. This allows you to plant the pot and plant, never disturbing your plant in transplanting it or checking its growth a single hour. Now is the time to start early Vegetables in them such as Tomatoes, Cabbage, Egg Plant, Cauliflower, Cucumbers, Cantaloupes and Squash. Also for propagating Rose cuttings, Geraniums, Eucalyptus and Conifers of all kinds. It's the only practical pot for propagating work. Write us for samples of either pots or protectors. Tell us which you are interested in.

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Col. Irish Struck by Submarine

To the Editor: "Farmer" Irish has always been an interesting personality to me since I first heard him speak some 30 years ago in Southeastern Oregon, on the "Political Issues of the Day," which were of course of vital interest to the "common people."

As I remember it, he warmly congratulated the residents of that section as being fortunate in living in such a favored and fertile country. [To jolly the audience is one of the fundamental requirements of the art of oratory.—Eds.]

But after returning to California Col. Irish was reported to have made the remark, in answer to a query in regard to that particular section, that "the soil up there was too poor to sprout white beans without a shower of vinegar." [There are two ways in which this passage may be interpreted. From one point of view it is political retribution, because your sand-lappers up there probably voted for soft money in spite of the enlightenment offered you. From another point of view, Col. Irish was merely prophesying that the accepted treatment for alkali would soon be the application of a dilute acid.—Eds.]

Now it appears that age has not diminished the Colonel's joking ability in the least, as witness his recent statements in the Rural Press, that "we farmers being brethren in distress should tote fair." Then he takes up the defense of the bankers whom he would have us believe are having a struggle for existence on a measly 6 per cent interest, and says he would rather take his chances as a farmer with $25,000 than as a banker.

The Colonel may deny any joking in this matter on his part, but recently compiled statistics, by Massachusetts officials show the average savings of bankers to be $2,588 yearly as compared to $254 for farmers, or ten times as much for the banker.

The Colonel is also certainly joking when he mentions "tax-eaters," for he knew no "sich animal" for years while posing as a "gold democrat" and holding down a soft political berth, the hardest part of which was, according to common report, showing up pay day and drawing down his little old $5,000 per. [As we understand it, Col. Irish did not create this office which he filled so amply. If we remember correctly, it is provided for somewhere in the by-laws of the United States and presumably for the good of the people. But even if that time-honored right of an American, to hold an office if he can get it, may be rendered obsolete by recent changes in the art of war, your attack is still not justified because any kind of a democrat ought to be glad that another democrat (also of any kind) succeeded in bamboozling an enemy administration out of an office which belonged to a republican.—Eds.]

Yea, verily, we farmers are "brethren in distress."

Lone Pine. Charles Probasco.

[We were sure that the banker-farmer paragraph of the Colonel's on page 291 of our issue of March 4 would bring out something hot. If it were not war time we would not permit a stroke below the waterline, and we publish it in this instance for the purpose of interpolating the references to the international law of warfare, for which we shall stand for the maintenance of the sovereign rights and dignity of the American people.

In its more personal phases we are convinced that Col. Irish has lived down the political vagaries of his youth, just as many of the rest of us have, and we can assure our correspondent that Col. Irish is now a prosperous and contented farmer, and we believe he is perfectly honest in his conclusion that he would rather be a farmer than to be a bum banker who did not know how to make more than six per cent.—Eds.]

INSECT PESTS SPREAD BY WIND.

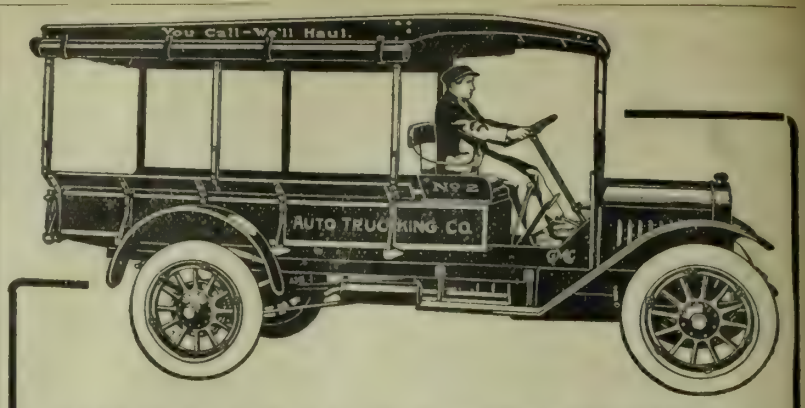
How wind spreads destructive scale insects has been shown by recent investigations of the University of California. The result is a powerful argument against letting orchard or road trees be neglected.

The manner of distribution of scale insects has always been a subject of much discussion in the citrus-growing sections of California. Its important practical bearing is in connection with "block fumigation," that is, fumigation done solidly over as large an area as possible by the advice, and compulsion when necessary, of the county horticultural officers. If one grove is fumigated and the neighboring one is not, some maintain that the untreated grove is an important source for the quick reinfestation of the treated one, while others maintain it is of little consequence.

During the past season the Citrus Experiment Station at Riverside has secured some definite data on the role of wind in the dispersion of scale insects. The young scales were captured on tanglefoot sheets at various distances up to 450 feet, or at a distance equal to twenty tree rows. Several hundred scales were captured on these sheets after two or three days' exposure at distances of 20 or 30 feet or more.

A four-acre block of orange trees, with badly infested trees on three sides, was fumigated in 1914, with practically 100 per cent of the scales killed. In 1915 the scales were spread by the wind over this entire block of clean trees and on the outside rows as many as one hundred scales were found on a single leaf. There were more than three times as many scales on the trees immediately adjoining infested trees as on the next row away, and three times as many scales on the windward side as there were on the leeward side of the trees. The scales, however, spread from the neighboring groves in more or less numbers over this entire four-acre block in a single season through the agency of the wind.

To keep the trees clean under such circumstances it would be necessary to fumigate every year, while if the neighboring groves had been fumigated at the same time, this expense would not have been necessary for three or four years. Pepper and olive trees bordering on citrus groves are also important sources for reinfesting the treated citrus trees.



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TRUCKS

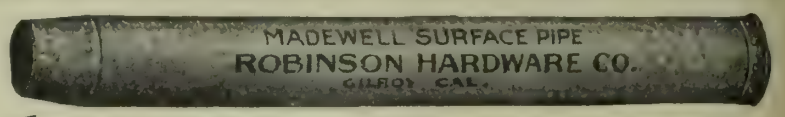
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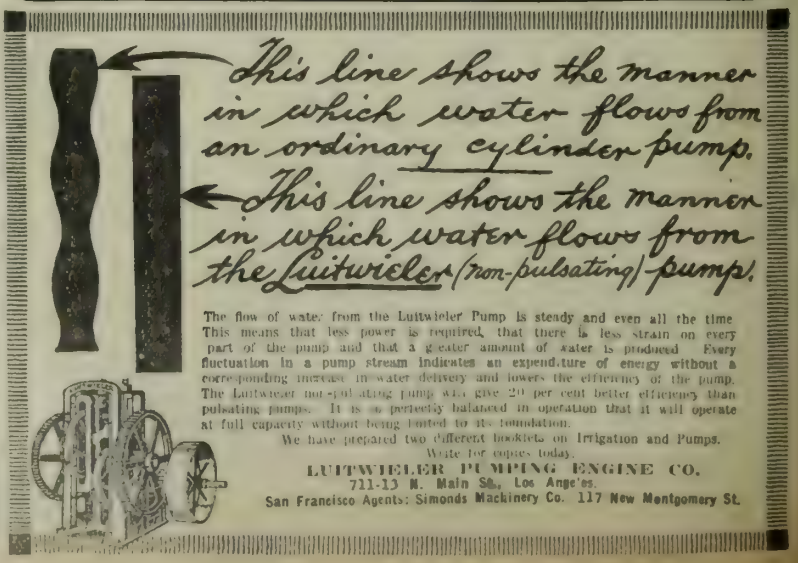
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Send for Free Booklet—which tells just how Madewell Pipe is constructed

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Which Sorghum for Heavy Moist Lands?

To the Editor: What variety of the non-saccharine sorghums will yield the most grain in the heavy, rich, moist lands of the San Joaquin valley, roughage not considered? Other things being equal, are the dwarf varieties preferred, if they are not to be irrigated?—J. A. W., Merced.

[Answered by Prof. John W. Gilmore, University of California, Berkeley.]

[It is not safe to say positively which variety of the grain sorghums will do best on a given soil; for culture methods, including time of planting and the condition of the soil in respect to its moisture content and physical properties, all have a bearing. There are three varieties, however, that would, in all probability, do well upon the soil mentioned by J. A. W.; these are Dwarf milo Feterita, and Brown or White Durr (Gyp corn). The main reason why these varieties are suggested is that they are of relatively short growing season, consequently make the best use of available moisture. Kaffir also does well on such soils, under circumstances when the moisture supply can be maintained until very late in the season. It should be noted that the Feterita is more particular about the moisture content and the condition of the soil at the time of planting than are the other two varieties mentioned. Late rains such as we had last year are usually detrimental to the germination and early growth of Feterita. On the other hand, Feterita is perhaps, of the three varieties mentioned, least damaged by birds. On the whole, it has been my impression that Dwarf milo is the best all round grain sorghum for the San Joaquin Valley. It lends itself to a wide range at time of planting, puts forth its best efforts to produce a crop even on adverse soil types, and is quite as drouth-resistant as any other varieties.

In planting grain sorghums it would be well if the same variety might be planted in a given community, and especially is this true where home-grown seed is saved for next year's planting. It has been amply demonstrated that home-grown seed when well produced is better than imported seed, but when a number of varieties of this crop are grown in the same community these varieties cross and deteriorate the value of the seed.]

Why shouldn't the Standard Oil Company make the best oil—with over 40 years experience in refining—with unequalled plant equipment? And Zerolene is scientifically refined from selected California crude—*asphalt-base*. Prominent authorities have recently declared that an oil correctly refined from asphalt-base crude can be made not only equal but superior to paraffine-base oils. Next time you empty the crank-case refill with Zerolene. Dealers everywhere and at service stations and agencies of the Standard Oil Company.

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Herbert F. Dugan
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San Francisco
Dept. B.

APRICOTS INTERPLANTED WITH WALNUTS.

[Written for Pacific Rural Press.]

In Orange county, there has been quite a practice of planting apricots among walnuts.

"How do you like such a system?" we asked of J. Griset, who has 13 or 14 acres of walnuts about 12 years old in which alternate rows are Royal apricots, while within the walnut rows, alternate trees are apricots. The place slopes considerably and the sub-soil is of adobe clay nature.

"The combination is a bad one," said Mr. Griset. "We can't irrigate the walnuts when they need it on account of the apricots. We irrigate the apricots late in May and then not any more until the fruit is off in August, because the fruit would be too mushy to knock off the trees to pick up for drying as we do here.

"But the walnuts need water when their meats are forming late in June, to make them fill out good. We can't get it to them.

"Year before last we took 18 tons of dried apricots from the place. Last year it yielded 15 tons of apricots but only 1½ tons of walnuts. The low net yield was partly due, however, to having many trees which are naturally poor bearers, and partly because walnuts want deep loamy soil. The apricot roots spread out. I will pull out the walnuts."

Millet is proving to be a good summer crop in Placer county.

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Disk Before Plowing

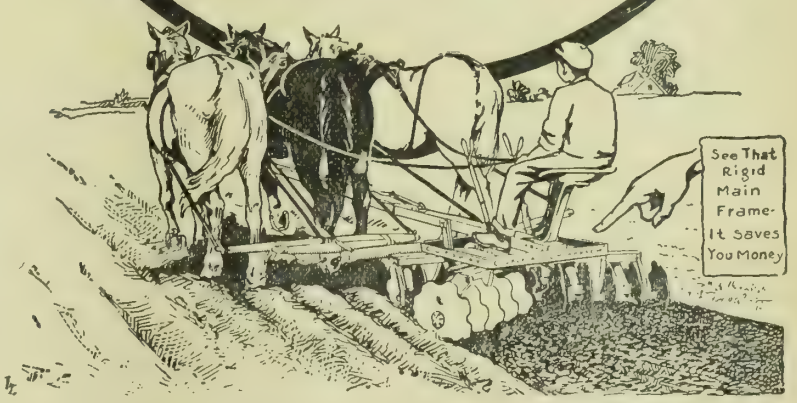
as well as after, with a CUTAWAY (CLARK) Double Action Disk Harrow; makes plowing easier, gives better results. Every particle of soil is thoroughly stirred because the rigid frame—a patented feature—forces the rear disks to cut just between the furrows of the fore disks.

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penetrate deep because of the cutlery steel disks *forged* sharp. The dust-proof, oil-soaked, hardwood bearings and perfect balance make it noted as a light draft implement. If your dealer hasn't the *genuine* CUTAWAY, write us direct. Send today for copy of new free book, "The Soil and Its Tillage."

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Main and Howard Streets. San Francisco, Calif.

California Should Get More From Soil.

(Continued from page 377.)

modern conversational standards of what California soil did in the early days. But let us see rather more definitely how the average acre-yield of wheat has ranged for about sixty years in this State:

Period	Aver. bu. per acre	Aver. acres sown
1855-60	19.73	191,302
1868-70	19.04	931,651
1871-80	13.04	2,093,927
1881-90	12.17	2,795,132
1891-00	12.27	2,701,620
1901-10	13.39	1,521,506
1913	16.50	300,000
1914	17.	400,000

Of a number of deductions which may be drawn from these figures, these seem clear:

First, that when little wheat is grown, obviously the land which yields most profitably is used for wheat and other lands lie idle or give pasturage or are sown with barley and other cereals which are less fastidious than wheat. This largely accounts for the increase in acre-yield since 1900.

Second, that the best soils for wheat, the deeper loams of the lower valley, lands were available to the pioneers for wheat, but are now largely used for fruit, for alfalfa and other field crops which are counted to yield more money than wheat. Surely much of the land used for wheat from 1855 to 1870 was somewhat better than that used in 1914 and this would partly account for the higher average acre-yield in the earlier years. However the difference in the average yields shows only two to three bushels in favor of antiquity, or a rough percentage of decrease of, say, 12½ per cent.

What, Then, Becomes of the Stories of Antiquity?—Of course as one thinks only of these deadly averages, the impression intrudes that the pioneer Californians were the greatest liars on earth about the large yields, but that impression is itself false and misleading. The old records are true, and it is interesting to note that they are supported by the records of today. Take, for example, this:

In May, 1858, W. H. Drum had a field of Sonora wheat on the right bank of the Yuba river, five miles above its mouth. Ten acres of this field "duly measured by a competent engineer," when threshed yielded 84 bushels and seven pounds per acre. The whole field of one hundred acres, of which the above ten acres was a part, yielded over 80 bushels per acre. On this demonstration Mr. Drum received the first prize for wheat yield in 1858.

Mr. Drum had evidently rich bottom land such as was then proved to be good for wheat, but wheat was making a break for higher lands as is shown by this unique account by the State Agricultural Society's "Visiting Committee" in 1859: "Henry Stowers, in the midst of predictions of failure, half-suppressed sneers and derisive remarks, and not a few misgivings of his own, plowed, sowed, and otherwise protected, but gave no water to, forty-five acres of the most forbidding loose red soil, between Ione City and Jackson, to wheat. His entire field averaged 46 bushels of very fine wheat—thus initiating the culture of another extensive portion of the state considered quite useless after its crop of gold was gathered."

When Did Depreciation Begin?—As we read these figures of great wheat yields, the question naturally arises: When did these reports of the decline in fertility of California soils begin to appear? Of this we cannot be exactly sure, but it will serve present purposes to show that in the annual address at the State Horticultural Fair in San Francisco in October, 1858, Wilson Flint said this: "It is a startling truth that the yield per acre of the cereals all over the once rich valleys of our state is so much on the decrease that, with the immense increase annually of breadth of land put into grain, still the amount produced is not much greater in the aggregate." The fact is, then, that this conclusion about the decline in the production of valley lands is not "the result of half a century of wheat growing" as we now so frequently hear, but was noticed and prominently proclaimed in the year 1858—the same year that Mr. Drum was harvesting wheat at the rate of 84 bushels and seven pounds per acre on the Yuba river bottom and one year before Mr. Stowers harvested 46 bushels of wheat per acre on dry foothill lands of Amador county, which were supposed to be only good for gold-washing. It is also interesting to remember that this report of decline in wheat yield was made before the State began shipping wheat abroad (which was in 1859) and seven years before General Bidwell, at the State Fair in 1865, said: "It would be a poor farm, and poorly cultivated at that, if it failed to yield 25 bushels of wheat per acre, and 50 bushels per acre is no uncommon crop."

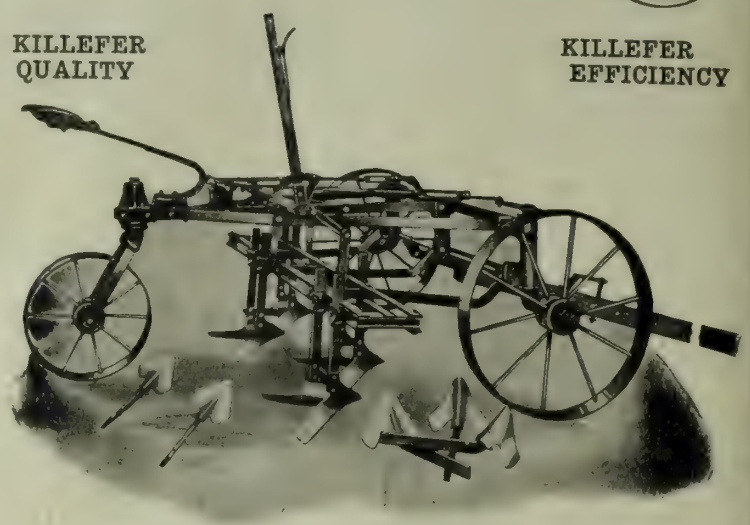
It is clear enough that the decrease in soil fertility is not a new idea in California. We shall have occasion to refer to Mr. Flint's declaration again in another connection.

Can We Now Approach the Old Extremes?—We have to admit that the record made by Mr. Drum in 1858 stands in a class by itself, so far as any recent approach to it, of which we now have the figures, is concerned. Perhaps some reader can match it for us, with facts now known to him, and we would like to hear of it. But Mr. Drum made 84 bushels when the state average was 19.73 bushels, and we shall now give figures for 51 bushels when the average is 17—a difference the same in kind but less in degree, and obtained on plains land and not in the river bottom, which may count for considerable of the difference. However that may be, the report of the director of the University experiment station for 1914-15 shows that during the grain year of 1914 "at the University Farm at Davis, with a system of biennial cropping and without irrigation, Cumberland wheat (51.6 bushels per acre), red Algeria oats (100.6 bushels) and improved common barley (76.8 bushels), gave the highest yields. There were 63 varieties of wheat grown, averaging 28.8 bushels; 18 varieties of oats, averaging 61.4; 36 varieties of barley, averaging 52 bushels. The rain-

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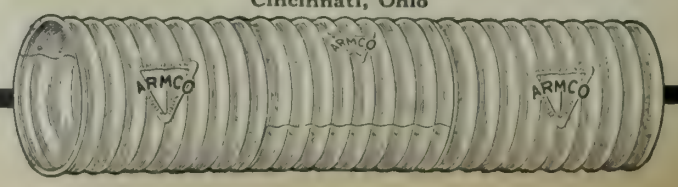
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fall for the year ending June 30, 1914, was 28.70 inches and for the previous year 8.84 inches."

Obviously the wheat yield of 51.6 bushels was in part due to summer fallow, and yet such fallow could have saved little moisture from a preceding year of drought. The good use of the generous rain of the current crop year had more to do with the yield.

During the three years 1908, '09 and '10, the average yield of all wheat varieties grown, many of which were poor, was 40.4 bushels at the University Farm, 35.2 bushels at the station near Tulare and 33.2 at the station at Ceres. During the same three years the average yield for the state was 14.5 bushels.

What All the Figures Signify?— We have presented these figures to support the contention that California soils are not as seriously reduced in fertility as common conversation too often represents them; that they are still responsive when they are given a chance; that during the decade 1905-14 the average annual wheat yield of California was 15.4 bushels while the average of the United States was 14.8 bushels; and that the general agriculture of California, as it presses forward toward better understanding and toward more intelligent and economic work with the soil, still has an exceptionally good foundation to build upon. As, then, we glance back at our thesis: What is the determining factor of greater success in "getting more from the soil"? the answer must be that **to reach greater success we must do better farming.**

It is obviously impossible in a single article in which it is our purpose to present interesting facts, rather than to preach from them, to consider thoroughly in what better farming consists. We shall choose a few factors of better farming and try to present them suggestively rather than exegetically. Suppose we take five of them and ask our readers to think them over for themselves.

Significance of Soil Condition.— Nothing has been so strongly emphasized during the last decade than that the chief loss of California soils, by current farming methods and policies, is the reduction of the content of organic matter. The scientists have shown us clearly that this is a direct loss of things which plants need for free growth, and they have shown also that as decaying organic matter in the soil is reduced its activity which ministers indirectly to the growth of new plants is also reduced. This matter has been explained in detail in our columns during recent months by Dr. C. B. Lipman and others and it is making a deep impression. Nearly everyone is thinking or doing something toward securing stable manure or green manure or both, and the more there is done in this line the better is the start toward better farming. And those who are being thus convinced and converted in their farm policy may be interested to know that there is nothing really new in this conviction even in California, although we do now know much better the reasons for holding it. Let us go back to that 1858 annual address by Wilson Flint, to which we have previously alluded, and read this:

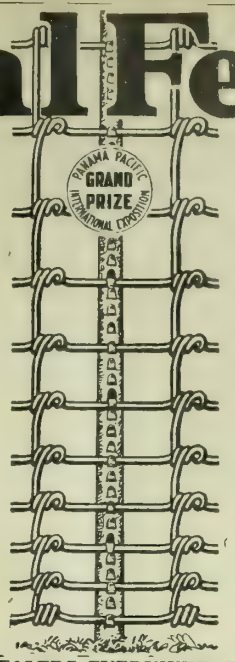
"That horticulture in California has many difficulties to encounter is evident from the fact that our soil is of recent secondary formation and is generally deficient in those rich leaf molds which can only be produced by the rotation of forest trees. To supply this deficiency is the first thought of the scientific horticulturist, and I may remark that this constitutes the material difference between agriculture and horticulture. Agriculture looks mainly to the largest breadth of acres under subjection, erroneously calculating that the more acres planted the greater the profits—a system of impoverishment and exhaustion, which by succession of crops, garnered and sent to distant markets, return none of the atoms drawn from the land, but meets the demand of a famishing soil with a cheaper and more superficial cultivation"—and then follows the statement about the reduction in the yield of cereals which we have quoted above.

Mr. Flint seems to have had a

(Continued on page 401.)

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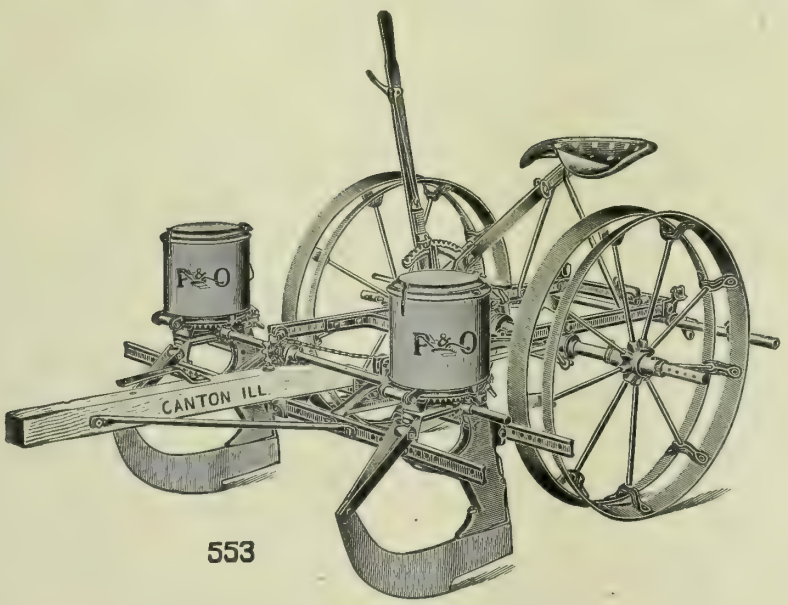
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It is not a made-over machine but is built from the ground up for Coast needs. This fact, together with the reputation of the P. & O. Company for building tools right in every detail, insures absolute satisfaction to every user of this planter.

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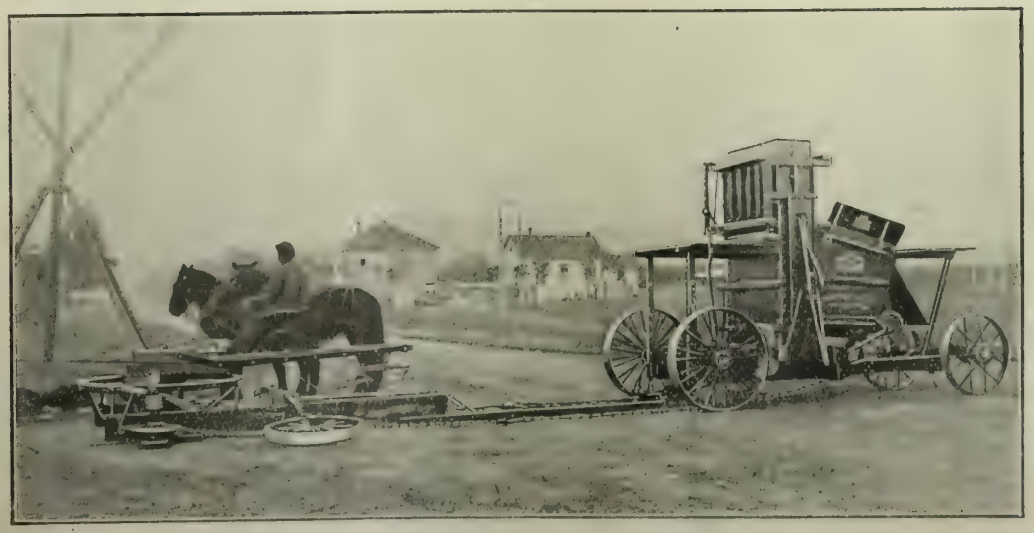
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Equipped with a full set of plates for planting any of the different kinds of corn or beans commonly planted in California, including Egyptian and Kaffir corn.
Adjustable to any width rows from 28 to 44 inch. The check rower machine is adjustable for checking rows 3 ft. 4 in., 3 ft. 6 in., and 3 ft. 8 in.
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General Agricultural Review.

CITRUS AND SEMI-TROPICAL.

Several people are setting out acre lots or more of feijoas, according to F. O. Popenoe of Altadena.

Three carloads of grapefruit trees were recently received in the Imperial Valley in one day—one each at Imperial, El Centro, and Heber.

Avocados should be shaded the first year in orchard form by a canvas stretched over two vertical sticks set on the south side of the tree.

The Whittier Citrus Association cleaned up their navel oranges this week. There were about 175 carloads. They expect to handle between 400 and 500 cars of Valencias.

Six young avocado trees of several varieties were sent to Egypt last week by the West India Gardens of Altadena. About a dozen were successfully shipped to Egypt last summer.

The Oroville Citrus Association recently met and elected the following officers for the coming year: E. W. Fogg, president; Ed. Harkness, vice-president; and F. W. Eilerman, secretary and treasurer.

Black snow falling from orange trees when the plow outfit would strike branches, was the experience of P. F. Ryan of Downey who had sprayed about an acre of badly scale-infested and soot-covered trees with Shurekil spray.

In order to prevent the destruction of perfectly good orange trees from seepage water, 3,000 feet of tile has been laid on the Whitney ranch, Loomis, Placer county, at a cost of 25 cents a foot, to drain the different "wet spots" on the ranch.

A 12-acre citrus orchard of large trees most severely infested with purple scale was sprayed with Shurekil spray last fall for M. E. Wallace of Anaheim. The leaves mostly fell off, but the vigorous crop of new leaves are clean.

The Anaheim Citrus Fruit Association plans the erection of an ice factory and precooling plant to cool its own fruit before shipment. The cost of the venture will be $50,000, but it is expected to save members of the association many thousand dollars annually.

At a mass meeting at Lindsay on March 18, three hundred citrus growers of Tulare county, members of the Tulare County Protective Association, expressed their willingness to conform to the Federal regulations concerning the 8 to 1 test, in shipping their 1916 crop.

Citrus growers of the 1860-acre tract on North Whittier Heights are working for the organization of a local of the California Fruit Growers' Exchange. Their trees are just coming into bearing, and much of the fruit has been hauled over the hills to Whittier, six miles away.

A missionary on furlough from India took back with him last summer a number of varieties of avocado trees among other fruits. He recently wrote to F. O. Popenoe that they were creating great interest and the Indian Department of Agriculture wanted to get some from him or from California for trial.

E. E. Forrister of Imperial county has just planted 650 Marsh seedling grapefruit trees and reports them doing fine. On Mr. Forrister's ranch are other grapefruit trees which were set out a year ago. In addition are peaches and apricots, all of which are doing well. An especially good crop of almonds is looked for this year.

At the recent meeting of citrus fruit men held in Los Angeles to confer with State Market Director Weinstock, all the conflicting citrus fruit shipping interests were able to come together as a unit in agreeing to the tentative plan outlined for the creation of a State Bureau of Distribution under the direction of the State Market Director. The proposed plan has in view the selection by the shippers, representing 100 per cent of the output, of an Advisory Council of five, who in turn will nominate as executive head of the Bureau of Distribution the most competent and efficient man to be found anywhere in the United States. This nominee will be appointed by the State Market Director as head of the Bureau of Distribution. His duty will be to gather and furnish to the shippers accurate daily information as to the needs of the markets of the country for citrus fruits, thus enabling the shippers to intelligently supply the markets of the country.

OLIVES AND NUTS.

Dan H. Whisman is planting 800 olive trees on his 13 acres near Paradise. L. A. McCandliss, also of that section, is setting out 500 olive trees on his land.

A lot of folks have land they want planted to walnuts, but do not now have money for the trees, according to Geyer Bros. of Alhambra. One man wanted to trade alfalfa hay for trees.

The Arizona Commission of Agriculture and Horticulture has issued a quarantine order to take effect April 1, 1916, prohibiting the further importation of olive trees, nursery stock, and rooted cuttings from other states and foreign countries in order to protect the olive industry of Arizona against the introduction into the olive orchards of the State of insect pests and plant diseases.

B. B. Le Baw of Chino, who for seven years has watched and studied the walnut growth of various kinds in that district, claims that seeded crops of walnuts as a whole do not do as well as budded stock. The Placentia stock, he claims, is superior to any variety tried out in the Chino section. Mr. Le Baw claims it to be a duty of the Secretary of the Walnut Association to advise newcomers as to the most suitable variety to be planted.



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YUBA BULLETIN

Contents of the Spring "BULLETIN"

First Announcement of the New YUBA PLOW!

Stanford Campus Invaded by YUBA Ball Tread!

CHEW MOCK who owns Four YUBAS tells about them in his own way!

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The coupon brings it to you FREE and future numbers, too.

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Please send me Spring Number of the YUBA "BULLETIN"

I own.....acres, and my principal crop is.....

I will buy a Tractor this year ☐ YES ☐ NO
(*I wish your Catalogue also*)

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THE YUBA CONSTRUCTION COMPANY

YUBA BALL TREAD

YUBA TRACTOR

DECIDUOUS FRUITS.

C. H. Brown of Gridley is preparing fifty acres of his land for planting prune trees.

Miller & Lux are planting many varieties of fruit and grapes on their Peach Tree ranch in Monterey county.

The Producers' Fruit Co. are preparing plans and specifications for the erection of a new fruit house in Auburn.

As the necessary funds have been subscribed, the cannery of the Lake County Canning Co. will be moved from Upper Lake to Ukiah.

J. F. Benton of Arcata has been appointed County Horticultural Commissioner of Humboldt county to replace Geo. B. Weatherby.

According to the old-time fruit growers, crop prospects for 1916 were never better than at present in Placer county.

A. J. Gallaway of the Table Grove Nurseries, Healdsburg, recently received 80,000 seedling prune trees on myrobolan roots from France.

Many deciduous orchardists around Pasadena are pulling out their trees when notified that if they do not spray them effectively, the county will, at 25 cents per tree.

On March 16, the Directors of the Tulare County Growers' Association met at Porterville to plan cannery activities for the coming season and to arrange for financing the pack.

Quince markets have been no good the past two years, according to Mrs. E. M. Wiley who has one of the largest quince orchards in Los Angeles county. For a few years they paid best of anything.

At a recent meeting of the Lincoln Fruit Growers' Association held at Lincoln, plans were discussed for the organization of a fruit shipping company with Lincoln as the shipping point.

G. W. Harney, Horticultural Commissioner of Yuba county, reports heavy shipments of trees and plants into his county, and states that the month of March will add much to the total shipments as Yuba county's horticultural interests are expanding rapidly.

GRAIN AND FIELD CROPS.

LeRoy Little, pioneer grain rancher of the Imperial Valley, has 3000 acres planted to barley this season.

W. C. Colley of Chowchilla is shortly to commence the erection of a grain elevator, with the capacity of 100,000 bushels.

L. E. Wright of Chino has been hauling alfalfa hay the past week, having sold it at $20 per ton. None of his crop has sold at less than $18.50.

Considerable interest is being manifested by the ranchers of Placer county in Sudan grass. It is expected that numerous small, trial patches will be sown this spring.

It is reported that a new rice company, consisting of San Francisco capitalists, is being formed, to plant 2,358 acres in the Traver district of Tulare county.

A petition is being circulated in the Manteca section, asking the Spreckles Company to locate their proposed beet testing laboratory there.

A. M. Standish of Milpitas reports that he has just finished shipping Brocoli in carload lots to New York. This is the first year that the above crop has been grown on any scale in that vicinity.

With a considerable increase in acreage planted to wheat and barley, and many additional acres planted to rice and beans, bumper crops are expected in Sutter county this season.

San Joaquin county rice growers met on March 18 at Stockton and formed the Rice Department of the County Farm Bureau. The meeting was addressed by W. W. Mackie of the University of California.

Sonoma county will shortly have a branch of the West Coast Potato Growers' Association formed there; and a strenuous effort will be made by the leading potato growers of that county to have a University experiment station established there.

The first alfalfa hay of the season in the Modesto section was cut last week, but it was found that it contained very little substance when allowed to cure. However, most of it is being fed green, and fed in connection with old alfalfa or concentrates, causes an increase flow of milk. A number of farmers are pasturing part of theirs.

GRAPES AND SMALL FRUITS.

The California raisin crop is now three times as large as that of Spain, according to a statement by the Dept. of Agri. About 60 per cent of the crop is grown in Fresno county alone.

According to a report by Horticultural Commissioner Wm. Gould of Yolo county, over 30,000 seedless Sultana grape vines are being planted in the immediate vicinity of Woodland.

Thirty-one buds of the Lue Gim Gong orange and eight of the Sampson Tangelo obtained from the Riverside Experiment station were inserted in heatlhy seedlings March 11 by H. A. Randall of the Randall Bros. Nurseries, Whittier.

Choice Rice Land

320 Acres (Tulare County)

2 Good Artesian Wells, with good flow of water. Pumping plant installed at one well which will supply over 100 inches of water.

There is a **big bargain** in this for cash. Will sell all or divide it. 1½ miles to Railway Station.

Also 580 acres in same section. One fine artesian well, with good flow; also a pumping plant that furnishes over 100 inches of water, good 5-acre reservoir.

Will sell one-half or all at **bargain.** Located on Railroad.

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John Deere Implements





John Deere Disc Plows for Tractors

For Field or Orchard

MADE especially for use in the West. Work successfully in every soil where a disc plow should be used.

Plow anywhere from five to twelve inches deep.

One-man outfits—controlled by man on the tractor. Work with any standard tractor.

Can be used either for field or orchard work simply by changing the land axle.

All levers down close to plow when at work—plow can be operated close to trees and under limbs without injuring them.

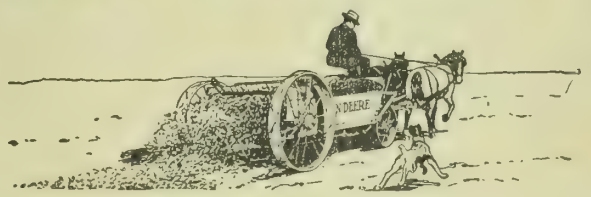
Easily transported—special lever at the rear for lifting discs high and level.

Over fifteen inches clearance under beam; twenty inches between discs.

Twenty-four or twenty-six-inch discs with chilled metal bearings—constructed so that bearings do not drag along wall of furrow when plowing deep.

Can be reduced to four discs by taking off one intermediate section and telescoping connecting rods.

Write for free booklets describing the John Deere Tractor Disc Plow No. 10 for field work and No. 11 for orchard and vineyard.



John Deere Spreader

The Spreader with the Beater on the Axle

ONLY hip high to the top. Wheels out of way when loading. Mounting the beater on the axle is patented. Write for Spreader booklet.

Three exclusive John Deere Spreader features:

[1] Beater on the axle—nothing else like it. [1]

[2] Revolving Rake—load moving back to beater revolves the rake. Draft actually less. Even spread certain—no bunching. [2]

[3] Ball Bearing Eccentric Apron Drive—requires no attention. Performs wonders in the working of the spreader. [3]



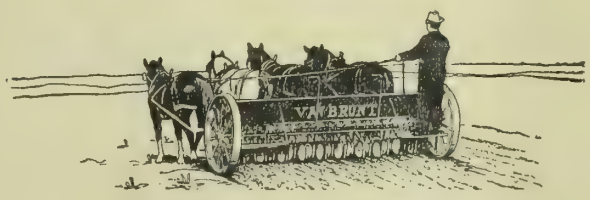
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Dependable Farm Power

"R & V" Triumph—always develops rated horse power—made in 1, 1½, 2½, 4, 6, 8,10, 12, 16 and 20 H. P. sizes, stationary and portable.

Easily started; perfect speed control (speed can be varied 40 per cent without stopping engine). Complies with insurance regulations. Hopper cooled—a simple, efficient system that does not require long pipes and numerous fittings.

High grade throughout. Inspect the extra guard ring over piston pin to prevent possibility of scoring cylinder. Ask about the "R & V" oscillating magneto. Write for free booklet.



Van Brunt Drills

With Adjustable Gate Force Feed

THEY plant any small seed, alfalfa to bearded oats, peas or beans.

Amount sown per acre easily regulated merely by shifting feed gauge levers.

All the ground sown, because the Van Brunt adjustable gate force feed and special agitator in the hopper compel seed to leave hopper in even, continuous streams—no bunching or choking up—and an equal amount goes into each furrow.

An even stand of grain is secured, because pressure springs compel all the discs to cut furrows of even depth, and the closed delivery places seed at bottom of these furrows.

Van Brunt Drills do not clog up. Scrapers keep discs absolutely clean.

Smooth running—each wheel drives half the feeds, equally distributing the work. A direct, double, gear drive from the continuous axle.

High grade discs with bearings that are guaranteed to last lifetime of drill. Either single or double discs.

Grass seeder attachment can be furnished which will drill or sow broadcast as desired. Write us for free booklet.



John Deere Plows for Light Tractors

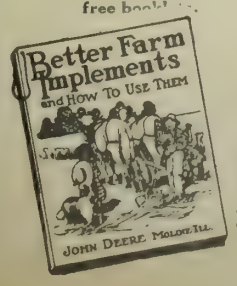
For Orchards and Vineyards

PRACTICAL—one-man outfits. Work with any standard tractor. Controlled by man on the tractor.

High and Level Lift—Pull the rope and all bottoms raise high and level. Another pull lets them down. Plows do not clog or gather trash on the turn.

No levers—plows leveled and depth regulated by screw device. Can be run close to trees and vines without injuring branches.

Regular with three or four 12-inch bottoms. Quick Detachable Shares—save 80% time changing shares. Write for free booklet describing light tractor plows for orchard and vineyard, or regular field work.



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Better Farm Implements and How to Use Them

BOOK FREE—168 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars. Describes and illustrates: Plows for Light Tractors; Steel and Chilled Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Lister Plows and Cultivators; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain Wagons; Teaming Gears; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders, Stackers, Sweep Rakes, Mowers, Self-Dump Sulky and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills and Seeders; Grain Binders; Corn Binders; Gasoline Engines. This book sent free to every one who states what special implements he is interested in and asks for Package No. A-152.



John Deere, Moline, Illinois

Mechanical Power on the Farm.

TRACTOR PLOWS AND DIGS BEETS.

[Written for Pacific Rural Press.]

A 110-acre sugar-beet patch was plowed 18 inches deep last winter by J. Buchheim of Tustin, Orange county, with his 65 h.p. Caterpillar. The job was finished Jan. 8 except a piece which was too wet even for the 16-inch track. Then in mid-February he had a 3-day job harrowing six inches deep with spring-tooth harrows. There were five sections each four feet wide, all hinged together, and weighted down with stumps. He said he usually pulled 6 sections. This required about 30 gallons of distillate per 9-hour day.

Right after the harrowing, he planted the beet seed in rows 18 inches apart. He does not cultivate with the tractor, but plows out the beets, four rows at a time, in the fall, using a 10-inch track on the engine instead of the one 16 inches wide.

PUMP INCREASES CROPS.

[Written for Pacific Rural Press.]

A fine crop of Royal apricots last year on 37½ acres, and about the best prospects for this year, in a sandy country where some folks are struggling along with dry farming are due principally to two things, one of which is pump irrigation. This is what the owner, G. H. Waters of Pomona, thinks of his orchard southeast of Ontario.

Lifting 125 inches of water over 100 feet to the surface with a 50 h. p. motor and a Layne and Bowler pump does not seem expensive when extra returns are greater than the expense. Pumping does not lower the water level here, as the well is 356 feet deep. The motor does not seem to be really working.

According to J. C. Martin and J. B. Moore, who have charge of the ranch .and do the work, the light sandy top soil is 12 feet deep at the well. The soil varies at different points in the orchard so that, applying the whole 125 inches at once in checks, requires a day to irrigate three acres in some places, while five acres have been irrigated in an afternoon. Water is delivered at the edge of the orchard through burnt sewer pipe cemented at the joints.

The pump was supposed to deliver 100 inches of water, but it didn't, so a larger pulley was put onto the motor and the flow increased to 125 inches.

The outfit is used to water the apricots, a small peach orchard, a field of alfalfa, and perhaps some of the neighboring ranches, for there is far more water than can be used on this place.

PUMPS OVERHEAD IRRIGATION.

[Written for Pacific Rural Press.]

One of the few overhead orchard irrigation projects in California is that of D. J. Overholzer of Covina. While 10 acres have been irrigated this way through several years, the system is not being extended, though Mr. Overholzer irrigates entirely this way on this block, and has no intention of changing the system. The trees are old ones and mostly over 15 feet tall.

An electric pumping plant is located at the middle of one edge of the orchard. An underground pipe leads directly across center and is connected to about a dozen upright 2½ inch pipes about 15 feet tall.

From each of these an inch-and-a-quarter pipe extends several lengths in each direction sidewise across the orchard. These are extended to the edge by inch or ¾-inch pipes, all hung about 12 feet high from wires run over the tops of four vertical 2½-inch pipes on each side of the central line. Alternate rows of these vertical posts are supported by another wire crosswise and some are guyed to the ground.

All of the lateral pipes are fitted with patent sprinklers. These throw the water to one side or the other as the lateral pipes are rotated a quarter turn or more. The rotation is accomplished by a pair of levers on each pipe, along the central supply line. The ends of the levers of the various laterals are connected by wires running over pulleys to the pumping plant where all are turned at one operation by pulling one wire or the other. Any lateral may be shut off by hand cocks.

IS DISTILLATE STRAINING DANGEROUS?

To the Editor: I read in your March 4 issue a letter from J. N. Odell regarding the danger of gasoline straining. Kindly advise through your paper if this also applies to distillate.—J. P. T., Roseville.

[Answered by J. N. Odell, San Francisco.]

[Although distillate straining is not so hazardous as gasoline straining, the risk is still there. The difference in degree is due to the fact that distillate is less volatile than gasoline and therefore does not evaporate quite as quickly. Many overlook the fact that the danger of explosion is not in either liquid, but in the gas generated therefrom. The moment either gasoline or distillate is exposed to air the formation of gas begins, and the danger of explosion exists.]

SIPHONING A WELL.

To the Editor: I have a well of water that I want to siphon. It is 250 feet from the raise and the raise is 12 feet. I have 150 feet of inch pipe and 1600 feet of three-quarter inch pipe. Where is the proper place to put the inch pipe: at the well or at the outlet?—Subscriber, Brentwood.

[Answered by S. H. Beckett, University Farm, Davis.]

[In placing the siphon which the subscriber describes the larger pipe should always be placed at the suction end of the siphon, which in this case would be at the well. With a siphon of this length, it is advisable that a tee, valve and suction pump be placed at the highest point, which will allow easy priming at any time. You will also realize that under the conditions stated, with such a long length of small diameter pipe, the discharge through the siphon will necessarily be very small.]

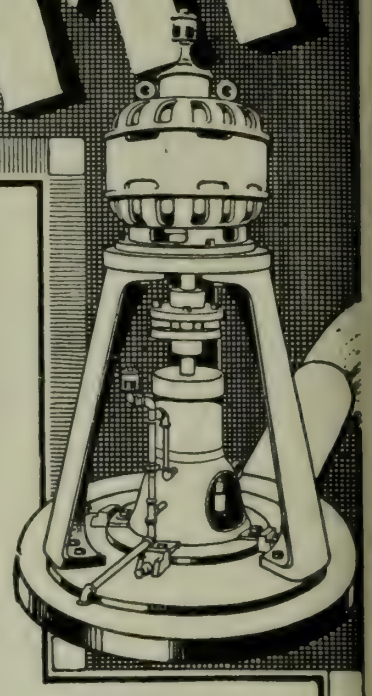
CHOPS SILAGE AND ALFALFA.

[Written for Pacific Rural Press.]

Chopped alfalfa, beet pulp, and green barley or silage make up the ration fed in the milking barn to 160 milk cows on the Handorf Dairy ranch in Los Angeles county.

They claim to be able to store much more alfalfa chopped than

Layne & Bowler PUMP



Small Cost

When one considers the greatly increased profits and succesful crops that are absolutely assured year in and year out, because of being able to depend upon a reliable pumping plant, the cost of installing such a system is very trivial. No better investment can possibly be made.

With the introduction of the **Layne & Bowler** pump, which was perfected after years of experimenting and the expenditure of thousands of dollars, all the exasperating pumping troubles of the past disappeared.

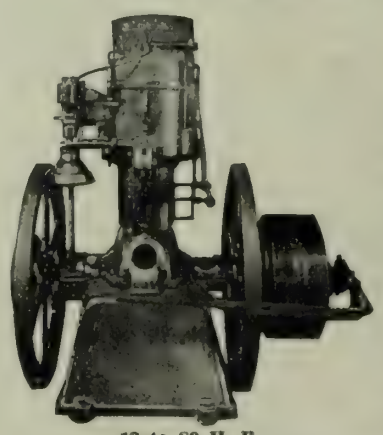
Layne & Bowler Pumps are constructed in different sizes to meet absolutely every requirement. Write for Catalog No. 25.

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12 to 80 H. P.

MEET EVERY REQUIREMENT.

When buying an engine take the first cost, plus the operating cost, plus the interest on your investment, and the **VICTORY OIL MOTOR** will be the safest investment.

They mean steady power, less vibration, smoother running. They are simple and dependable. No valves, cams, gears, or small troublesome parts. Anyone can understand and operate them. No engineer is required. The **VICTORY OIL MOTOR** operates on the low grade fuels without sooting or clogging, and will cut your operating cost in half. Let us figure on your complete irrigation system. Our guarantee covers everything.

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Locate in VIRGINIA OR NORTH CAROLINA



Locate in one of the wealthiest states in the South. Excellent climate, no extremes of heat or cold. Average rainfall 45 inches. Counties have State Agricultural Agents. Land values increasing constantly. Boys Corn Clubs. Girls Canning Clubs. Good Schools, churches, roads, railroad facilities. Nearby markets. General farming, dairying, poultry, fruit and stock. Farms from $15 per acre up. Write for beautiful magazine, official lists, maps and other information, Free.

N&W

F. H. LaBAUME, Agr. and Ind. Agent, Norfolk & Western Railway, Room 119 N. & W. Bldg., ROANOKE, VA.

loose, and the cattle eat it cleaner. They would not do without the chopper now.

It has a 36-inch cutter and is run by a 40 h. p. Fairbanks-Morse induction motor. It is bolted to the concrete floor. The blower places chopped alfalfa at the other end of the big corrugated iron barn which is about 50x100 feet and 25 feet to the eaves. No hot dusty mowing away is needed as with hay.

Three or four teams are kept busy on an average haul of a half mile; two men throw from the wagon and one feeds the machine. The same machine cuts corn silage and blows it via an overhead pipe into the silo some 30 feet away.

ANTI-RUST PREPARATION.

An ounce of camphor dissolved in a pound of lard is a good anti-rust preparation that farmers may use to cover the bright parts of their machines. The scum that forms in making this mixture should be taken off. If it is desired to have the preparation the same color as the machine, lead may be added. The mixture should be applied to the well cleaned parts and allowed to remain about twenty hours. Any excess may be rubbed off. The mixture forms a coating that will take a good polish when rubbed with a soft cloth. Axle grease is also excellent for keeping plow bottoms from rusting and may be used for the bright parts. Paint is a good rust preventive but hard to get off. —O. A. C. Bulletin on Care of Farm Machines.

WHY FARMERS BUY MOTORS.

An automobile manufacturer makes the following declarations: The auto show at Kansas City demonstrates that the preceding shows in New York and Chicago were not bubbles, inflated Eastern war prosperity and the wealth of the big manufacturing and financial centers:

"Kansas City's show draws mostly from the rural dealers and the farmers in the center of this country's great corn belt. It is meeting that gets close to the soil and the business that it develops comes from the furrows of the plow, and not from the quotations on the ticker.

"The stupendous amount of business done—and wholesale business at that—reflects the stability of the agricultural business of the country. When the farmers flock to buy automobiles it means that there is wheat and corn in the ground that promises well, that the foodstuffs, which are the backbone of all industry, are in good condition.

"The Kansas City show simply backs up the prediction made after the larger ones. This will be a tremendous year in the motor car world."

Grind the valves.

Keep the engine clean.

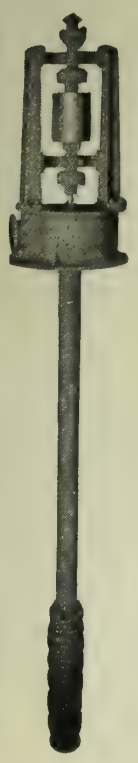
Keep plenty of oil in the lubricator.

Don't get the magneto wires oil or water soaked.

No Pit

is required with the

Krogh Deep Well Turbine Pumps



For bored or drilled wells from 10 inch inside diameter up; and for capacities of 250 to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.

Krogh Manufacturing Company

San Francisco Los Angeles



Two Ears of Corn Where One Grew Before

The farmer who can make two ears of corn or two blades of wheat grow where but one grew before, is well on the way to prosperity for he is solving the problem of intensive farming.

Irrigation with G-E Motors

has made many a dry, unproductive district into profitable farming country—a garden spot of bountiful crops.

This is not empty boasting or mere theory—it is *fact.* Ask anyone who has used G-E motors on his farm—he will tell you that they save money every day in the year. The first cost is low, too. Write our nearest office—it costs nothing to find out and places you under no obligation.

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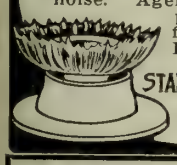
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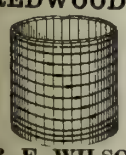
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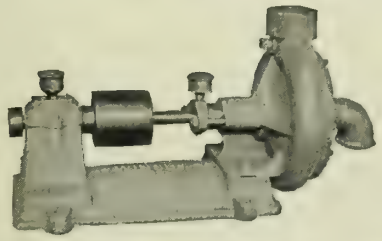


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Success in Raising Pigs.

[Written for Pacific Rural Press.]

A bunch of 133 strong, lively, hungry little porkers from 14 sows or an average of 9½ per sow is something to be proud of. The Oak Grove Dairy Farm at Woodland is the owner of these pigs, all of which are out of registered sows and sired by an eight and a half year old boar that weighs 950 pounds.

In order to get a record like the above it is necessary to select sows that are known to produce large strong litters, whose sires and dams were of the same qualifications, and then breed them to a male whose breeding record is known. Many a good breeding animal is slaughtered.

Ancestors are not all, however. It takes the right feed and feeding to develop the little fellows. This should start long before they are born. On the above farm the sows are fed a bone and muscle building ration, such as middlings, bran and tankage, a good mixture being 40 pounds of middlings, four pounds of bran and four pounds of tankage.

This is fed in the form of a slop, the amount fed depending upon the sow. Although no set rule can be given, the sow should be kept in good condition. We might add that a hog Mr. Armstrong, the manager, calls simply in good condition would be called fat by others. At no time should she be allowed to go down in flesh, as this stunts the little pigs in the making and as a result makes weak pigs at farrowing time.

Plenty of exercise is also essential for brood sows and boars, it being as necessary for the boars to be strong and vigorous as the females.

After the sow farrows enough of the above mixture is stirred into a gallon of water to make a very thin slop. This is gradually increased in thickness and as the pigs grow and are able to eat, barley is added, so that by weaning time the ration is composed of the above with 32 pounds of barley added. Cleanliness is essential at all times. A good dry place to sleep has saved many a pig.

SEPARATED MILK FOR PIGS.

To the Editor: Can you tell me if separated milk will hurt sows or the pigs, in a week or two? We have heard it will give sows milk fever.—C. F. W., Mulberry.

[Answered by Prof. J. I. Thompson, University Farm, Davis.]

Some undesirable results have been secured when skim milk direct from the separator was fed to sows or sows and pigs in considerable quantities. Unless a sow is known to be a very light milk producer she should not be fed any skim milk until the pigs are a week, and preferably ten days, old. If, at that time, the pigs are handling all that she is producing and capable of using more, it is advisable to begin feeding her a small amount of milk each day and increasing it gradually according to the needs of the sow and pigs. Overfeeding of the milk would cause an overproduction by the sow, which would either result in scouring the pigs or, if they were unable to take it, it might produce milk fever in the dam. Some unfavorable results have also been secured when the spout of the separator was allowed to empty directly into the hog trough, and the pigs were permitted to accumulate about the trough while the separating was going on. This trouble is caused by the milk flowing into the trough so slowly that the pigs, in attempting to drink it, get a considerable amount of air with the milk. The froth and foam on top of the milk also causes them to consume more air than they ordinarily get in this manner, and the result has been serious scouring.

The remedy for the latter is to keep the pigs away from the trough until the separating is finished.

YOUNG PIGS EAT ALFALFA PASTURE.

[Written for Pacific Rural Press.]

Alfalfa pasture is the first solid feed of many pigs, which begin to eat it at or before two weeks old as observed by Hawley Bros. of Madera, C. C. Stewart of Orland, and others who have observed no ill effects, but rather a freedom from stunting and setbacks.

Pigs root alfalfa only when they are crowded on the pasture, or, as observed by T. R. Nickalls of Los Molinos, when the tops are short and ground wet. His neighbor, C. E. Barrows, feeds the shoats corn and slop all they want, after which they help themselves busily to all the alfalfa pasture they need without rooting it up. He thinks that a man could make a good living on 20 acres with a dozen purebred sows (though not with scrubs) by planting half to alfalfa fenced into half acre lots, and half into corn or grain. But he figures it wouldn't keep him any busier with such a scheme on a larger place. Henry Webb of Madera has a rotation of crops which supplies much more feed per acre and could thus keep more hogs on a small place. This rotation has been described in another article.

Save Money on Wire Fencing! -send for WHITING-MEAD'S Free 1916 catalog showing how to save money on Building Material

WARNER FARM FENCING, 50c ROD.

—This price in 20 rod rolls. Made of No. 10 galvanized wire with Glidden galvanized barb wire margins. This is an exceptionally good fence, designed to be used for turning both large stock and pigs. The Warner Farm Fence is made with the same tie as other Warner styles. The barbed borders are a great advantage. The barbs on the bottom prevent hogs from crawling under, and those on top prevent stock from reaching over and depressing the fence, while by their being woven into the fence the danger to the stock is removed. It should be remembered that it is just as important to prevent going over or under a fence as to prevent going through.



Bankrupt Stock of Shovels.

About 1,000 at 65c Each. Delivered Free to You.

—Another fortunate purchase, a lot of shovels, about 1,000, all in splendid condition, but from being in a warehouse during recent rains have become slightly water stained, but this in no way affects their usefulness.

—Choice of Long Handle, round or square point shovels, or the "D" handles with round, square or scoop shovels any one of them or as many as you want, 65c each, delivered free within a radius of 100 miles of L. A.



Ready Roofing, $1 a Roll.

—"Our Leader" put up specially for us by one of the largest roofing manufacturers in the world. It's 1-ply smooth finish, and is easily the best value that we have ever had to offer at even a higher price.

—Each roll contains 108 sq. ft. with nails and cement for laying. This will cover 100 sq. ft. of roof, allowing for laps. Other roofings at like low prices:

1 Ply King, per roll.....$1.25
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3 Ply King, per roll.....$1.75
Snow-White Roofing Paper, per roll $1.75

Paints $1.50 Gal.

—You can buy paints cheaper from us than any other dealer in the West. We buy in large quantities and sell for the lowest prices.

—Standard House and Floor Paints, $1.50 per gal.

—Standard makes of varnishes at 25% off regular prices.

Everything in Paints, Wall Tints, Brushes etc., at big savings to you.

Dutch Kalsomine 4½c per lb

Black Graphite Roof.—per gal.* 50c

Standard Roof Paints—red, green, gray — per gal.* 85c

Shingle Stain, made from pure ground colors per gal.....50c

*In 5 gal. lots only at this price.



Plumbing.

—Our plumbing department is exactly the same in variety as carried by any of the big "standard price" plumbing jobbers, bought from the same factories. But we buy in tremendously large quantities and at the same time take some seconds and slightly imperfect goods and get big reductions on regular prices.

—We make you the most exceptionally low prices as a result, so that no matter what you want in plumbing, from a $40 (regular)) bath tub at $35 to a somewhat imperfect lavatory, the $7 grade at $4 —Send us your plumbing list and we will show you in dollars and cents that it pays to trade with us.

75c Shingle Stains, 40c Gal.

—A special lot of shingle stains that we have secured in an unusual way and so offer them at about half price. Specially made for use in this climate. Choice of brown, yellow, red, and black. This price in 5 gal cans only.

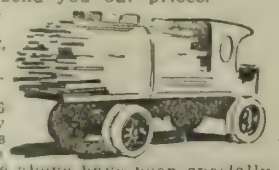
—This shingle stain is Railroad salvage from the recent floods, and on account of being wet many of the cans lost their labels and became mussed up, but the contents are absolutely O. K.

Lumber.

—A few items that should give you an idea of how you can save money ORDERING BY MAIL from us. We carry a full and complete stock of lumber, both rough and finished at all times, and will cheerfully send you our prices.

1x8 Redwood Shiplap, $22 per M.
1x4 Redwood Ceiling, $20 per M.
⅛x4 Plain Bevel Siding, $11.50 per M

—The last item, in 6 to 10 ft. lengths only and F. O. B. the cars at Los Angeles at this price. All of the above have been specially run through the mill from common lumber, especially for erecting outbuildings, poultry houses, etc.



No. 1 Redwood Shakes, $15 per M.

—Absolutely number one grade and measure 5 inches by 36 inches.

Windows—Doors—Etc.

—Our Sash and Door Dept. is one of the largest in the Southwest, and occupies one entire floor of our large main building. We have at all times, ready for immediate shipment, everything needed in standard sizes, sashes, doors, screen doors, front doors, etc., etc. SEND FOR OUR PRICES BEFORE BUYING.

$2.50 Woolnap Blankets, $1.40.

—Very fine grey blankets, have attractive colored borders at ends and are well finished, full bed size, just right for chilly mornings. Order early on this item, as we have only about 6 dozen blankets on hand.

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Experience in Silo Construction.

To the Editor: You ask in a recent issue for the experience of those who have built concrete silos. Two years ago I built one 14 by 28 feet and by doing the work myself it was not very expensive.

I used five tons of Portland cement at $13 a ton, 700 feet of lumber for forms at two cents a foot and $12 worth of hog wire fencing for reinforcing. The forms were four feet high, cut in eight sections, sheeted with resaw, and studded with 2 by 3's. The circle was cut out of 1 by 12's. The silo is six inches thick at the base and three inches at the crown, and plumb inside. It was flattened slightly at the doors, inside, to increase the thickness there, and wires were lapped at the doors to double their strength.

I mixed and raised the concrete with a 2 h.p. gas engine, using a 50-gallon barrel for mixing and the hay carrier and cable from the barn for raising the scaffold and derrick. The lumber was all used for other purposes. I still have the forms, which can be used either for a larger or smaller silo by putting in a section or taking one out.

I painted the silo inside and out with clear cement as fast as it was stripped and scraped. It has not cracked and I have not had any silage spoil around the sides. It has a capacity of 80 tons. **J. E. Mount.**

Newman.

[Cement f. o. b. San Francisco at the present time is worth at the rate of $23.80 per ton, so it is evident that your cost was lower than can be expected at this time.—Editors.]

THE FARMER AND THE GAME LAWS.

To the Editor: You are certainly to be congratulated on the article, "Jackasses and Jackrabbits," in your issue of March 11. If anybody needed help it is the farmer from the present game laws.

The farmer is furnishing the feed and water for all the game in the State. The State charges $1.00 for the privilege of hunting and turns the hunter loose on the farmer without so much as giving him the protection of a game warden against trespassing.

On top of this there are people going around the State telling the children that birds, eating our vegetables, fruit, grain, Xmas berries and angle worms, are a benefit and should not be killed.

Robins ate five tons of olives around St. Helena this fall before the oil mill opened for work. They cleaned up 500 pounds of persimmons, pucker and all, for me. I could not save half a box, nor had I a right to eat the robins I killed in trying to save the crop.

Angle worms are "nature's soil makers" and the birds destroy them on every hand. When rabbits, mud hens, tree squirrels, robins and deer get thick enough to satisfy the law makers, what will become of us hill farmers?

Talk about the high cost of living! I will raise 15 head more cattle if the State will keep its game off my ranch, and if it will keep its hunters off I will add five more to that, besides more poultry and several hundred watermelons; and over one-third of the farmers of the State could gladly make a proportional addition to their crops.

It is hard to tell sometimes whether the farmer or the game belongs in the pot, but if the Rural Press can get the jackasses classed as predatory animals, to be shot on sight, it will go a long way to solve the question. **H. Overacker.**

St. Helena.

BUTCHERS OWN HOGS.

Mr. George Elicker of Napa county has been killing hogs and selling the meat to the neighbors. The following is some of the data in regard to whether it pays to kill hogs or to sell them directly to the hog buyer, as stated in the Farm Bureau Monthly. These hogs would have sold to the hog buyer at 6c per pound live weight. Mr. Elicker killed them and sold all the meat, with the exception of the head and liver, at 12c per pound. These he sold at 8c per pound.

	Weight alive.	Weight Dressed. Without head and liver.	Head & Liver.
Hog...	95 lbs.	65 lbs.	9 lbs.
Hog...	88 lbs.	60 lbs.	8 lbs.
Hog...	110 lbs.	76 lbs.	9 lbs.
Hog...	87 lbs.	61 lbs.	6 lbs.
Hog...	92 lbs.	67 lbs.	6 lbs.
Hog...	97 lbs.	65 lbs.	8 lbs.
Hog...	90 lbs.	62 lbs.	8 lbs.
Hog...	92 lbs.	65 lbs.	7 lbs.
Total..	751 lbs	521 lbs.	61 lbs.

8 hogs (without head and liver) 521 lbs. at 12c per lb. $62.52

Head and liver of 8 hogs, 61 lbs. at 8c per lb..... 4.88

Amount received from hogs.. $67.40

Butchers' price on 8 hogs, live weight (751 lbs.) at 6c.. 45.06

Difference $22.34

WRONG METHODS OF POISONING SQUIRRELS.

Upon investigating a complaint regarding the efficiency of the Farm Bureau squirrel poison, the Farm Adviser of Ventura county found that it was not being put out properly. When put in bunches the squirrels sit down and shell it, but if it is spread out and they can only find one grain at a time, they store it in their cheek pouches until they have enough to make it worth while to eat. While the poison is in the cheek pouches it gets in its deadly work. Therefore, scatter the squirrel poison.

Auction Sale of Jerseys

At the Rancho Dos Rios

MODESTO

TO BE HELD ABOUT THE FIRST WEEK IN MAY.

DATE WILL BE ANNOUNCED NEXT WEEK

125 Head of Jerseys, of which 40 are registered. Tuberculin tested within 30 days of date of sale.

Surplus Stock from the Rancho Dos Rios Herd.

This herd was originally known as the Mailliard Herd, the foundation of which was imported into this State in 1868 by the well-known breeder, Adolph Mailliard, and which has never been out of the hands of the Mailliard family.

Having a large number of youngsters soon coming into profit, practically the entire herd of cows at present milking will be offered for sale. Among these are about forty head of registered A. J. C. C. females by such sires as—

LAURA LEE'S ISIDRO, No. 57067, A. J. C. C., whose direct male ancestry for four generations back has to its credit 167 cows in the list of tested animals, giving from 14 lbs. to 25 lbs. 2½ ounces in 7 days, and whose dams for these four generations aggregated 263 lbs. 2 oz. of butter in 7 days, which is an average of 17 lbs. 9 oz. per cow, the only female in this line without a recorded test being **LAURA LEE, No. 8550,** who was the dam of five daughters in the tested list.

DORINDA DARLING'S VOLCO, No. 89007, A. J. C. C., whose dam gave 18 lbs. 8 oz. butter in 7 days as a three-year-old, and whose granddam, **PRIDE'S OLGA 4th, No. 96870,** had a record of 27 lbs. ½ oz., and whose sire was a son of the St. Louis Fair champion bull, Merry Maiden's 3rd Son, out of Dorindo Darling, who stood 4th in St. Louis Fair test.

DOS RIOS POGIS, 89008, A. J. C. C., whose sire was a son of the World's Champion 2-year-old Merry Miss, No. 180051, who gave in one year 11.152 lbs. of milk, making 601 lbs. of test butter, and whose dam has a record of 17 lbs. 2 oz.

The dams of these females offered for sale are by such bulls as Brown Bessie's Golden Gate, No. 59477, a grandson of the Chicago Champion cow, Brown Bessie. Rioter Cuba Exile, No. 66055, a strongly bred St. Lambert strain, and other finely bred animals.

Breeding of unregistered stock offered at this sale is practically same as that of A. J. C. C.

HOPLAND STOCK FARM

REGISTERED BERKSHIRES

Boars, Bred Sows and Gilts.

Herd Board ROYAL POINTER 2nd, 197092.

First Premium Senior Yearling P. P. I. E.

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Imported A. J. C. C. Jerseys and their Sons and Daughters at Sunny Bank Jersey Farm :: :: ::

SCAPPOOSE ,OREGON

Public Auction Sale

Thursday, April 6, 1916



An inspection of my entire herd will convince you that you should have some of them. I have bred for utility and beauty in equal proportions and have secured both. Neither in advance of the other.

THIS IS A SALE OF SURPLUS YOUNG STOCK, together with a few to make up a sufficient list. This is not a clearance sale in any respect. The animals I am keeping are no better than the ones I amselling. The animals I am selling are no better than the ones I am keeping.

THE BEST PROGENY OF THE BEST BLOOD OF THE BEST HERD I have ever owned is what I am offering you. Write for catalog to H. West, Scappoose, Prop., or C. D. Minton, 310 Stock Exchange, Portland. Phone Main 8065 if you live in the city.

Col. J. W. Hughes, Forest Grove, Auctioneer E. A. Rhoten, Salem, Assistant

BEAUTY AND UTILITY

BEAUTY AND UTILITY

BEAUTY AND UTILITY —— BEAUTY AND UTILITY —— BEAUTY AND UTILITY —— BEAUTY AND UTILITY

Must He Pasteurize His Milk?

To the Editor: I read in a recent issue of the Press about the new pasteurizing law, but do not think we understand it very well. Will you please tell me if we can sell milk to our neighbors if we do not pasteurize it, but sell to them with the understanding that they will sterilize the milk themselves?—M. H., Martinez.

[Answered by F. W. Andreason, Secretary State Dairy Bureau, San Francisco.]

[After October 1, 1916, no person can sell any milk, except at wholesale, no matter how small the quantity, unless his cows have been tested for tuberculosis, or unless the milk has been pasteurized by heating it to a temperature of 140 degrees F. and holding it at that temperature for a period of twenty-five minutes. The milk must then be quickly cooled to 50 degrees F., or lower, and maintained at that temperature until delivered. Pasteurized milk must be marked with the day of week of pasteurization.

Milk which is sold at wholesale to creameries, or distributing plants, is not affected by this law, but before it can be sold to the consumer it must be pasteurized and cooled as described above, unless it is the product of tuberculin tested cows.]

[As the enforcement of this new law will be under Mr. Andreason's supervision his answer to the above question will enlighten subscribers as to how the law, in its present form, will be interpreted by the dairy inspectors.—Eds.]

FEEDING GRAIN TO DIARY COWS.

To the Editor: The following inquiry has been received:

"I see a balanced ration for dairy cows in February 26th Rural Press which you gave 3:2:1 of dried beet pulp, barley and cocoanut meal. Now what I would like to know is, how this is fed to cows, wet or dry? I have been told by some people that beet pulp had to be soaked for 24 hours, or else it would make the cows sick. If that is the case, did you figure that proportion of beet pulp soaked or dry? I would like to try that ration on my cows, so kindly give me full particulars as to the best way to feed. You also state one pound of this ration to every five pounds of milk given by the cow—now to get the amount of feed to be given you would weigh night and morning milk and divide to get an average feed for night and morning, and would you also increase the feed as to the increase of milk flow?—W. L. B., Kenwood, California."

[Answered by Professor F. W. Woll, University Farm, Davis, Cal.]

[Beet pulp may be fed either wet or dry; some farmers prefer to feed it one way, some the other, which indicates pretty plainly that the feeding value of the pulp is not affected to any appreciable extent by the special method of feeding adopted. This applies both to dried plain and molasses beet pulp. Unless it is considered especially advisable to furnish some succulent feed in the ration, the beet pulp had better be fed in dried form, as this means less work, and allows the making up of grain mixtures that can be easily handled. The proportion of dried beet pulp, rolled barley and cocoanut meal given (3:2:1) was meant to refer to weights of dry feds. Amounts of the feeds are conveniently weighed out in these proportions so as to last, say about one week, and are placed in a pile and thoroughly mixed by shoveling. Of the mixture thus obtained, one pound may be fed, on the average, for every five pounds of milk produced by the cow, with alfalfa hay as roughage. The milk is weighed, say night and morning, and the sum divided by 5, gives the amount of grain (concentrates) that the cows may receive per day. I would increase the amount fed in the proportion as the milk flow increases, and would not hesitate to feed more grain to promising dairy heifers or high-producing cows, as these will give good returns for all the feed they eat and will do better on highly nutritious rations than on such composed largely of rough feeds.]

RATE OF LIVESTOCK IMPROVEMENT BY GRADING.

To the Editor: I understand that the first cross between a registered bull and a common cow produces a "grade" animal, and the cross between such a "grade" and another registered sire produces what is called a "full blooded" animal. Is this correct and would the offspring of a further cross with another purebred be known as a purebred? How many crosses would it take to make one as good as a purebred? And can such animals ever be registered? I would be very grateful if you would explain this matter in your columns. —M. W., Cool.

[The following table shows the rate of improvement in livestock as a result of the use of purebred sires on grade cows:

Generation	Sire	Dam	Offspring	Per cent Improvement
1	Pure	Scrub	½ blood	50.
2	Pure	½ blood	¾ blood	75.
3	Pure	¾ blood	⅞ blood	87 50
4	Pure	⅞ blood	15/16 blood	93 75
5	Pure	15/16 blood	31/32 blood	96 875

For utility purposes the fifth generation is theoretically as good as a purebred, but no registry association will register any animal unless both its sire and dam are purebred and registered. If their dams are not purebred and registered your offspring will never be more than grades.—Eds.]

DRAFT-HORSE BUSINESS ACTIVE.

Wayne Dinsmore writes that at a recent meeting of the Board of Directors of the Percheron Society of America, the registration fee on imported horses was increased to $100 per head, taking effect July 1st, 1916. The object sought is to discourage the importation of inferior horses, and it is believed this high fee will have the desired effect. Provision is further made to refund $85 of the $100 paid to importers on horses that are good enough to win at fairs recognized by the Per-



"Selecting and Developing the Jersey Herd"

Is a booklet by Prof. Hugh G. Van Pelt. It tells how you can build a well-developed, money-making Jersey herd by proper selection and judicious breeding. The future of your dairy herd depends upon how you select your foundation animals and how they and their offspring are developed. The Jersey cow combines beauty with dairy conformation. Healthy, vigorous and profit-producing, she lifts the mortgages and increases bank accounts. Send for book today.

American Jersey Cattle Club
'388 West 23rd St. New York City



"Good News for Farm Women"

Orange, N. J., March 1, 1916

Dear Mrs. Dairywoman:—

The bearer of good news is always welcome; and I have some very good news for farm women. We've a new separator at our house and it's a wonder.

One splendid feature of this new invention which must have been planned with the comfort of the dairy woman in mind is the knee-high supply can. This does away with the hard, high lift no woman should be asked to endure day after day. It's only a few inches to lift and a tilt of the pail, even for a small boy. This is *one* item of good news.

Cleanliness is the beginning, middle, and end of good dairy work. You know how quickly the separator shows the effect of any slight letting up in this direction. With dishes to wash three times a day, cooking utensils, calf pails, milk pails, etc., a big pile of separator disks is just about the "last straw", isn't it? But with our new Sharples there are only three pieces to clean, not one heavy, bulky, or fussy. This is the *second* piece of good news.

Formerly, a slight slowing of speed in turning the handle of the separator meant a loss of cream—and money. One's attention had to be strictly on turning the crank at an unvarying high speed, which was trying to both mind and strength. My *third* and best piece of good news is that

THE NEW SHARPLES SUCTION-FEED

Separator draws up into the bowl just the right amount of milk—always in proportion to the separating force. If you feel out of sorts, you may turn slowly and the bowl will drink up just enough milk for clean skimming and no more. If you feel spry and want to get through to sew, to trim a hat, or to visit a neighbor, turn as fast as you please and the bowl will take up proportionally more milk, yet the cream will be of the same thickness. Smooth, even cream, such as the Suction-feed gives you makes quality butter that brings top prices.

The separator has only one thing to do while you have many tasks. The separator has always been a tyrant which insisted on being turned at regulation speed, whether you were well or ill, worried or happy, rested or worn out. But this new Suction-feed Separator *meets your moods.* Its speed is your speed and yet, it *gets all the cream all the time.*

Why don't you drop a postal to the Sharples people for their new book? Then, you can show your husband that this new invention will be a money saver for him as well as a labor saver for you.

Yours truly,

A Dairywoman



The bowl is easy to wash. There are only three parts, and *no disks.*

What this farm woman says in her letter is absolutely true. There are many other pieces of good news in our new book, "Velvet" for Dairymen, which fully describes this wonderful separator. Send for your copy today. Address Dept. 31.

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cheron Society of America. It is believed this action will effectually bar inferior horses, without interfering with the importation of really valuable animals. Members of the Percheron Society have already been advised of this action, and breeders generally appear to be heartily in accord with the new ruling.

Records in the office of the Percheron Society show an active trade, particularly as to sales made by breeders. Prices are gradually growing stronger on good Percherons, but demand is slack for poorer sorts. More men are seeking stallions of exceptional merit, fit to head pure-bred studs, than at any time in the last three years, and more confidence is expressed by purchasers generally.

More than 112 million dollars' worth of horses, and over 23 million dollars' worth of mules have been exported from the United States in the 16 months ending January 1st, 1916. This is a greater total in cash received than we obtained for all horses and mules exported during the preceding 16 years, and our shipments show no signs of lessening. Good draft geldings are in from $275.00 to $325.00 on the Chicago market, despite the pessimistic comments of country horse buyers, who generally seek to give, for selfish reasons, the impression that drafters are not wanted. Farmers who cannot secure satisfactory prices at home should club together and ship their draft geldings direct to the large markets. Country horse buyers are doing all they can to hammer down prices on drafters in the country, for their own profit, and are having fair success. The war horse demand keeps business going, and if a big drafter is passed by often enough, the farmer who owns him may take the price offered. For this reason, direct shipments should receive consideration.

WANT TO TEST COWS FOR PAY.

To the Editor: Different people have attempted to start a cow testing association in this section, but couldn't make it. I have been thinking of getting an outfit and starting to do testing myself, as I think I can get 300 or 400 cows. Perhaps by starting this way, interest could be worked up and a testing association started. Please let me know the price of tester, sample bottles and acid. Also the charge per cow I would have to make to pay for my time and materials used. Most of the dairies are within a radius of ten miles so that I could be at home nights. I have about a week's time that I could spare for the work each month.—H. C. N., Arroyo Grande.

[Answered by S. S. Bonner, Secretary Gridley Cow Testing Association, Gridley.]

[The charge in our association is $1 per cow per year except in cases that incur traveling expenses to be reached, when it is $1.25 per cow per year. Our tester stops overnight at the different members, weighing the milk night and morning and taking a composite sample which he tests after the morning milking. Your subscriber evidently would not be able to do this and would probably find it would be difficult to hold members, as it takes considerable time for a milker to weigh and sample his milk. The testing would not be worth $1 per cow per year on a dairy of any size. Our charge covers a particular cow for a year's time, including her dry period. We do not allow a substitution when a cow is not in milk.

The price of the tester bottles and glassware could be had by writing any supply house. The cost of acid is very small. Thirty-pound milk scales graduated in 1-10 pounds cost, I believe, $3 each.

I believe your subscriber could, if he obtained 300 cows to test that did not require much traveling to reach, do the work in one week's time. He could weigh and sample at the large dairies and let the smaller dairies do their own weighing and testing. This would mean that he would have to leave a scales, sample bottles, and dipper with these people. The cost of material for this work would not be over $20 per year, including breakage.

With 300 cows at $1 per year, he would have an income of $280 with expenses out for 12 weeks' work, which I think would pay him very well for his time. The outfit should cost between $50 and $75 and I would advise a 24-bottle tester.

By writing the U. S. Dept. of Agriculture your subscriber may obtain daily report blanks and herd books free of charge.]

Imported and Homebred.

SHIRE STALLIONS and MARES



68 prizes won by our horses at the Panama-Pacific International Exposition, including the premium championship for breeder.

Visitors and Correspondence Invited.

BLACK HAWK STOCK RANCH

Burlingame, California

Jersey Bulls

EMPRESS LASS, Grand Champion Jersey Cow at Alaska-Yukon Exposition, and several times at California State Fair, gave 82.32 pounds fat during December, 1915, under dairy conditions.

Her Grandsons and other Bulls from good-producing cows for sale.

PRICED RIGHT.

N. H. LOCKE CO.

Lockford, Cal.

REGISTERED SWINE.

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.

Write or call and see us

SWINELAND FARM,
W. O. PEARSON, Prop.

Woodland California.

Model Herd of BERKSHIRES

Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 180837 and Breed's Model 165859, both winners of blue ribbons at State Fair.

Descriptive catalog upon request.

J. L. GISH, Laws, Inyo County, Calif.

REGISTERED BERKSHIRES

Bred sows. Boars ready for service. Weanlings. All choicest breeding. Weanlings sired by "Masterpiece" boar.

C. H. THOMPSON, Novato, Cal.

REMCO REDWOOD PIPE

All diameters from 2 inches to 12 feet. Much cheaper than any metal pipe. Will carry 30 per cent more water than metal or cement pipe of same diameter. Will outlast any metal pipe except cast iron. Cannot be injured by roots or displacement. Furnished for any pressure from 0 to 400 feet, and guaranteed for 100 per cent overload.

Write for further information, prices, etc.

REMCO Redwood Tanks

Cheaper than metal tanks. Last longer. Cannot rust. Not affected by chemicals in water. Thousands in use in the West.

We make them in all shapes and sizes, from 200 gallons to 500,000 gallons.

Redwood Manufacturers Co.

1608 HOBART BLDG., SAN FRANCISCO.

HILLCREST STOCK FARM

Thornton S. Glide, Prop.

Davis, Cal.

SHORTHORN CATTLE

Shropshire and Merino Sheep

FOR SALE, SINGLE OR CARLOAD LOTS



KING LANCASTER,

Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.

THEY HAVE GRAND CHAMPIONS BEHIND THEM.



Grand Champion Sow, P. P. I. E.

Medium Type POLAND-CHINAS

Choice breeding stock, both sexes, from Panama-Pacific International Exposition prize-winning strain. 12 firsts. Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows. $2145 cash awards. Write to

M. BASSETT

Box P.

Hanford, Cal.

SHORTHORN BULLS and HEIFERS

Will arrive from the East with a car of choice Shorthorn Bulls and Heifers about March tenth. Solid Red—Registered and Tuberculin tested.

These are splendid animals—lots of bone and individuality.

Also a few choice, registered Berkshires for sale.

H. L. MURPHY Perkins, Sacramento Co., Cal.

With the Live Stock Men.

DAIRYING.

Kings county dairymen received a total of $151,000 for the cream delivered during February.

The Danish Creamery in Fresno paid dairymen $42,182.40 for cream delivered during the past month.

A. W. Morris and Syl Lawson have selected the site on which they intend to construct a pasteurizing plant in Woodland.

The Dairymen's Co-operative and the Good Luck Creameries of Tulare county paid dairymen $58,500 for cream delivered during February.

Allen Bros. of Hopland recently sold their 1360-acre stock and dairy ranch east of Hopland to R. Whitehead, real estate man of San Francisco.

H. A. Johnston, formerly of San Francisco, has taken over the old Freeman ranch near Woodland, installing 27 head of purebred Ayrshires.

The Oakdale Creamery is now making a ton of butter a day, breaking all past records for butter production since the plant was started.

On account of promising butter prices in the East, several San Francisco dealers have been shipping their product to eastern points, nine cars leaving on March 21.

The annual meeting of the Stanislaus Cow Testing Association was held at Modesto on March 18, and C. A. Starkweather was re-elected head of the official board.

M. A. Sickles has leased the Knutzen dairy ranch south of Colusa and has had shipped there from Mackinac, Mich., sixteen head of thoroughbred Jersey cows and one bull, valued at $7,900.

The Gardena Agricultural High School is teaching its students the value of purebred stock by making it a part of their work to milk, feed, and keep records on one registered Jersey, four registered Holsteins, and three grades.

The Sherman Indian School ranch near Arlington has just installed a separator for their herd of about 25 high-grade milk cows. They will have a concrete block milk house entirely made by the boys, and will soon begin testing their cows.

A cow giving 90 pounds of milk per day about Mar. 10, at 10 years old, is White Aaggie of Windsor, owned by the Whittier State School. She has made a record of 25 pounds of butter in seven days and is expected to make 105 pounds in 30 days.

Miss A. M. Alexander and Miss L. Kellogg of Suisun recently returned from Ohio, where they attended a sale of Milking Shorthorns, purchasing three cows and five heifers for $7395 and a bull at a high price. The ladies were fortunate in securing the two best cows offered in the sale, as well as one of exceptional quality, and five heifers of the best breeding. The bull is the son of Welcome Lass, owned by L. D. May of Granville Center, Penn.; and the price paid to secure him is the highest ever paid for a Milking Shorthorn bull in this country.

Announcement is made in another column of a big Jersey sale to be held at Rancho Dos Rios, near Modesto. This is one of the oldest Jersey herds in the State and will be of more than ordinary interest. Further particulars will be given next week.

During the past month, creamerymen of Visalia received $29,900 from the Visalia Co-operative Creamery. Butterfat for February brought 34 and 35 cents. The latter price, and that of 34½ cents paid by the Porterville Co-operative Creamery was the highest paid in Tuare county.

The American Jersey Cattle Club reports that Amateur Amy 285973, the Jersey two-year-old senior, owned by J. R. Martin of Satsop, Wash., has completed a very creditable year's record. By producing 10,865.7 pounds of milk, containing 593.54 pounds of fat, Amateur Amy becomes the leading two-year-old in the State of Washington.

HORSES AND SWINE.

On March 8, Wm. Bernstein of Hanford shipped a fine eight-months-old boar to John Baker of Honolulu.

A swine growers' organization is under consideration by hog raisers in the Antelope Valley, Los Angeles county.

H. P. Slocum & Sons of Glenn county recently sold two carloads of Duroc-Jersey hogs to the Fontana Land Co. of Riverside.

Chas. Gatewood & Sons of Fresno report having recently received two Poland-China gilts and a boar from Geo. Ruby's herd of Lacey, Iowa.

The Comstock ranch of Lincoln are disposing of their fine stable of race horses, and are stocking the ranch with registered cattle and sheep.

The California Swine Breeders' Association has definitely decided to hold a consignment sale of all breeds of hogs in connection with the Butte Spring Exposition on May 24.

Scott S. Southworth of Napa reports the sale of 10 nine-months-old gilts to Duveneck & Pickersgill of Ukiah; a service boar to Wm. Smyth of Napa; and a gilt to J. C. Sweet, Napa.

A. M. Standish of Milpitas states that during March to date he has sold three registered Duroc-Jersey boars to J. A. Angle of Willows, Chas. Reed and Tony Brandon of Milpitas.

A meeting of the Yolo County Berkshire Association was scheduled for March 18, for the purpose of strengthening the new organization and adopting constitution and by-laws. Plans for the holding of a Berkshire sale at Davis the first week in April were to be discussed.

Prof. J. I. Thompson of the University Farm at Davis writes: "It has been definitely decided that a Berkshire sale will not be held at the University Farm on May 6, as previously suggested. It was impossible to find a sufficient number of suitable hogs for this consignment in this immediate neighborhood."

R. J. Merrill & Sons of Morgan Hill write: "We have recently sold Berkshires to the following parties through our ad in your paper: One bred sow to Dr. R. W. O'Bannon of Hollister, four bred sows to A. B. Thomas of Gilroy, and one boar and sow to Bert. Patrick of San Francisco, for export to South America."

CATTLE AND SHEEP.

Twenty-three cents per pound was paid for lambs' wool at San Francisco this week.

E. H. Tryon is planning to double the capacity of his wool scouring plant in Stockton, because of the great increase in the wool industry in California and the high prices



We Are Prepared

Within the wide boundaries of our country, embracing more than three million square miles, dwell a hundred million people.

They live in cities, towns, villages, hamlets and remote farms. They are separated by broad rivers, rugged mountains and arid deserts.

The concerted action of this far-flung population is dependent upon a common understanding.

Only by a quick, simple and unfailing means of intercommunication could our people be instantly united in any cause.

In its wonderful preparedness to inform its citizens of a national need, the United States stands alone and unequaled. It can command the entire Bell Telephone System, which completely covers our country with its network of wires.

This marvelous system is the result of keen foresight and persistent effort on the part of telephone specialists, who have endeavored from the first to provide a means of communication embracing our whole country, connecting every state and every community, to its last individual unit.

The Bell System is a distinctly American achievement, made by Americans for Americans, and its like is not to be found in all the world.

Through it, our entire population may be promptly organized for united action in any national movement whether it be for peace, prosperity philanthropy or armed protection

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AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Servi*

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

BIG TYPE POLAND CHINAS—One to a carload. Any age, either sex. 600 on hand. They have plenty of size, extra good hams and shoulders, strong arched backs, great length, depth and thickness of body, with good looks as well. Many are sired by IOWA WONDER, a 1000-pounder in show condition. I believe his pigs are the best in California. Visitors say they are the best they have ever seen. He sires the kind that grow faster and larger, have more, better and stronger pigs, and are more practicable and profitable—the kind that are highly satisfactory. Extra special prices on account of being overstocked. I have hogs galore Prices will surprise you Satisfaction guaranteed Write Geo. A. Smith, Corcoran, Cal.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—Everything registered and Cholera Immune. Have two young boars of service size and a few bred gilts to offer. These are extras in every way. Price very reasonable. Have recently received some bred sows from the East that are from Grand Champions and are bred to Grand Champions, from the best and most popular blood lines. Will have an attractive lot of pigs to offer from the coming spring farrows. These will be the equal of any raised in this country. Am booking orders now for same. Write for prices and catalogue. C. B. Cunningham, Mills, Sacramento County, Cal.

REGISTERED DUROC-JERSEYS—ALL AGES—We are booking orders for Spring pigs out of sows sired by full brothers of "I Am Perfection Wonder," sire of Grand Champion sow at Panama-Pacific, and from others equally well bred. Also offering about 30 exceptionally choice fall boars and gilts. This stock is in first-class condition, breeding guaranteed, and of the finest blood in existence. Prices reasonable For particulars, write, Haven Smith, Route 1, Box 97A, Woodland, Cal.

YOUNG POLAND CHINAS—Large type boar, "I. B. A. Wonder," won first in class and Reserve Champion P. P. I. E. 730 lbs. under two years in breeding condition. Sows bred and sired by "I. B. A Wonder." Also weanling pigs, either sex. Trios unrelated. None bigger. None better. $15 and up. Will please you or money refunded. W. A. Young, Lodi, Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Championships. Stock of all ages for sale. Grapevine Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

REGISTERED DUROCS—Twelve large, smooth boars, about fifteen choice gilts, all farrowed last September and October. Sired by Waukena Wonder 176555. $20.00 up. Write now Felton & Hoyt Hanford Cal

FOR SALE Three extra nice, big, smooth Poland China Brood Sows from prize-winners. Bred to registered boar for May farrow. $25 each f. o. b., crated and transferred N. M. Lester, Gridley, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

BIG TYPE POLAND CHINAS—My hogs are sired by California Wonder and Big Chief, imported direct from Iowa. There is no better blood All hogs eligible to registration. C. A. Cooley, Durham, Cal.

DISPERSION SALE—Registered Poland Chinas. Grand big sows. Herd boars and pigs of all ages. Write quick for low prices and descriptions. Roy J. Turner, Trowbridge, Cal.

BLATCHFORD'S PIG MEAL weans easily and safely; no trouble; no milk. Write for free folder, "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feed for big hogs Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen A. Day, Box 1140, Sacramento.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

RANCHO RUBIUS—Durocs all sold except one service boar and a few October pigs. Spring litters will be "best ever." Elmer Lamb, Ceres, Cal.

ROSELAWN STOCK FARM—Registered Poland Chinas and Shorthorn cattle. Young stock, both sexes, for sale. T. B. Gibson Estate, Woodland, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Price and description on application. R. J. Merrill & Son, Morgan Hill

LAKESIDE STOCK FARM POLAND CHINAS are money makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

PLAINFIELD STOCK FARM—Registered Berkshires and Durocs. Young stock for sale, both sexes. H. M. Bullard, Woodland, Cal.

REGISTERED BERKSHIRE WEANLINGS—The quick-growing kind. Service boars, gilts and sows. J. M. Homberger, Modesto, Cal.

PIGS OUT OF SUPERBA—Panama-Pacific Grand Champion Poland China. Booking orders now. Chas. R. Hanna, Riverside, Cal.

REGISTERED IMPROVED CHESTER WHITE BOARS for sale from prize-winning stock. S. E. Cheney, R. 2, Lindsay, Cal.

DUROC OF QUALITY—Predominating bloods of Defender, Buddy Ky, Crimson Wonder. C. T. Thompson, Bishop, Cal.

REGISTERED DUROCS of guaranteed breeding. Bred gilts, service boars and fall pigs. H. E. Boudier & Son, Napa.

POLAND CHINAS—Young stock; either sex Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

FINE YOUNG DUROC JERSEY BOAR—Registered. Also bred gilts. George N. Martin, Route 2, Box 120A, Turlock, Cal.

REGISTERED POLAND CHINAS—Stock from champion herd at Exposition. Dimmick Bros., Lemoore, Cal.

that are being obtained on account of the war.

More than 30 carloads of Nevada cattle have come over the Oakland & Antioch Railway to the Montezuma hills in Solano county the past few days, where they will be pastured. Probably some of this stock will be shipped back this summer, but it is believed that there will be an important addition to the northern California supply.

MISCELLANEOUS.

The annual picnic at the University Farm will be held at Davis on April 22; and plans are being made to make this celebration exceed those of former years.

At a recent gathering of San Joaquin Valley cattle and swine raisers held in Fresno, a committee was named to devise ways and means of launching the project for a union stockyards in the San Joaquin Valley.

Eight hundred goats were recently purchased in Mexico for the Widemann Goat ranch at Kings City. This company now has the largest flock of goats in the world. The milk will be handled at Kings City and condensed in such a form that it is expected will find a ready sale.

The quarantine order issued last September by State Veterinarian Keane under the authority of Gov. Johnson has been lifted on cattle from all states of the United States, with the exception of Illinois, beginning March 15. No cattle can enter California from the Republic of Mexico unless shipment is supervised by the State Veterinarian, nor from the State of Illinois unless shipper secures a permit from the State Veterinarian of California.

On March 19, Yuba City farmers held one of the largest rabbit drives in the history of the county.

SWINE.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

REGISTERED DUROC-JERSEYS — Service boars and fall pigs. Also two mature sows—bred. S. S. Southworth, Napa.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

REGISTERED HAMPSHIRES—Winners at P P I E Stock of all ages. W. T. Gatton, Box 231, Gardena, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED BERKSHIRES—Big-boned. Cholera immune. Riccomi Bros., Mountain View.

REGISTERED BERKSHIRES — Weanling pigs, $10 each. O. A. Casey, R. 7, San Jose.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES — Prize-winning stock Gunnerside Stock Farm, Perkins Cal

REGISTERED BERKSHIRES—Young boars for sale. Alexander and Kellogg, Suisun, Cal.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

BIG TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal

PURE-BRED BERKSHIRES—Stock of all ages. Brae Bourne Ranch, Route 3, Box 172, Santa Rosa, Cal.

REGISTERED DUROC JERSEY SWINE—Las Paderas Ranch, El Cajon, Cal. M S. Allen, Manager.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRE PIGS—Write or call Greenwood Ranch, Brentwood, Cal.

Oak Grove Berkshires

CHOLERA IMMUNE

Our herd is Cholera Immune, the only Immune Berkshire herd in the State

Fine herd boars in use and they are second to none on the coast Our sows are of equal merit

We know that we can supply what you want.

Write Us or Call.

OAK GROVE DAIRY FARM

H. G. ARMSTRONG, Prop.

Woodland, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED POLAND CHINAS—Large type C. M Stetson, Route "A," Ceres, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

POLAND-CHINAS—Prize-winners. Money-makers. W Bernstein, Hanford, Cal.

FAIR OAKS RANCH, WILLITS, CAL.—Registered Duroc and Berkshire Swine.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

CHAS. GOODMAN — Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED BERKSHIRES—All ages. Choicely bred U. Hartman, Ripon, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

READAKS RANCH herd of registered Poland Chinas W. J Hanna, Gilroy.

REGISTERED DUROCS—All ages Either sex. W. A. Pack, Hollister, Cal.

CURTIN DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY. Lakeport Cal

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore Cal

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale Will build up the production and value of your herd. Write or call and see them. F H Stenzel San Lorenzo, Cal.

FOR SALE—About 90 head grade Holstein, Durham & Jersey heifers from six months to three years old, all first-class. Prices very reasonable. J. S. Smith, Box 515, San Jose, Cal.

WANTED—About 25 good dairy cows to be paid for in 12 equal monthly installments. Payment secured by mortgage on stock. Party reliable. Box 205, Pacific Rural Press.

VANDERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly records. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Cooney Farm, Dos Palos, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

HOLSTEIN BULLS—Purebred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

FRANK MEACHAM, Petaluma, California — Breeder Red Polled Cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell Visalia.

BREEDERS OF REGISTERED SHORTHORNS — Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631 637 Brannan St., San Francisco.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TWO REGISTERED HOLSTEIN BULLS out of A. R. O. cows. Sired by King Mead. Ready for service. J. H. Harlan Co., Woodland, Cal.

TWO REGISTERED HOLSTEIN BULLS old enough for service. Very light in color. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

REGISTERED HOLSTEIN BULLS — Serviceable age From finest strains. Panama-Pacific Dairy. Sutter Creek Cal.

FOR SALE—Pure-bred Guernsey Bull, 2 years old. Advanced registry breeding. E. L. Skidmore, Route C, Tulare, Cal.

ELEVEN REGISTERED HOLSTEIN COWS—Priced to sell as a bunch at very low figure. K. W. Abbott, Milpitas, Cal.

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[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for $1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

DO HOGS BECOME GOITERED?

To the Editor: Can a range hog get goitered? I have one that has an enlargement like a goitre on a man's neck.—C. W. F., Dos Rios.

[This can happen.]

FOXTAIL IN COW'S EYE.

To the Editor: One of my cows got a foxtail in her eye about four weeks ago. The ball broke and has run out, but I cannot get it to heal. The upper lid is swollen and very sore. Please advise me what to do. —G. E. H., Fresno

[Place a few drops of a 25 per cent solution argyrol in the eye several times a day.]

COWPOX

To the Editor: I have a cow with sore teats At first the teats looked red under the skin as if they had been bruised. Then there came large blisters filled with a a watery fluid which soon broke and great patches of the skin would slip off. Is this cowpox, and what shall I do for it?—L. A. R., Porterville.

[This is cowpox—a benign disease of cattle. Paint blisters with tincture of iodine once a day.]

MAY BE ABORTION.

To the Editor: I have a cow that took the bull about the middle of December and she showed no signs again till the middle of February, when she took the bull again. I saw no signs of abortion. If this is contagious abortion will the bull become diseased, and is there anything that could be used to keep the bull from carrying it to the other cows?—Subscriber, Corning.

[This may be contagious abortion. If so the bull will become affected and should have his sheath washed out daily with a 1-1000 solution potassium permanganate.]

RABBITS HAVE EAR SCAB MITES.

To the Editor: Can you tell me what is the cause of rabbits having sore ears? It starts first close to the head.—G. M., Ripon.

[This is the ear scab mite of rabbits. It can be cured by scrubbing thoroughly every day with a standard solution of lime-sulphur dip, used for dipping sheep.]

CALF TROUBLES.

To the Editor: At various times during the winter our fall calves suckling range cows in the feed yard have become affected with scours and sometimes it runs into the bloody flux, or at least they pass blood. How can this be prevented or treated? Also had three calves weaned about nine or ten months old that took suddenly sick and the symptoms resembled those of rabies. They were first noticed down or else acting stiff in limbs which would later cause fits like those of a poisoned animal and frothing at the mouth. One calf died after the third or fourth day, but the other two recovered and are all right now. Can you tell me what was the matter and how to cure them again?—E. E. C., Canby.

[The first mentioned calves had white scours. Use scour serum in 10 c.c. doses with hypodermic syringe as soon after birth as possible and you will prevent the trouble. The other calves had acute indigestion probably caused by bad hay. In cases of this kind give one-half to one pound doses of epsom salts, according to size, at daily intervals till there is some relief.]

PIGS HAVE NECROBACCILLOSIS.

To the Editor: A year ago last December we had a light form of infectious sore mouth break out among our little pigs. They were a little scabby over the face, but we lost but one pig. We did nothing for them as we did not know it was infectious. In July of last year we had about 75 pigs. We did not notice anything the matter with the first ones, but after a little it developed on them and then the little pigs seemed to be born with it. We managed to cure up about 40 of them with Lugol's solution and salicylic acid. We disinfected the pens then and again this spring just before the sows farrowed. The first pigs that were farrowed had very sore feet, but they were not affected in the mouth. In the later litters we noticed the affection a few days after birth. Some of these pigs were farrowed out in the field away from the house and they were affected just the same or even a little worse.

We want to know how to stamp this germ out of the herd so it will not reappear again. The way it has acted in our herd it is something that needs to be stopped before it appears in the little pigs. Any information along this line will be greatly appreciated.—J. C. H., Madera.

[This is necrobaccillosis and is producing both the sore mouths and feet. Disinfect your premises with a five per cent solution liquor cresolis compositus. This must be thorough and one application will probably not be enough. Touch up the sore mouths with a cotton swab dipped in the following: Camphor, 5 drams; carbolic acid 2 drams; mineral glycerine, 2 drams.]

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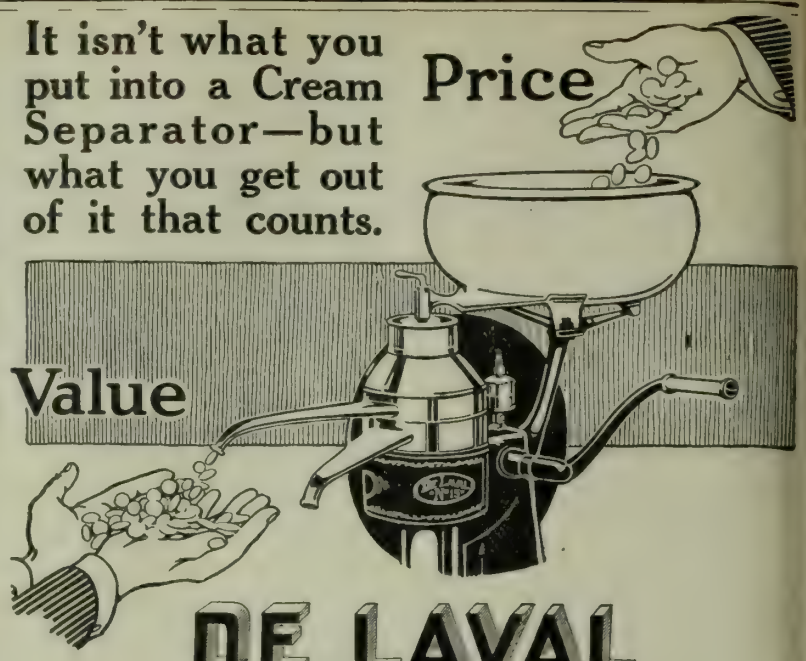
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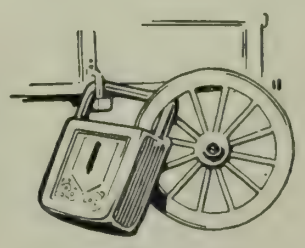
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ALIFORNIA SHOULD GET MORE FROM SOIL.

(Contiued from page 389.)

rue conception of the scant supply f organic matter in our valley soils nd that the quick exhaustion of it y early cropping was the reason for uch decrease of cereal yield as he ad observed. His prescription for ure was horticulture — meaning hereby "gardening" and gardener's rts in organic manuring. He may ossibly have had the idea too that he fruit trees would make more eaf mold than they would consume nd thus act like forest trees—but is words are not clearly open to hat imputation of error.

Is it not clear then that, perhaps rom the very beginning of California griculture as established by Ameri ans, the lack of organic matter in nost of our soils has been recog ized; that practically no attention as been paid, until recently, to estoration and increase of this basis f soil activity and no proper esti nate is yet placed upon the funda nental method of growing more tock or more plants to use as ma ure or by buying commercial fer ilizers which convey animal wastes f a kind to meet soil wants? And ll these things are elementary fea ures of better farming.

Tilalge.—Soil-working is another essential requirement of greater uccess in moving the garden to the ield—which was Mr. Flint's con eption of the need of California early sixty years ago. We are earer to it now than ever before, for wo reasons:

First: The offices of tillage, as ex ounded theoretically and demon strated experimentally, are better understood than ever before, and nearly every reader of the intelligent California farm journal or farm book must now have a fair working understanding of the purposes and methods of tillage.

Second: The implements of tillage of all kinds are now much better than ever before, both in design and materials, and the motive power for them is so much increased and cheapened by tractors that the application of gardening standards of depth and thoroughness to field tillage is no longer a dream, as it was in Mr. Flint's time. We can now profitably realize his conception and it is another of the fundamental requirements of better farming.

Adequate Moisture.—It is also very widely understood by this generation that everything in farming goes by water, and without enough moisture every other good thing fails to come through. The mission fathers knew this, but did not draw correct conclusions from it. The American pioneers knew it, introduced surface tillage and placed too much dependence upon it. At the present day, the relations of deep tillage and sub-soil packing, rainfall and irrigation are made very clear. As the implements for tillage have advanced in style and efficiency, the agencies for irrigation have been multiplied and become readily available. Rainfall, surface flow and subterranean waters are all made cap-

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RIPON, CALIF.

tive. Effort and investment for the use of each or of all of them, in individual operations is also a fundamental requirement of better farming.

Fertilization.—This essential of better farming has had a checkered career in California, from the day when the blind pioneer claimed that the California climate rendered manure useless, through the years when all the offal from our slaughtering establishments was being shipped to Hawaii to the later years when we have been importing considerable amounts of fertilizers from distant sources. Now trainloads of corral and stable cleanings go out from San Francisco, Los Angeles and other large towns to the fields, orchards and vineyards, and the handling of this material is a systematic business. Now also the fertilizer by-product of our abattoirs is skillfully handled and rendered available, as our advertising pages continually show. And the same is true of mineral phosphates, nitrates, sulphates, hydrates and the like—everything which will help a plant to grow can now be purchased to advantage in our markets. But this must be clearly understood: the use of fertilizers is not a cure or substitute for poor farming. Many a man has bought a little jag of fertilizer, hoping thereby to check the decreasing yield from his land. Sometimes the season is extra-favorable and he gets surprising results, but generally he "fails to see that fertilizer did his land any good," after such an experiment. Honest fertilizer is the sheet-anchor of the best farming, not the safety-clutch of poor farming. The nearest ideal your tillage, moisture supply, plant vigor, etc., are the more you can profitably spend for honest fertilizers. This is a fact which is not yet widely recognized in California, but it is coming to the light in which all men may see it.

Rotation.—During the last decade most commendable progress has been made in understanding the mutually promotive relations which different classes of crop plants may sustain toward each other and the relation of pasturage to all of them. These things are as old as agriculture, but their California bearings are only dawning. After you have done all that you can for soil condition, tillage, moisture supply and fertilization, the rotation of crops arrives to applaud your efforts, to help you gather and hang about your neck the garlands which preceding noble acts have won for you. And out of the capability of California for diversity in plant gorwth there will in time arise a breadth in rotation unsurpassed elsewhere in the world, probably. The present limitations upon it are not agricultural but economic, and they will lighten as western population increases and trade-routes to and from our ports extend and multiply. This is the pot of gold buried in our soil, from above which the rainbow of better farming for California arises.

In Conclusion.—In this hasty sketch of a subject of surpassing breadth and baffling diversity, we have tried to emphasize a few suggestions for the reader's own thought and inquiry, viz.:

First: it is essential to believe that California soils are still intrinsically good and capable—therefore they invite effort and investment for improvement.

Second: the exhortation to better farming in California is emphasized because it is only through better farming that investment in better tillage implements, better power machines for labor-saving in farming operations, better plants and better fertilization, can attain the fullest results and become most reasonable. Each of these avenues of improvement is beautiful and admirable in itself, but affords no through line to greater prosperity unless all the connecting avenues are also open.

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Poultry for Profit---Producing and Marketing.

RAISING BROILERS FOR THE MARKET.

[Written for Pacific Rural Press by Mrs. Susan Swaysgood, Pomona.]

During the last few weeks we have told you what can be done with a flock of hens on the small farm or orchard that is near enough to market for egg-production.

Possibly a good number of our readers are a little too far out to ship eggs during hot weather and do not know just how to make a profit on their flock of hens.

To all who are so located I would say, get an incubator about the size that will use up your eggs while they are fresh, or better, get two incubators of smaller capacity and set one every ten or twelve days. You can make a couple of brooders yourself, and if you keep the hens busy laying eggs you will find that you can make more money by turning your eggs into broilers and selling them from one to two pounds each than in shipping eggs to market.

At this writing, March 15, broilers are bringing forty-five cents a pound in San Francisco. Now there is more money in broilers at twenty cents a pound than in eggs at twenty cents a dozen. You can ship broilers quite a distance by putting water cans and a little feed in each coop. They will lose a little in weight during the journey so that you must not expect to get paid for every pound you put into the coops, but the express is not high and they will travel a long way in one day.

Feed Milk.—If you have milk feed them all they will drink and after they have made a month's growth give more fattening food than anything else. This with milk will make them soft and tender and the breasts will be plump.

If the chicks are fed milk from the start they will grow good bone and less food will be required to fatten them later, provided they are of one of the larger breeds.

There is always such a quantity of small Leghorn broilers on the market during the summer months that it would hardly pay to hatch that kind with a view of turning them into broilers. But any of the heavy breeds will make good broilers and there is always a market and a good market for broilers of the right kind.

Incubators are so cheap now that they can be made to pay for themselves out of one or two good hatches, then they are there to use any time you need them.

As the law now stands in regard to storage eggs, dealers can't store yet for some time, and prices will not be much better till storing begins for the season and brown eggs will have to be sold at a disadvantage unless they are incubated.

Soft Roasters.—Another good way, and perhaps for some it might prove the best way, is to turn them into soft roasters. A broiler is a bird weighing from one to two pounds; a fryer weighs from two to three pounds, and a soft roaster from five to six pounds.

But the one thing to bear in mind is this: the growth must be rapid to make the very best kind of either broiler, fryer or roaster. These are the quality birds that bring the price. You can't let the chicks string along four or five months and not grow enough so you can see it. They must make quick growth and be sold while the breast bone is soft.

That, together with a nice plump lot of meat on it, makes the soft roaster, and by proper feed, warmth and right management, chicks of the large breeds can be sold as soft roasters at four to five months old.

Milk-fed soft roasters should bring at least 20 cents a pound and will often bring more, but I prefer to figure low enough. If hatched in the spring they can be sold before the fall work begins and long enough before the market is supplied with turkeys to run the price down.

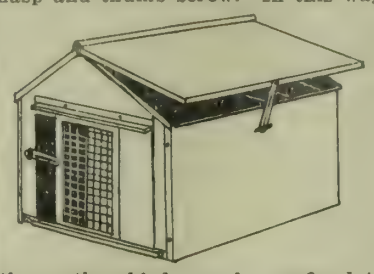
In these days of quick transit the man who is back a few miles need not let that trouble him or prevent him from making money on anything he raises in the way of poultry. All he needs to do is to produce the quality; he will find a good sale for it.

CHICK AND GAME COOP.

[By Geo. H. Croley.]

The increasing interest in the domestic breeding of game birds has created a demand for convenient labor-saving appliances with which to handle them. These birds are often bred in isolated spots, canyons, or wildwood where they are exposed to natural enemies while they are young and helpless.

The accompanying illustration represents a galvanized iron coop measuring in width, 18 inches; in length, 24 inches; and in height, 17 inches. It is practical, convenient, and is sold at a low price by poultry supply dealers generally. During cold or mild weather it is well ventilated by the openings at the back end while the top and front are closed. It has two metal doors in front. One is of wire and the other is a solid sheet of metal. The wire door can be completely closed or locked partially open by means of the long hasp and thumb screw. In this way



the mother bird may be confined to the house while the young can run at large or into a wire enclosure placed in front of the coop. The hasp and thumb screw attached to the side holds one side of the roof partially open in hot weather or tightly locks the roof when closed.

These metal coops are extensively used in the eastern states for rearing baby chicks and game birds, but in California there seems to be a mistaken notion in regard to their value. It has been considered that they are not suited to warm climates. They are as cool as a similar brood coop made of any other material when properly handled; no coop for young fowls should be exposed to the direct sunshine in hot weather, but must be protected by shade; and proper floor covering and nesting material should be provided in a brood coop of any kind.

Some of the advantages to be gained by the use of metal are these: The coop is rat, cat, and skunk proof; mites cannot live in a metal house; it is rain-proof and does not absorb moisture; it is easily cleaned and perfectly sanitary.



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The experience of others verifies this statement; for while game farming has not been carried on as extensively in this country as in Europe, we have many well conducted and profitable farms in all parts of the United States. The owners of these game farms not only receive good prices for eggs and for birds but some of them also rent the shooting privileges on their land to those who are very willing to pay for the sport

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FAT HENS DROP DEAD.

To the Editor: During the past two weeks we have lost about 15 hens out of a flock of 400 two-year-old White Leghorns that are laying about 50 per cent. Excepting two or three they seemed perfectly healthy; combs red, appetite good—they just drop dead; some of them while eating. They are fed the same as our year-old hens that are not thus affected. Post-mortem shows no unnatural conditions except considerable blood around the heart. How can we prevent white diarrhoea among little chicks?—Subscriber, Elverta.

[Answered by Geo. H. Croley.]

[Apoplexy or fatty degeneration of the heart killed the older hens. Reduce the barley and increase meat scrap. If near a source of infection it is almost impossible to prevent white diarrhoea. Feeding sour milk sometimes seems to help; thoroughly disinfect incubators and brooders; some hens are the germ carriers and infect the egg before laying it—remove these hens from the flock if they can be discovered.]

POULTRY NEWS NOTES.

[By Geo. H. Croley.]

The State Poultry Association will hold its second annual show at Modesto, December 6 to 9 inclusive.

The poultry show in connection with the Butte County Spring Exposition will be judged by C. G. Hinds.

Farm women are being urged in the Southern States to form egg-selling associations, the object being to secure better prices.

Tulare is shipping 3000 cases of eggs a month. During February, the daily income of the poultrymen, at that point, was about $600.

The poultry business at Livermore is steadily increasing. During the first week in March, the Verde Poultry Farm marketed 480 dozen eggs.

Southern San Joaquin county farmers have organized a big rabbit drive to take place on March 26, in order to save their growing crops from further damage.

A. C. Lillard reports that G. B. Glass of Manteca is utilizing with profit the parcel post for shipment of eggs to a number of customers in the Bay section to whom he regularly mails cartons of fresh eggs.

The Tulare Rochdale Company recently shipped a car containing over 400 cases of eggs or more than 12,000 dozen. This is said to be the first full carload of eggs to leave that point.

The breeders of Standard varieties of fowls, located in and about Oxnard, are preparing to raise more chicks than in former years. Barred Plymouth Rocks and White Leghorns seem to be the most extensively bred varieties, but Black Minorcas and Black and White Orpingtons are also very popular and gaining in numbers.

Poultry Breeders Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

2000 WHITE LEGHORN PULLETS, 3 months old. Price according to quality. All kinds of breeding and laying hens, roosters and pullets. Petaluma incubators, new and used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minorcas, Buff, White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards, 2550 San Pablo Ave., Oakland. Cal. Closed Sundays.

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Calif.

WYANDOTTES—Beautiful, useful and profitable. Best for showing; best for egg-laying; best for table. Largest Wyandotte Farm in the Southwest and the only complete family of Wyandottes known. Eleven varieties and each from the finest strain bred in the United States. Hatching eggs and baby chicks reasonable. Write us for full particulars. VILLA WYANDOTTE FARM, Villa Road, Lamanda Park, Cal.

LIVABLE BABY CHICKS—We are supplied by reliable Breeders and experienced hatchers. Better chicks cannot be had from any source. All varieties, any number. High quality birds, bargain prices, breeders, laying hens, pullets. Free exhibit. Everything in Poultry, Pigeons, Rabbits, Dogs, Cats, Canaries, Pets. Give us a call or write. Fanciers' Exchange, 642 S. Main St., Los Angeles, Cal.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. Lay most when prices highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for heavy laying. Eggs, chicks, stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

MODEL POULTRY FARM White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired Heavy Winter Layers. W. C. Smith, Prop., Corning, Cal.

OUR APRIL AND MAY HATCHED White Leghorn chicks will make good layers in the Fall when eggs are high. Our breeders averaged 171.2 eggs in 1915, flock of 635. Large percentage winter eggs. Chicks, $10.00 per hundred. Order at once. Brooke Farm, Rancho Del Paso, Sacramento, Cal. Office 807 J St.

WELL HATCHED AND STRONG day-old chicks from healthy vrigorous breeders. White and Brown Leghorns per 100, February $11, March $10, April $9. Reduction in quantities. Let us send you our announcement. San Jose Hatchery, 373 Meridian Road, San Jose, Cal. Chicks well hatched are half-raised.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396, Los Gatos, Cal.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

BABY CHICKS—All sturdy youngsters from good stock and hatched right. Rhode Island Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

BUFF ORPINGTONS, BUFF LEGHORNS, BOURBON RED TURKEYS, BUFF DUCKS—Winners at Riverside Pasadena, Los Angeles and San Francisco. Breeding stock. Hatching eggs. Baby stock. Free illustrated booklet. The Ferris Ranch, R. 2, 144D Pomona, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., INC., Poultry Supplies, San Francisco.

EGGS FOR HATCHING—Sicilian Buttercups—Best stock from Pennsylvania and Vermont. Eggs, $2.50 per 15. A few good cocks. White Wyandottes; Jenkin's strain. Eggs, $1.50 per 15. J. Parnell, Box 64, Route 1, Sebastopol, Cal.

HATCHING EGGS from thoroughbred Barred Rocks, White Rocks, Reds, $1.50 per 15, prepaid; Buff Minorcas, Blue Andalusians, $2; Indian Runners, $1.45. Six Buff cocks, $2.50 up. Cedarhurst Ranches, Route 2, Box 1462, Sacramento.

INCUBATOR CHICKS—White Plymouth Rock, White and Brown Leghorn. Highest class of stock bred to standard and to lay. If you are interested in the best send for Catalogue. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

WHITE LEGHORNS—RHODE ISLAND REDS—Trapnested and Hoganized. Breeding from not less than 200 egg birds. Booking orders now. Hatching Jan. 25th-June. Monte Vista Poultry Farm, Z. W. Wright & Son, Ontario, Cal.

ORDER NOW if you want strong, healthy S. C. White Leghorn chicks from Jackman's pure-bred egg producers. $80 per thousand. Hatching eggs, $4 per hundred. Sunnyside Poultry Farm, Route 2, 1610 Vine St., Sacramento, Cal.

BABY CHICKS — White Leghorn, Black Minorcas. We guarantee safe arrival and full count. Strong, vigorous chicks. 1916 catalogue contains instructions on care of baby chicks. Free. Lasher's Hatchery, Petaluma, Cal.

BABY CHICKS—White Leghorns, $9.50 per 100; $45 per 500; $90 per 1000. Express prepaid and full count of live chicks guaranteed at destination Oswald Miller Robertson, Roseneath Egg Ranch, Arlington, Cal.

SINGLE-COMB RHODE ISLAND REDS—Hatching eggs, baby chicks and breeding stock. Wonderful egg-laying strain. One of the best show records in the state. J. M. Hacock, Dept. R, Box 393, Fresno, Cal.

CHICKS—Day-old chicks from my healthy, vigorous, heavy-laying, free range stock of Hoganized S. C. White Leghorns. Price, $7 per hundred. H. P. Hansen, Route 4, Box 177, Petaluma, Cal.

BUFF ORPINGTONS—Eggs from high-class matings that have correct color, shape and large size. Choice exhibition and utility stock for sale. No chicks. E. J. TALBOTT, San Mateo.

THE SANTA CLARA VALLEY HATCHERY has the goods to offer in 9 varieties of baby chicks and will book orders for Ducklings—White Pekins and Indian Runners Route 6, San Jose, Cal.

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WHITE LEGHORN BABIES and Hatching Eggs from Hoganized heavy-laying strain. Correspondence solicited The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

FOR SALE—Barred Rock eggs from fine large prize-strain. Extra fine layers $1.50 per 15; $7.50 per 100. Miss F. W. Buckley, R. F. D., Box 71, West Berkeley.

ENGLISH WHITE LEGHORNS—Peerless Anconas. Hoganized. All 200-egg strain. Eggs, $1.25 per 15; $6.00 per hundred. Roseville Poultry Ranch, Roseville, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorcas, White Leghorn stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

BABY CHICKS—Strong and healthy from high-bred, free-range White Leghorn stock. Prices on application. Also orders taken for day-old chicks from other breeds. Western Hatchery, W. S. Waldorf, Petaluma, Cal.

HATCHING EGGS from Hoganized S. C. White Leghorns. Bred to lay. High fertility this year. Send for circular. R. H. Dickinson, Los Gatos, Cal.

WHITE ORPINGTONS AND BUTTERCUPS—Hoganized and Tested—220 egg strain breeders. Chicks and eggs for sale. M. S. Woodbams, San Mateo, Cal.

S. C. W. LEGHORN EGGS for hatching from selected, strong and vigorous hens. All 200 egg type. 15, $1.50; 100, $6. Jay Maxwell, Madera, Cal.

BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trapnested stock. Fairmead Poultry Farm, Fairmead, Cal.

HERE IT IS—White Rock baby chicks. $15 per 100. Hatching eggs, $1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ceres, Cal.

BABY CHICKS from Hoganized Single-Camb White Leghorns, 4th and 5th awards at P. P. I. E. for 280 egg type Tupman Poultry Farm, Ceres.

ORPINGTONS, BUFF and WHITE—Black Minorca and Carneaux Pigeons. Cockerels ready for service. Susan Swaysgood, Route 2, Pomona, Cal.

WHITE WYANDOTTES—Blue ribbon winners. Cockerels. Pens. Eggs. Runner Ducks, $1 each. R. W. Stawetski, Route 2, San Jose.

BLACK MINORCA, BUFF ORPINGTON, R. I. Reds; eggs for hatching. Also cockerels for sale. Mrs. R. A. Holdridge, Box 282, Dixon, Cal.

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DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

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TRAPNESTED LEGHORNS — White and Buff Stock. Eggs, chickens. Arthur R. Schroeder, Box 179R, Mountain View, Cal.

BUFF ORPINGTONS—Eggs, $3.00, $2.00. Runner Ducks, $1.50. Baby Stock. Glendale, Fleming Ave., San Jose, Cal.

BABY CHICKS—White Leghorns exclusively. Utility stock. 13 years' experience. F. W. Wilson, Route 7, Santa Rosa.

BABY CHIX—R. I. Reds; Black Minorcas; White Leghorns. Strong thrifty stock. Adelia E. Denton, Los Gatos, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

ROSE-COMB RHODE ISLAND REDS—Chicks, Eggs Vigorous layers. B. L. Bissell, Route C, Modesto, Cal.

ANCONA EGGS from prize-winners. $3 per 15. Utility, $2 per 15. E. T. W. Barnes, Sisson, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

BLACK MINORCA COCKERELS — Eggs, Trios. Reasonable. Chester Fo-gate, Campbell, Cal.

BUFF WYANDOTTE EGGS $1.50 and $2 per setting. C. B. Christiansen, Dinuba, Cal.

GUINEA EGGS FOR HATCHING—15 for $1, postpaid. Hazel Holmes, San Miguel, Cal.

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BUFF DUCKS—Weigh like a Pekin and lay like a Runner. Winners at Panama-Pacific and Los Angeles. "Victoria" has laid 142 large, white-shelled eggs in 148 consecutive days. Eggs. Baby Ducks. The Ferris Ranch, R. 2, 144D, Pomona, Cal

TOULOUSE GEEESE—2 years old, now laying. Either sex, $3.00. Eggs from my flock, including best show birds, 30c each. Order from this ad and we will ship the day you say. M. F. Giddings, 245 Tokay St. Lodi, Cal.

BOURBON RED TURKEYS—Four firsts on males at Panama-Pacific and Los Angeles 1916. The best Bourbons west of the Rockies. Eggs. Poults. The Ferris Ranch R 2, 144D, Pomona, Cal.

MAMMOTH BRONZE TURKEYS THE BEST IN THE WEST—Extra special prices. Further information cheerfully given. Write now to secure best birds. Geo. A. Smith, Corcoran, Cal.

EGGS from my prize-winning Mammoth Bronze Turkey Hens, $4 and $5 per dozen. Pearl Guinea Eggs, $1.25 for 15. N. E. Mulick, Willows, Cal.

HART'S BRONZE TURKEYS — Vigorous young stock. Eggs by the setting or incubator lots. Circulars free. Albert M. Hart, Clements, Cal.

FOR SALE—One pen of China pheasants, one male and five females. L. R. McCoy, R. I. Box 205, Stockton, Cal.

INDIAN RUNNER DRAKES, $2.50 each, and a few choice hens. Settings, $1.50. Sturgeon Bros., Lemoore, Cal.

FOR SALE—Thoroughbred Rouen Duck Eggs, $1.25 per dozen. $10 per 100. W. J. Miller, Farmington, Cal.

MAMMOTH BRONZE TURKEY EGGS from selected stock. Also young Toms. M. M. Reimon Planada, Cal.

PEKIN DUCK EGGS for hatching, $1.00 per dozen. L. D. Collins, R. F. D., 54G, Denair, Cal.

PHEASANTS—Golden and Ringneck. Eggs from April on. T. D. Morris, Agua Caliente, Cal.

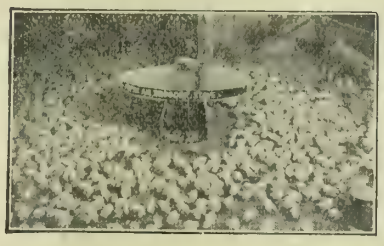
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STANDARD-BRED SINGLE-COMB WHITE LEGHORNS.

Hatching Eggs, $1.50 per setting	$5.00	per 100
Baby Chicks, February delivery	12.00	" 100
" " March "	10.50	" 100
" " April "	10.00	" 100

WHITE PLYMOUTH ROCKS.

Hatching Eggs, $2.00 per setting	$ 7.00	per 100
Baby Chicks, 20c each	15.00	" 100

In the Utility Class at the P. P. I. E. Poultry Show our Leghorns received 4 awards, and on Eggs 1st and 2nd.

Our White Plymouth Rocks received 7 awards, and on Eggs 1st and 3rd.

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The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

Dear Friends: With Easter only about a month away, we are all very much interested in what we shall have for spring hats.

From the display, there is a hat for every face and every pocketbook. The prevailing colors in the general utility hats are purple, dark brown and black. Purple is enjoying quite a reign and is being used for hats for all ages and is as much worn by girls as older women.

The small, high-crowned, drooping shapes are very popular and deservedly so, for they give the head a neat appearance and can be fastened on very securely with a veil. Many of these are trimmed in high, upstanding ribbon bows of either harmonious or contrasting color and a bunch of small flowers.

Another attractive model is the semi-poke bonnet effect—down on the sides and up in the back. These hats are trimmed flat with velvet ribbon and the turned-up back is covered with flowers. Some of these hats have ribbon ties that add to the quaint effect.

Last, but not least, either in size or popularity, are the sailors. The new sailor has the rolled brim and is of fine straw and is trimmed to suit the taste of the wearer and the purpose for which it is bought. The plainer ones have a simple ribbon ornament or a fancy straw braid around the crown or narrow picot edge ribbon running across the crown in various designs. While the very same shape may be faced with satin and have a wreath of roses and leaves running around the crown or a fancy feather ornament on the side, making a much more dressy and also more expensive hat.

The dress hats are made of silk crepe and maline and there are beautifully colored flowers used in the trimming, but not so much ribbon.

There is talk of its being a white season for hats and those that are being shown now are of hemp or fine horse-hair braid, faced with colored silk and trimmed with flowers and leaves and velvet ribbon.

There are almost no ostrich feathers being seen, either in the shops or on the streets, but some of the walking shapes are trimmed in quills.

Veils are a good deal in evidence —those with borders hanging straight from the hat almost to the shoulders, while others of open mesh are fastened snugly around the face.

If a veil is to be worn for several hours, it should be of thin, open mesh, without dots or heavy figures, as it will be much less tiring to the eyes. —Rosabella Best.

A POOR CHICKEN.

A well-known professor has a bright little boy, who one day appeared in his father's study clasping a forlorn little chicken. "Willie," said the father, "take that chicken back to its mother." "Ain't dot any modder," answered Willie. "Well, then, take it back to its father," said the professor, determined to maintain parental authority. "Ain't dot any fader," said the child. "Ain't dot anything but an old lamp."

LEMON PIE.

FOR the crust, use 1½ cups flour and ½ cup butter or a trifle less of lard, 3 tablespoons of water, a pinch of salt and also of baking powder. Sift flour with powder and salt; cut in lard with a knife, add the water and handle lightly. This should make two shells and you will find the shells better shape if you invert a pie tin and fit the pie crust over it. Slip the inverted tin into the oven and bake. The filling is most delicious and is composed of 4 eggs, 1 cup sugar, 1 lemon. Beat yolks and one white very light with the sugar, add juice of lemon and cook in double boiler. When well thickened, stir in the well-beaten whites of three eggs. Put into the crust and brown a trifle in the oven.

PORCH FURNISHINGS.

Those of you who live in the warm valleys can have pleasure out of your porches that cannot be enjoyed by the dwellers on the coast. But to get the fullest enjoyment you should have your porches ready for use by the time the warm weather is here. Awnings of striped material are an ornament as well as a protection from the too ardent rays of the sun, and a grass rug, which does not fade nor show soil would be good for the floor.

There should be seats of some description ready for occupancy, there being nothing prettier than the willow in a soft gray green, with chintz cushions. But if this is not practical from a financial standpoint, there could be benches built along the walls and small grass mats (which are very inexpensive) used for seats on the steps.

Hanging baskets are very pretty and a great addition to any porch. They can be of sprengeri, or even of wandering Jew. You will find them much easier to keep growing well if you have a pan fastened on the bottom of the basket in which water can be kept. Otherwise, they require lifting down to water and that seems such a burden. If these pans are painted green, you hardly notice them at all.

Children always enjoy a hammock and the pretty coloring adds to the attractiveness of the porch. The whole idea of furnishing a porch is to add to the comfort of the family and make it a pleasant place where any member of the household can drop down and rest in the open air.

SHINE THE SILVER.

Cleaning silver in the old-fashioned way by rubbing every part of the surface with silver polish is a very arduous task. The new "Silver Clean" pans have changed all that. These pans are made of zinc with a wire tray in the bottom on which to place your silver. After you have put in all the silver you desire to clean, you fill the pan with hot water to which you have added salt and common baking soda.

A few moments suffices to clean the silver and you have no work in the matter but to take out and dry. If silver is badly discolored, it may require a second bath. This is entirely harmless to all ordinary ware, but must not be used on oxidized silver.

These pans can be purchased at any good grocery or hardware stores and are not expensive.

HOME HAT TRIMMING.

Dear Nan: If you are industrious at all this spring, why don't you make yourself a hat or make over an old one? I have just finished remodeling several old hats and they look very nice. If you have a rusty-looking black straw or burnt white one, buy some hat blacking. I did hear one of the girls say that she used liquid shoe polish, but I bought a preparation called "Blak-it." Apply this to your old hat and when it dries, it will look just like a new one. The Blak-it gives a body to the straw and a nice sheen to it too, which makes it look like new. If it is a sailor shape, you can put flowers, ribbon or quills on it, anything that looks fresh and nobby and you will have a hat to be proud of at very little expense.

Don't black your old panama though, but have it cleaned and reblocked. Mine looked almost as well as it did when I bought it with it made into a new shape and retrimmed. Put on a ribbon band with a small flat bow at the side, or loosely tie in a knot a ribbon about two inches wide of the same color as your sweater, or (very fashionable) of your stockings if you wear gay ones with your white clothes.

You can make a very pretty hat for dressy occasions, or to wear with a suit, by covering an old becoming shape with taffeta. Of course, you can buy canvas shapes all ready to cover, but a hat to be pretty on you must be becoming, so choose a shape that you know suits your face and then pull the taffeta snugly over the frame and catch it neatly. A crown of rows of shirring would be pretty with a plain brim, trimmed very simply, just a single rose or ornament of some sort. Hats to be smart must not be overtrimmed; let the materials show the niceness of your hat.

I hope you will try some of these suggestions. You will feel so proud to be able to fix up your own things and you can have twice as many of them, at the same expense, if you can make them yourself.

Wishing you great success, devotedly, Betty.

For those people whose skins are very tender, or who have luxurious tastes, there are scented bath tablets of soap of various odors—geranium, almond, violet and mint. They are good-sized cakes and not too expensive, selling three for a quarter, but, of course, they are not expected to take the place of a good reliable white soap for ordinary usage.

THE ROSE.

Authorities agree that March or early April is as late as it is safe to plant roses for summer blooming. They should be planted in good, heavy soil well mixed with good, old stable manure.

After the rose bush has been placed in the hole prepared for it, fill in with soil until about three-quarters full and then add water to settle the soil around the roots, before the hole is entirely filled. Good, two-year-old bushes should produce an abundance of bloom the first season as early as May or June and if all old blossoms are kept cut off and the plant watered well, their blooming can be prolonged into December.

The best way to water is to dig a trench around your bushes and fill with water, afterwards covering with dry earth. This keeps the moisture where it should be—at the roots. Do not do surface watering unless you wish to spray to remove the dust.

The insect pests of the rose are not numerous and in most cases can be controlled. Aphis is the most serious and if left unmolested will take the life and vigor from any plant. The remedy is spraying with a nicotine solution. Mildew is a whitish looking mould that covers some roses so completely as to spoil all their beauty and retard their growth. It is due apparently to atmospheric changes, such as warm days followed by cold nights. A dusting with sulphur in the morning before the disease appears is a good preventive.

There is also a rose slug that does some damage, but it is not a serious pest.

The following list of twelve rose bushes were suggested by a florist as being among the most satisfactory for the average yard: Lamarque, Papa Gontier, Juliet, Cecile Bruner, Pink Cochet, Caroline Testout, Frau Karl Druschki, Gen. McArthur, Mrs. A. Waddell, Harry Kirk, Ulrich Bruner, Beaute de Lyon and Madeline Soupert.

For recipes where care in measuring is necessary, a set of measuring spoons is valuable. These spoons hold respectively, 1 teaspoon, ½ teaspoon and ¼ teaspoon and can be bought in the set for fifteen cents.

PROTECT THE CHILDREN.

Whenever the patient with tuberculosis is a member of a household, the condition of the physical health of each member should be determined, and improved as much as possible.

The only way to eradicate tuberculosis is to have those people who come in contact with it in such a vigorous state that they can resist it.

After a death from this disease in a home, walls and woodwork should be freshened and the place fumigated in addition to the washing of all bedding.

A sojourn in a sanitarium of a tubercular patient for a few weeks is of great value not only to the patient himself, but to the community, for the discipline learned there teaches how to avoid being a menace to health.

THE SUNRISE NEVER FAILED US YET.

Upon the sadness of the sea
The sunset broods regretfully;
From the far, lonely places, slow
Withdraws the wistful afterglow.

So out of life the splendor dies;
So darken all the happy skies;
So gathers twilight cold and stern;
But overhead the planets burn.

And up the east another day
Shall chase the bitter dark away;
What though our eyes with tears be wet?
The sunrise never failed us yet.

The blush of dawn may yet restore
Our light and hope and joy once more.
Sad soul, take comfort, nor forget
That sunrise never failed us yet.

THE CHOCOLATE BUSH.

"Chocolates don't grow on every bush!" teased father, slipping out of four pairs of hands that clung like burrs to his coat and his collar and his furry fingers. The children always pounced on him for a kiss when they saw him go whisking out of the door and trying to catch the car for the office.

"Wouldn't it be fun if they did!" giggled Marion, curling up in a corner of the sofa when he had got away from them. "Like huckleberry bushes, you know! My wouldn't I like to 'go berrying'!"

"Wish't I could!" said Connie. "We could make-believe a tree if we wanted to—an April-Fool tree. Let's do it to-night—to father!"

Every year when April-Fool's Day came around they always had had some funny joke "on" father. Sometimes the joke was the other way, for mother helped them, and mother was the best fun in the world to help you think up little jokes that couldn't hurt anybody.

"Mother would help us—let's ask her!" cried the other children. "We could get a bush and fix it up with paper chocolates the way we made the paper oranges, you know, and tied them on. Mother can show us."

"I think it would be great fun," said mother. "You two boys go and find your bush—a good scraggly one, with lots of sharp twigs and thorny tips all over it. I'll show you why when you bring it."

"And what can we do, mother?"

"Why, up in the garret, Connie, is a great heap of brown tissue-paper, in behind the big trunk where the boxes are. You can get some of that and take it down into the kitchen, and get Myra to let you smooth it out with a warm flatiron. On the shelf in my closet, Marion, you will find some bits of jeweller's cotton, all colors. Here is some paste (or a drop of mucilage is just as good) to finish the chocolates with, and when you come back I'll help you make a fine supper-table ornament."

"Don't they look just e-zactly like the candy ones?" admired Connie, as the soft brown balls grew under their fingers. Each one was stuffed tightly with cotton till the thin brown outside was plump and smooth and looked good enough to eat. A drop of paste on the under side made it nice and firm, with no edges showing. On some of them mother stuck a little snip of red paper to look like a bit of candied cherry. Others were topped with a piece of broken walnut.

It did not take long to make them, and then there was the fun of sticking them on the tree. First, mother made a place in the middle of the table for the big green jardiniere, and filled it with nice white sand and stuck the bush in it. Next, they carefully pushed a paper "chocolate" on to every sharp little twig and thorn, till the scraggly thing looked as if it had blossomed out with big brown berries. It was a beautiful bush, and almost made the children's mouths water.

"If it was only a really-and-truly!" sighed Connie.

"Then there wouldn't be any April Fool to it!" returned Marion. "And it's April-Fool Day, and somebody always has to be."

It must have been overhearing this that made mother think of turning the joke on them. A few minutes after, when they were busy over a game, she went to the telephone. All I can give you is what she said at her end of the line, but perhaps you can guess what the other person said, or part of it.

"You—papa?"

"You're going to be dreadfully April-fooled tonight!"

"You know what you said when you went away—about chocolates growing on bushes?"

"Well, they've made a bush! Paper chocolates—stuffed with cotton. Understand?"

"Um-huh! That would be fine. A pound would do nicely. Could you take off the paper ones and change them for real ones in ten or fifteen minutes? All right, I'll get them singing round the piano or something. Come home early."

Now you can guess, can't you? That was just what happened. When they were called out to supper, the candles were lighted and the children all stood with shining eyes to see how father would look when he saw the chocolate bush, and especially how he would look when he tasted one of the chocolates.

"You see they do grow on some bushes!" teased Marion.

"I see!" said father. "First time I ever saw such a bush in my life! Are they good to eat?"

"Just try one!" screamed the children.

"Fine!" said father, trying one, obediently. "Have one yourself," he urged politely, reaching one to Marion. "No?" as she drew back. "Why, they aren't all for me, are they? This is delicious!"

The children began to look doubtful. He didn't seem to mind the cotton a bit, but kept on tasting. Mother looked on with twinkling eyes, but said nothing. Suddenly, the boys slyly reached out a hand and helped themselves to one apiece.

"They're real!" "They're real!" they cried out both together. "It's father fooling us! He's changed the paper chocolates for real ones!"



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Ghirardelli's Ground Chocolate

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FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS.

San Francisco, Mar. 23, 1916.

WHEAT.

Local business is limited to the requirements of the moment, most of the larger consumers having provided for their needs earlier. Eastern fluctuations have been slight, and have not affected this market, prices here standing as before.

Cal. Club, ctl	$1.65@1.70
Northern Bluestem	1.85@1.90
Northern Red	1.85@1.95

BARLEY.

Buying has been decidedly of a hand-to-mouth order, with an uncertain feeling as to the future, but with moderate supplies holders are forcing sales and values show no quotable change.

Shipping, ctl	$1.40 @1.42½
Choice Feed, ctl	1.35 @1.37½

OATS.

While oats are in fair supply, and with no large demand, there is an easier feeling, though the old range of values still stands. There is a fair demand for red feed, but the movement is not heavy.

Red Feed	$1.35@1.37½
Red Seed	1.45@1.65
White	1.50@1.55

CORN.

Eastern corn is fairly steady, and good California yellow is salable at about the same figures. Desirable lots of Egyptian, etc., are also moved without difficulty, but there is plenty of poor stock that will not pring the prices quoted.

Eastern Yellow, ctl	$1.80@1.85
Milo Maize	1.40@1.45
Kaffir	1.60@1.65
Egyptian	1.50@1.55

BEANS.

There is still nothing of much interest to report. Again there is only one change, and that downward, horse beans being lower. Other descriptions receive very little attention here, and reports of some large sales in the country are not borne out by statements of local dealers, who say there has been no demand of any consequence for over two months. A reviving demand, however, is expected before long, and there is no disposition to force sales at the expense of prices.

(On wharf, San Francisco.)

Bayos, per ctl	$4.60@4.70
Blackeyes	3.20@3.30
Cranberry Beans	4.75@4.85
Horse Beans	3.00@3.25
Small Whites (south)	5.60@5.70
Large Whites	5.75@5.90
Pinks	4.30@4.40
Limas (south)	4.30@4.40
Red Kidney	6.50@6.75
Mexican Reds	4.50@4.65
Tepary Beans	4.00

SEEDS.

Alfalfa still receives considerable attention, but the demand is beginning to decrease, and other lines quoted are quiet. Values stand about as before.

Melilotus Alba, lb.	23 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	5 c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Alfalfa, per lb.	22 @24 c
Sudan Grass	40 c

HAY.

Hay is still coming into this market more freely than is warranted by the demand, which is by no means heavy. As a result, the daily arrivals have been rather slow to clean up, and in some cases prices have been shaded, though not enough to warrant a change in quotations. There is still a good demand from some interior points, which helps materially in maintaining prices. Offerings are mainly of medium and poor grades, fancy hay being very scarce, and bringing even better prices in the south than here. Some export business is reported, but nothing important. Arrivals of alfalfa are light, but with a new crop in sight prices are easier.

No. 1 Wheat	$13.00@16.50
No. 2	12.00@14.50
Tame Oats	12.00@18.00
Wild Oats	12.00@14.00
Alfalfa	14.00@17.00
Stock Hay	10.00@12.00
Straw, per bale	25@ .40

FEEDSTUFFS.

Some of the staple lines, such as **bran, middlings, etc., continue in** fair demand, and alfalfa meal holds its own pretty well, but in general the call for feedstuffs has fallen off greatly in the last few weeks, owing to the rapid growth of green feed. Values are steadily held.

(Wholesale prices per ton, carload lots, San Francisco.)

Beet pulp, per ton	$22.50@23.50
Alfalfa Meal, per ton	20.00@21.00
Alfalfa Molasses Meal per ton	21.00@22.00
Bran, per ton	26.50@27.50
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00@25.00
Cracked Corn	39.50@40.50
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Tankage	45.00
Rolled Oats	29.50@31.00

VEGETABLES.

Many lines of vegetables continue to decline, with rapidly increasing offerings of local stock. Some Florida peppers, eggplant, etc., are still appearing, but the prices are lower; and Mexican tomatoes also show a sharp decline. The principal feature is the extremely heavy supply of asparagus, of which over 6,000 boxes arrived Tuesday, and prices are accordingly dropping. Rhubarb also is much lower, with a large supply of fine stock, and hold-over lots are hard to sell. Peas and string beans are going down steadily, and celery is considerably lower, with larger offerings than can be sold.

Cabbage, ctl	50@60 c
Cauliflower, doz	50@60 c
String Beans	10@15 c
Peppers, bell, lb.	10@15 c
Rhubarb, box, Bay	.50@1.00
Peas	7@ 9 c
Tomatoes, Mex., box	1.50
Eggplant, lb.	10@15 c
Celery, crate	2.50@3.00
Artichokes, doz	20@50 c
Lettuce, small, crate	.75@1.00
Asparagus, lb.	3@5 c

POTATOES AND ONIONS.

There is nothing new in the situation this week, most of the supplies now being old stock from outside points, prices on which are not especially strong.

Oregon Burbanks	$1.75@2.00
Salinas Burbanks	2.10@2.25
Delta Burbanks	1.10@1.50
Sweet Potatoes, ctl.	2.30@2.50
Onions, Delta, ctl.	1.85@2.25
Oregon	2.00@2.50
River Bermudas, crate	2.00
Garlic, per lb.	8@10 c

POULTRY.

Few good turkeys are arriving, and while the demand is light, prices show an improvement. Young chickens are still rather high, but with slightly larger arrivals broilers have declined a little. Everything else, however, is in limited supply, and prices have been marked up. Squabs are easier, and $4 is the top figure on ordinary offerings.

Turkeys, dressed	27@30c
Live Turkeys, lb	20@22c
Broilers, 15 lbs. to doz. and less, lb.	40@42c
do, over 15 lbs. to doz.	35@38c
Fryers	30@32c
Hens, extra, per lb	20c
Small	20c
Smooth Young Roosters, per lb.	22@23c
Squabs, per doz.	3.00@4.00
Geese, per pair	2.25@3.00
Ducks, young, lb.	18@19c
Old	17@18c
Belgian Hares	9@11c

BUTTER.

There has been some special inquiry from Los Angeles, where a shortage is reported, though Exchange prices there do not show it. Local prices are much higher than last year.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	28½	28½	28	28	28	28½
Prime Firsts	27½	27½	27½	27½	27½	27½
Firsts	27½	27½	27½	27½	27½	27½

EGGS.

The egg situation appears about normal for this time of year. Production in nearby districts is heavy, but the surplus over local needs is well taken up by storage interests, keeping prices fairly steady.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	19½	20	20	21	21	21½
Sel. Pullets	17	17½	17½	18½	18½	18½

CHEESE.

Monterey cheese is offered quite liberally, and the market shows a further break. Flats and Y. A.'s, however, have been cleaning up well, and both lines are ½c higher.

Y. A.'s, fancy	18½c
Fancy Calif. flats, per lb.	18 c
Monterey Cheese	17@18c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	27	27	27	27	28	28
Eggs	19½	19½	19	18½	19	20

DECIDUOUS FRUITS.

Interest has been added to this department by the appearance of strawberries, which have been out of the market for an unusually long period and are well received. The shipments come from Imperial, and the first lot sold up to $3.50 per crate, declining since, with larger offerings. Shipments from other districts are expected before long. Apples show no quotable change, and the current demand is inactive.

Strawberries, S'n, crate $2.00@2.50

Apples:

Pearmain	.85@1.25
Baldwin	.75@1.25
Oregon Spitzenbergs	1.50@2.50
Jonathan	1.25@1.75

DRIED FRUITS.

Conditions in the dried fruit trade show no very important change as yet, everything being so unsettled that ideas as to values are little more than guesswork. There is no desire to buy in any quarter, and it looks as if it might be a long waiting game, with conditions very much to the disadvantage of such growers as do not stand firmly together, as many buyers will use the situation to drive close bargains. Prunes appear to be the item of most interest at present. Some packers report making purchases in the country as low as 3½c, or even 3¼c; and are not at all disposed to pay more, though many growers are still holding their prunes considerably higher. With co-operation, it would certainly seem as if the growers should be able to clean up the little that remains at better figures, as stocks in consuming markets are light. Apples also are lower, with some surplus reported both here and in the East; and apricots have been marked down a little, though they are too scarce to cut much figure. Calimyrna figs are higher, with imported stock cleaned up; while black figs are hardly so firm. The raisin market is steady, and there is no apparent anxiety over the English embargo. The New York Journal of Commerce says:

"The depressing influence of the British embargo appears to be too much for some of the Coast packers to withstand and prices are again lower for 1915 crop California prunes. The tone is easier than for some time.

"Prices for stocks of 40s to 60s, inclusive, 1915 crop Santa Clara prunes, declined to a flat 4c bulk

BUTTER SHIPMENTS TO THE EAST.

WAR conditions, apparently, are boosting local butter prices. England has not been getting much from the usual European sources, and for some time there has been little for Australia, with the result that heavy buying has been done in New York. Eastern storage stocks are said to be closely cleaned up, and production there is not sufficient to meet both local and export needs, resulting in high prices which are attracting California butter east in liberal quantities, ten or more cars having been shipped recently. The New York price has been running up to 39c, and Chicago to 36c; and a difference of 5c at the time of arrival is said to afford a profit to the shipper. However, these long-distance shipments are considered quite risky, as the necessary time for transit may bring a flood of stock from nearer points, and unprofitable prices when the goods arrive.

Special Live Stock Market Report.

Finished cattle are still scarce and prices have advanced slightly. Packers are probably pretty well supplied, however, till grass cattle come in about the middle of April.

Spring lambs are now coming in fairly well, but prices will probably continue high. Prime wethers are quoted slightly higher.

While the eastern hog market dropped about 35 cents per cwt. from the highest point, quotations remain unchanged. There is still a scarcity of heavy hogs and prices for this class are not likely to go lower at this time.

WOOL.

The wool market is still a waiting one. There is practically no buying activity. There is reported a tendency among eastern wool owners to shade prices in order to move stocks on hand. The London market closed weak with clear wool off 5 per cent and defective seedy and short wool off 20 per cent.

The TRACTOR of General Utility



Knapp & Black, Gen'l Ag'ts Bullock Creeping Grip Tractor
157-59 N. Los Angeles Street, Los Angeles, Cal.

basis f. o. b. common Coast shipping points for immediate shipment, and even with this concession made on the part of the packers, buyers show little interest.

"Future 1916 crop prunes have been influenced to an even greater degree than 1915 supplies."

Apples	5 @ 5½c
Apricots, per lb	6 @ 10 c
Figs, white	5 @ 5½c
Black	3 @ 3½c
Calimyrna	7 @ 10 c
Prunes, 4-size basis	3½ @ 4½c
Peaches	3 @ 3½c
Pears	4 @ 7 c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6¾c
London Layers, 3-crown, 20-lb. box	1.25
Imprial Clusters, 6-crown, 20-lb. box	2.50
Bulk, layers, 50-lb. box	2.75

CITRUS FRUITS.

The eastern citrus auctions are paying fair prices only for oranges and lemons, though the demand seems to be stronger than for some weeks past. At New York on Monday, March 21st, oranges averaged from $1.70 to $3 per box and lemons brought $1.75 to $2.10. The same day at Chicago oranges averaged at auction from $2.25 to $3 and lemons from $2.25 to $3 per box. Shipments from southern California this season are 1,000 cars less than same date last year and 2,000 cars two years ago, which means there are lots of oranges to go east during the next few weeks.

Oranges have been arriving in the San Francisco market very freely for the last fortnight, and a good many dealers are looking for a drop in prices, with the result that local business is very quiet, though no quotable decline has yet been made.

(Wholesale prices, San Francisco.)

Oranges, Navels	$1.75 @ 2.75
Tangerines	1.50 @ 2.00
Grapefruit	1.25 @ 2.50
Lemons, box	1.75 @ 3.25
Lemonettes, box	1.25 @ 1.75

HONEY.

The local honey market remains quite firm, supplies being light and the consuming demand normally active, and apparently there is little desirable stock available in the country. Of course no large shipments would be welcomed here, as there is no large outside demand and local needs are not heavy. Conditions of late have been favorable for a good crop in some districts, but it is too early to get definite information as to the probable output.

Water White, comb	13 @ 15 c
Amber	8 @ 12 c
Water White, extracted	7 @ 8 c
Light Amber	3 @ 4 c
Dark	2 @ 2½c

NUTS.

Both walnuts and almonds are closely cleaned up on the spot, and large buyers show a general disposition to provide against future needs, the indications being that the coming crops will move off at good prices. It is too early, however, to venture any predictions.

(Prices f. o. b. San Francisco.)

Almonds (1915)	Nominal
Walnuts (1915):	
Budded, per lb.	17½c
No. 1	14 c
No. 2	11 c
Jumbo	17 c

LIVE STOCK.

(Prices, paid for stock, live weight, off cars, without feed or water, at Stock Yards, S. F.)

Steers, No. 1	7½ @ 7¾c
No. 2	7 @ 7¼c
Cows and Heifers, No. 1	6½ @ 6¾c
No. 2	5¾ @ 6 c
Bulls and stags	4 @ 5½c
Calves, light	8½ @ 9 c
Medium	7½ @ 8 c
Heavy	6½ @ 7½c
Hogs, grain-fed:	
100 to 160 lbs.	8½c
160 to 175 lbs.	8¾c
175 to 250 lbs.	9 c
250 to 325 lbs.	8¾c
Prime Wethers	7½ @ 7¾c
Full Wool Lambs	9 @ 9½c

DRESSED MEATS.

Steers	10¾ @ 11¼c
Veals, large	12½ @ 13 c
Small	13 @ 14 c
Prime Wethers	13½ @ 14 c
Lambs	15½ @ 16 c
Spring Lambs	17½ @ 18 c
Hogs	11½ @ 12 c

HORSES.

A good many wagon horses that have been used on local delivery or teaming work are still being offered, and those that appear to be good value find fairly ready sale. Heavier stock has come in more freely this week, including good-sized assortments of chunks and drafters both from Nevada and northern California, as well as a good-sized lot of mules. The heavier stock has been cleaning up readily at full values, and well-formed, gentle-broke horses of medium weight are sold without difficulty, though the general run of light stock finds no demand here.

(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs and up	$250 @ 300
Drafters, 1550 to 1650	150 @ 225
Chunks, 1350 to 1500 lbs.	150 @ 175
Wagon horses, 1050 to 1350 lbs.	110 @ 150
Green Mountain range horses, 950 to 1200 lbs.	20 @ 75
Farm Workers	50 @ 100

HIDES.

There is considerable demand from both local and outside tanners, and prices on most lines have been marked up about a cent.

HIDES.

Dry, 15 lbs. and over	30 @ 31 c
Kip, 10 to 15 lbs.	31 @ 32 c
Veal, 7 to 10 lbs.	33 @ 34 c
Calf, under 7 lbs.	34 @ 35 c
Wet Salted, Steers	17 @ 18 c
Cows	17 @ 18 c
Kip	19 @ 20 c
Calf and Veal	22 @ 23 c
Bulls and Stags	13 @ 14 c
Horses, dry, large	$1.25 @ 2.25
Sheep, long wool	1.25 @ 1.40
Medium	1.00 @ 1.25
Shearlings	.45 @ .55

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	28.60	28.00		28.20
" 9	25.33	26.66	26.00	28.10
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	28.66	36.33	28.00	36.66
Feb. 6	26.68	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25
" 20	29.00	32.00	27.16	32.00
" 27	29.10	30.90	27.00	35.25
March 6	27.00	24.08	25.25	24.16
" 13	24.66	29.91	24.00	28.83
" 20	23.00	28.33	22.50	27.16
" 27	22.91		23.00	

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 30	28.16	36.33	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50
" 13	23.00	28.90	25.10	28.00
" 20	23.60	23.66	23.58	20.33
" 27	21.40	20.30	20.80	18.50
March 6	20.50	18.33	19.00	18.00
" 13	20.66	19.50	19.00	18.91
" 20	21.00	20.00	19.66	19.08
" 27	20.83		18.50	

Publisher's Department

The gain in new subscribers during the past week was 199, one less than the mark we had hoped to pass. Better luck, boys, next week.

Occasionally our book department receives a request to send a book on approval. This we can not do, though we dislike turning down the request. The books we publish are for sale by practically all book stores and may be examined there before purchased. We are always ready to fill book orders, providing a check comes along.

The Killefer Mfg. Co., Los Angeles, announce as the winner of the prize given by them during the recent Orange Show at San Bernardino, C. A. Stone, foreman of the Fontana Ranch Co., Fontana, Cal. The prize was a La Verne Rotary Cultivator, manufactured by Killefer Co.

THE WEST JERSEY SALE.

The Jersey breeders of the Northwest are to have an opportunity on April 6 to secure at their own price one of the best herds of Jerseys that has ever been offered to the public in this or any other country. At this time, H. West, of Scappoose, Ore., breeder and importer of Jersey cattle, will offer at public auction fifty-one head of the choice specimens of his large herd, all of which are imported or are the progeny of imported dams and sires.

For a number of years there have been those who contended that if you have a beautiful herd of prize winning Jerseys, you have them at the sacrifice of the "pail and churn," and still others who argue that production is the real test of the worth of an animal, and that production can only be obtained at the expense of beauty. Mr. West adopted as his slogan, "Beauty and Utility," believing that these two characteristics could be combined in one individual, and that a herd of this kind is the most satisfactory of all. The result of this policy has been to develop one of the highest producing herds in the Northwest, and to use his own expression, "the herd will produce an average test of 6 per cent butterfat."

Surely beauty and utility have come into their own. These animals are offered you at your own price. Go out and get them. The catalogue is ready and same can be obtained by writing H. West, proprietor, Scappoose, Ore., or C. D. Minton, clerk of sale, 310 Stock Exchange Bldg., Portland.

Classified Advertisements.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

ORDER YOUR PRINTING NOW before prices are raised; paper is advancing and printing will soon cost you more; get my prices and save money. Mail orders a specialty. G. C. Gallagher, The Service Printer, 309 Battery St., S. F.

FOR SALE—10 head young, well-broken mules, average weight about 1100 lbs. For particulars enquire Valley Farm & Stock Co., 149 New Montgomery St., San Francisco. Phone Kearny 2735.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds $3.00 delivered. Order with remittance, WM. J. SCHROTH CO., 112-B Market St., San Francisco.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

APPLES!—Buy direct from producer. Newtowns, 90c; Bulk pack, 4 and 4½ tiers, equal proportion. No. 2 grade for cooking, 65c. In 5 box lots 70c and 50c per box. Edwd. A. Hall, Watsonville, Cal.

IRRIGATION EQUIPMENT—For pumps, oil engines, gas engines, friction clutch pulleys, etc., write us. We can save you money. Commercial Iron Works, 481-497 Fifth St., San Francisco.

CONCRETE MIXERS—2 brand-new mixers at manufacturers prices. Write at once. Commercial Iron Works, 481-497 Fifth St., San Francisco.

ONE 45 H. P. and one 20 H. P. I. H. C. traction engine for sale, cheap. Will trade for stock. B. T. Brewster, Box 466, Davis, Cal

GAS ENGINE—25 H. P. Fairbanks Morse Vertical. Guaranteed perfect. Bargain. J. J. Pottinger, 189 2nd St., San Francisco.

SEEDS AND BULBS.

SEED CORN: "LEAMING"—Best for ensilage. Second year's crop from pure-bred Eastern seed. Grown on my farm in Stanislaus county. Seed carefully cured. High percentage germination. Price, 5 cents per pound. Planting season begins in April. Order early. Montgomery Baggs, 311 California St., San Francisco.

GRAIN AND BEAN SEED—Three Money-Making Crops—Soudan Grass, Feterita, Tepary Beans. Buy now and secure first-class, authenticated seed from grower direct. Write for prices and instructions to Dittmar & Stahl, Ripon, San Joaquin county, Cal. This is the final appearance of this advertisement.

CALIFORNIA GROWN SUDAN GRASS SEED—Absolutely free from Johnson Grass or other Weed seed. Plant all you can of it; for Broody Chicks and laying Hens or sock of any kind you can't beat it. 30 cents per lb. Write for prices on large lots. Lasher's Hatchery, Petaluma, Calif.

WE BUY ALFALFA SEED containing Dodder, Mustard and other noxious seeds. Send us samples of any high or low grade seed you may have; also of mustard, burr and sour clover seed, flax, etc. Signed Mercantile and Warehouse Co., Fifth and Poplar Streets, Oakand, Cal.

SEED BEANS—We have choice Red Mexican and Blackeyes grown on sandy land, producing a heavy crop. Well cleaned and in good order. Write for prices to THE GRANGE COMPANY, Modesto, California.

SUDAN GRASS—The dry land hay crop. Recleaned. Certified Seed. 10 lbs. $1; 25 lbs. $2; 50 lbs, $3.25; 100 lbs. $6. F. O. B. Lubbock, Texas, ACME SEED CO.

SEED BEANS—White Tepary Beans grow without irrigation. 600 to 800 pounds per acre. Write for sample and prices. Robert A Read, Grower, Delano, Cal.

FOR SALE—300,000 yellow Jersey sweet potato plants. Prices from $2 to 50c per thousand. For information, write Parker Bros., Hemet, Cal.

TEPARY BEAN SEED—Recleaned A No. 1 seed. None better on the market. Also Sudan Grass seed; guaranteed pure. Carl Nelson, Strathmore, Cal.

SOUDAN GRASS—We had the best seed at Denver Dry Exposition: 50 lbs., $3; 100 lbs., $5, f. o. b. Amarillo Seed Co., Amarillo, Texas.

TEPARY BEANS FOR SALE—Eight cents per pound. Robert Paulsen, Lockewood, Cal.

TREES AND PLANTS.

WALNUT TREES — Late blight-resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California black root as the California Black root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

30,000 CITRUS TREES—Navels and Valencias—27½c, delivered at your depot, anywhere in California, packed in moss, bare root lots of 500 and up; or 37½c in 35-lb. bails in 10-acre plantings. All big two-year-old stock; choicest ever produced by anybody, anywhere, at any price. Samples sent free on request. Lem. A. Runson, 1120 Haas Bldg., Los Angeles. Phone F 4003.

WALNUTS—Budded on California Black root; Franquette, Mayette, Concord, Eureka and other leading varieties. Extra fine stock. No better anywhere. Write for full particulars and prices. Woodbridge Walnut Nurseries, Motor Route B, Box 269, Modesto, Cal.

EUREKA WALNUTS ARE THE BEST.—Grafted on native black roots. Our prices will surprise you. Write today—tomorrow never comes. Geyer Bros., Walnut Nursery, 214 S. Alamansor St., Alhambra, Cal.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

FRUIT AND ORNAMENTAL TREES and all kind of nursery stock, especially suited to Central and Superior California conditions. Buy from a responsible firm. East Lawn Nurseries, Box 418, Sacramento.

WILLSON'S WONDER and genuine Franquette trees and grafting wood for sale. Write for circular and prices. Encinal Nurseries, F. C. Willson, Prop., Sunnyvale, Santa Clara County, Cal.

NURSERY STOCK—None better. 2-year-old Navels, Valencias and Lemons, ⅝ and up, 25c, balled or packed in moss. Ask for prices on carload lots. J. C. Johnson, Azusa, Cal.

GRAFTED ENGLISH WALNUTS—A few hundred fine vigorous trees. Two-year-old California Black Walnut roots, one year Concord Walnut graft. Bishop Bros., San Ramon, Cal.

SWEET POTATO PLANTS for April and May delivery. California Yams, $2.25 per thousand, 35c per hundred, prepaid. J. Braswell, R. D. No. 2, Lindsay, Cal.

SELECT LOCKEFORD BURBANK—Rural and American Wonder Seed Potatoes. $1.50 per 100. N. H. Locke Co., Lockeford, Cal.

SOUR ORANGE SEED grown in section free from citrus canker, guaranteed fresh. Dr. L. A. Shattuck, Leesburg, Florida.

HUSKY TOMATO PLANTS—"Stone" twice transpanted, 5 inch, $1.00 per hundred postpaid. J. F. Swett, Martinez, Cal.

FOR SALE—Orange trees from selected two-year-old stock. K. Matsuoka, one mile west of Sanger, Cal.

PALM TREES—$1.00, $1.50, $3.00 f. o. b. Sunnyvale. F. B. Kraseman.

FOR SALE—Spineless Cactus Plants. Prices right. B. C. Enghert, Byron, Cal.

WANTED

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. R. Humphrey, Principal, Stockton, Cal., Box 704.

MANAGER—SUPERINTENDENT—Stock, fruit, grain, alfalfa. Organizer, expert accountant, labor handler, construction, heavy machinery, details. Successful California experience. Open large permanent work. Box 211, Pacific Rural Press.

EXPERIENCED SWISS DAIRYMAN, married, with some help, wants to take charge of dairy 30 to 50 cows. Either on shares or wages. Box 213, Pacific Rural Press.

RANCH SUPERINTENDENT—Experienced in developing and handling large tracts under irrigation, desires location on salary or percentage. M. W. Russell, 1516 1st Ave., Seattle, Wash

DAIRYMAN WANTED to take charge of a 30-cow dairy in Yolo county on shares. A good milker and feeder is desired. W. H. Donaldson, Esparto, Cal.

LAND FOR SALE.

NEW OPENINGS—Enlraged Homesteads. Nearly TWO MILLION acres GOVERNMENT LAND, different counties, plainly marked on COUNTY SECTIONAL Maps, $2.50, any County. Booklet, map, circular FREE. STATE MAP, showing 600,000 acres of SCHOOL land opening over State, $2.50. Order TODAY. Checks taken. JOSEPH CLARK, Sacramento.

116 ACRES AT GRIDLEY, CAL.—All in alfalfa. Abundance of water and shade trees. Splendidly drained. Good improvements. Absolutely right and high-class. Owner, Paul Goodloe, Route 13, box 28, Gridley, Cal.

FOR SALE—Equity in 15 acres alfalfa land in Merced county. Would exchange for automobile or live stock. J. F. Herbert, 812 Spencer Ave., Santa Rosa, Cal.

160 ACRES near railway, well improved, on county road, suitable for small dairy or stock ranch. Good local market. A. O. Nelson, Raymond, Cal.

A BARGAIN in Olive, Orange, English Walnut trees and Thompson vines at Central Nursery, Route 8, Tulare St., Fresno, Cal. T. Kimura.

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Try This Sperry Recipe

All dry materials to be sifted before measuring; all measurements to be level.

- 3½ cups Sperry Flour
- 1 cup Water
- 1 teaspoon salt
- 1 tablespoon sugar
- 1 tablespoon shortening (melted)
- 1 cake compressed yeast

Dissolve yeast, sugar and salt in water (water 85° F.) Warm flour slightly and beat in a portion, adding shortening. When dough becomes too stiff to use spoon, turn on board and knead thoroughly but gently until smooth and elastic. Cover carefully and allow to rise in warm place (85° F.) until 2½ times volume. Knead gently and let rise again. Mould into loaves, and when double in size bake in medium, quick oven 40 to 50 minutes. (450° F. to 500° F.)

This will make one loaf weighing about 1 lb., 4 oz., and there are 55 of these loaves in a sack of **Sperry Flour**—the flour that enables the beginner, as well as the experienced housewife to produce good things to eat because it is the one flour that never varies—each sack is like every other sack.



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The Sperry Book, "To Think, To Live, To Do,"—tells you all about flour making—bread making and the cause of poor bread. **This book is free.** Write for it today. If you inclose a 2-cent stamp, we will mail you our much prized **Sperry Cook Book.**

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Vol. XCI—No. 14 Forty-sixth Year

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SAN FRANCISCO APRIL 1, 1916. LOS ANGELES

Alfalfa Growing as a Specialty.

Faultless grading, summer fallowing, unusual irrigation, frequent cultivation, and careful harvesting at the right time, return heavy profits.

[Written for Pacific Rural Press.]

PROPER grading is the basis of Woodward & Sons' reputation as the best alfalfa growers in Perris Valley, Riverside county. Certainly they have the finest 80 acres one could wish to look upon, and no better can be found among the 6,000 acres of alfalfa grown in the Valley.

It is not all in the grading, however; for the brothers, whose father has retired, fondle their alfalfa lovingly as a good orchardist does his trees, or a good stockgrower his animals. And in the fondling, they have learned many of the likes and dislikes of this royal forage plant.

It is by acknowledging alfalfa's right to choose the conditions best suited for its thrift and by carefully supplying those conditions, that Woodward Bros. rejoice in the swift uniform growth of their protege.

Never do they have a pet scheme too dear to throw away if a better one presents itself. And while other alfalfa growers are forgetting their plants in winter time, the Woodwards are caring for theirs.

Summer Fallowed Land Best.—It was in April, 1913, that they planted 20 acres on deep, decomposed granite and silt grain land plowed the winter and spring previous. Here was their first lesson. April was too late and the seed bed too soft. They had plowed the rest of the 80 acres, but instead of planting it, they let it settle all summer and planted next November and December.

Next season the last planted alfalfa caught up with the first, and $7,000 worth were sold from the 80 acres. The last of the 1915 crop was sold Feb. 21, 1916, 163 bales at 1 cent per pound to a man who had previously bought 100 bales at $17 a ton. The 1915 crop fed 6 horses all season, put 892 tons 1705 pounds on the cars, and felt about 10 tons for further horse feed. That is close to 11 tons per acre.



A July Mowing Scene in Perris Valley. Seeded April 1. Alfalfa soon attains this long tender growth.



Enormous pumping capacity at Plant No. 2, Perris Irrigated Farms.

How does he do it? He got a fine uniform stand; he keeps it growing without any check through the hot weather.

Thin Sheet of Water Covers Ground.—The contract called for the ground to be plowed 8 inches deep in the winter and spring of 1912-13.

Then the field was graded—right. A low diagonal ridge took one man's time three months. Water might have been piped along this ridge and distributed in both directions. But the job was being done for all time. The 80 is ½ mile long, sloping toward the east 20 feet in that distance. The lower end is also sloped toward center, where a deep well is to collect drainage from all of the 40 half-mile checks or "panels."

Some hard ground was dug up in that ridge. It would not have been good for much that summer, anyway. It was distributed toward the upper end. "Borders" or levees were scraped up 33 feet apart. No clods were left on the surface of this decomposed granite soil.

The checks were tested by water from the pipeline which had been run from the pump at the lower end of the field to the head and across it, leaving one outlet in the middle of the headline of each check.

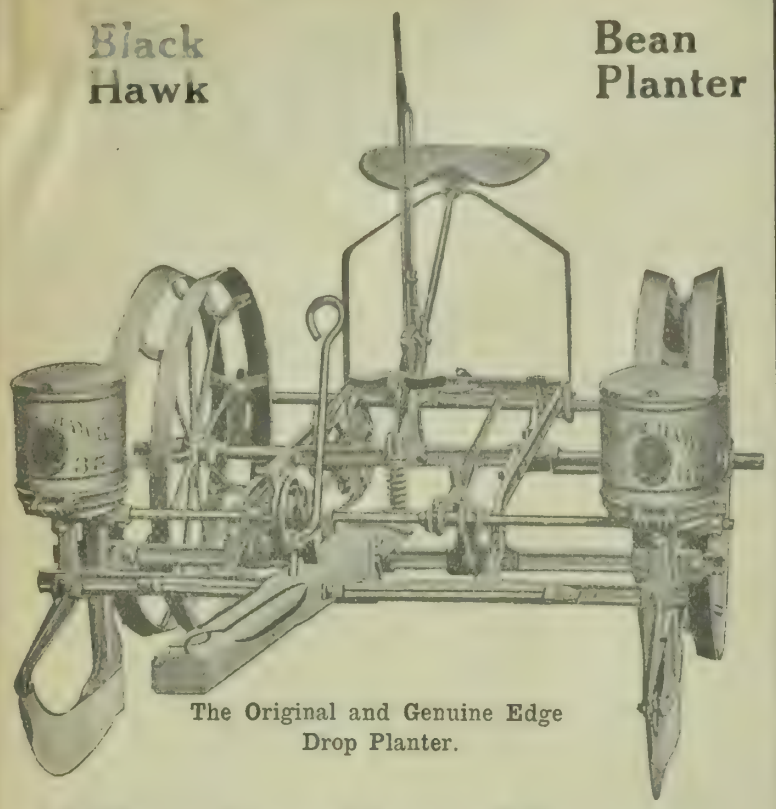
When grading was complete, the water ran over each half mile check like a sheet—not meandering here and there to fill hollows and leave islands. The job was being done so there would never be need to use a shovel in irrigating. No small patches of alfalfa were to be weakened by lack of water or oversupply so that weeds could get started.

Seedbed Fined and Firmed.—"Thorough cultivation after grading—that's where we put in our work." Except the 20 acres, and one panel which was put into garden, the field was kept free of weeds all summer. This allowed the upturned subsoil to weather, and drove out gophers, squirrels, and ants. After the ground became moist from the grading test, it was spring-toothed three times. It became so soft you would not notice hard streaks when you run your fingers into and through it. Then a spike-tooth harrow smoothed it down. All summer a buck scraper

(Continued on page 426.)

SEE WHO'S HERE

Black Hawk Bean Planter



The Original and Genuine Edge Drop Planter.

When You Buy a Planter---
Get the Famous Black Hawk

Because it will plant any kind of beans, peas, corn, milo maize and other similar seed in rows 26 to 44 inches wide.

Because it has runners that plant an even depth, chain drive, automatic out-of-gear device, disc marker, 30-inch open or closed wheels with scrapers and removable boxes, and an auxiliary foot lift.

Because the plates are stopped and started between each cell, which causes the seed to settle in the cell before it comes in contact with the cut-off. This exclusive Black Hawk feature, which is fully covered by patents, increases the accuracy by at least 5%. Furthermore, this stopping and starting prevents the seed from being ground to pieces, as in many other planters where the plate is constantly revolving.

Because the variable drop device, which can be changed by hand or foot while the team is in motion, permits a greater or less amount of seed to be planted in different parts of the field as conditions may warrant.

Because a fertilizer attachment can be furnished when desired.

Write today for special circulars.

Oliver Chilled Plow Works

SAN FRANCISCO, LOS ANGELES.

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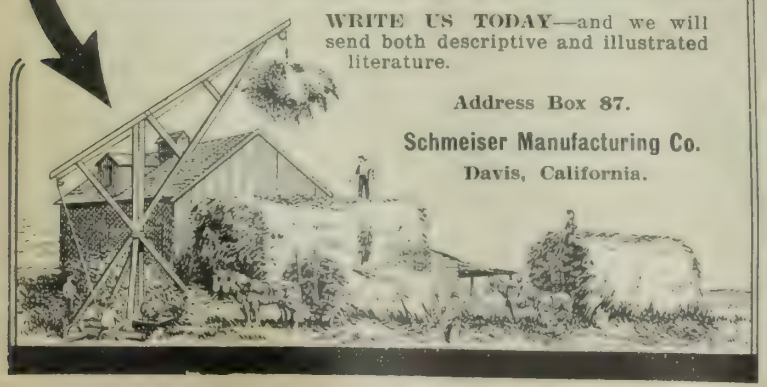
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By Mrs. Susan Swaysgood.

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Pacific Rural Press

525 Market Street, San Francisco, Cal.

Pacific Rural Press

SAN FRANCISCO APRIL 1, 1916. LOS ANGELES

Aristocratic Livestock Down Peninsula.

[Showing how the development of one of California's greatest industries is rapidly spreading in a district primarily given over to fashionable country homes.]

BEING exclusive is a habit that the portion of the Bay Counties' Region, known as the Peninsula, has had since before civilization visited this coast, Mother Nature having started the ball rolling when she combined about as fine a lot of natural scenery as one could imagine in such a comparatively small area.

Since then there have been the artichokes and millionaires. It's hard to say whether artichokes made the Peninsula famous, or vice versa, but at any rate the California epicure doesn't think of one without associating it with the other.

With millionaires it has been about the same way. The Peninsula needed the millionaires and the millionaires needed the Peninsula, and the net result is that the country home district of this beauty-land is noted all over the world for its expansive elegance.

Unfortunately for both, perhaps, artichoke growing is not a particularly fashionable side line on modern country homes and estates of millionaires, either in America or Europe, so Peninsula residents have satisfied their fancy, for growing things, by raising wonders of the horticultural world.

But now a new agricultural industry is under way with a full head of steam, and from the successes of similar undertakings in this and older countries, it is fair to assume that horticultural novelties will soon have to take second place to breeding of live stock on these California estates.



Upper Left—Ayrshire bull, Robinhood 32nd. Lower Left—One of the good Berkshire matrons on Carruthers Farms. Upper Center—One of the Shire stallions in use at the Blackhawk Stock Farm. Lower Center—A portion of the Millbrae Holstein herd. Upper Right—A recent addition to the Steybrae herd from Canada. Lower Right—Shorthorn bull, Count Glory, herd sire at Carruthers Farms.

Of course, if you are acquainted with the country and its natural environments, you won't wonder that the California home of aristocratic man is also to be the home of the aristocratic farm animal. The greatest wonder is that the disease has been so long in spreading.

Holsteins the First Love.—As a matter of fact a germ of the livestock breeding disease was dropped in the district about fifteen or sixteen years ago when the D. O. Mills Company established a purebred herd of registered Holsteins on their 3,000-acre holding on the northerly boundary of the district, now known as Millbrae.

But for some reason the purebred enthusiasm of its founders got side-tracked in favor of commercial dairying, and as a result interest in the purebred herd simmered but did not blaze.

And then along come the general awakening in Holstein circles all over the country, and with it a realization by Manager John F. Cannon that, though their private records, which had been painstakingly kept for years, were of value for commercial dairying, they could not compete with the authenticated records of other ambitious breeders when it came to selling bulls.

Putting his decision in the matter up to the owners, Mr. Ogden Mills and Mrs. Elizabeth M. Reed, consent was given to furnish the purebred matrons on the ranch with such opportunities as other breeders were giving their animals.

The first official testing, done some two years ago, substantiated Mr. Cannon's contention, and since then several 25-pounders and better have been brought to light.

But that is only a beginning. The registered cows are to supplant the grades from now on as fast as they come in, about half of the present herd of 300 milking cows now being registered ones. And as they freshen they are to be officially tested in a modern test barn, which has just been erected.

English Shires.—Within walking distance of Millbrae, but surrounded by more natural and artificial scenery, you find the purebred germ working on a different branch of the livestock tree.

Here it is the breeding of Shire horses, under the tutorage of Messrs. Easton and Ward, that is furnishing a school in animal husbandry for surrounding home owners. Already the stud is recognized as one of, if not the largest Shire stud in the West, and its winnings at the Exposition livestock show established its claim for superior merit.

It is Manager Ward's ambition to have, in the Blackhawk Stock Farm's stud, only animals with clean limbs, having a minimum of hair instead of the highly-touted feathered legs of English favor. This, he believes, means the success of the Shire in this country, and with means in abundance to carry on the work of breeding for this type, the destinies of the Shire would seem to be in good hands. Surely in a branch of live stock breeding requiring capital to operate on a large scale, no more appropriate place could be selected than in the immediate vicinity of the Blackhawk Stock Farm.

Ayrshires at Summit.—But the Peninsula's livestock eggs are not all being put in one basket, nor are they being centered in one particular spot. You soon find this out when you begin a steady ascent to the Steybrae herd of Ayrshires, the home of which is situated on the crest of the mountain range which divides millionaire homes from the artichoke fields.

It is an appropriate place for the establishing of a purebred herd of these mountain cattle, and E. B. McFarland and son are enthusiasts at the business. They are awake to the opportunities of progressive dairy practices and are transforming dilapidated buildings into modern and sanitary dairy buildings, and the entire 700 acres is to be farmed for the cattle.

Their herd now totals some 70 head, the foundation of which has been purchased from the most famous herds in Canada and the East, as well as from the Clise herd in the Northwest.

It is the ambition of the owners to eventually carry about 250 head on the ranch, furthering the cause of the Ayrshire breed in California by maintaining a large herd of high-producing animals.

(Continued on page 432.)

Strawberries Evergreen and Everbearing.

In this article Mr. Etter concludes his sketch of the striking new varieties originated by him of which earlier portions appeared in our issues of March 4 and March 18.

[Written for Pacific Rural Press by Albert F. Etter, Ettersburg, Cal.]

More About the Trebla.—Recurring to the Trebla strawberry discussed in the Pacific Rural Press of March 4, we will now consider the prodigy of productiveness of many-sided ancestry that is with all its inheritance breaking away into a constellation of its own, the Trebla. This plant boasts of blood from the old Sharpless, and the Parry, popular twenty years ago; the Michel's Early from Arkansas; the Peruvian beach or sand strawberry brought to Eureka by Capt. Cousins between 30 and 40 years ago, from Callao, Peru; the little wildwood strawberry, common to the Coast hills from southern California to Washington; the beach strawberry from Devil's Gate near Cape Mendocino; and the Alpine strawberry from Europe. Here we have a strawberry with seven distinct types in its ancestry, but with no inclination to follow any one of them, but with prepotency to form a family of its own. There is no mistaking a bed of its seedlings, for they bear the impress of the Trebla type.

Trebla, in plant, does not look like any other strawberry I ever produced; and, though seven times a mongrel, when mated with another variety, it will impress the Treblar characteristics like a Berkshire does his.

A True Evergreen.—The ordinary strawberry has but one set of foliage in a year; the secondary foliage is only rudimentary, and is quite dormant all winter. The spring foliage of Trebla dries in July and its place is taken by an entirely new set of nice green foliage which is carried in all its verdant green through the storms of winter. Defying rain, frosts, and snow, they continue to perform their function until about the first of May. The runners likewise furnish sap to their growing sets up to the time they are in full blossom in May, while the ordinary varieties shut off all nourishment to their sets as early as the middle of November. The spring foliage begins to show up through the winter in February or March, according to the weather, and by May 1, there is a veritable second story of foliage on the plants, all standing, abundant, majestic, and erect above the old.

The blossoms of Trebla are borne on the long trusses that stand erect, but beneath the foliage, which effectually conceals the blossoms from view and affords considerable protection from light frosts. The blossoms are on slender stems, and they are so numerous that they become tangled with the leaf stalks, and with the additional protection of the drying winter foliage beneath, few berries are able to come in contact with the ground. However, if we get three scorching hot days just as the berries are maturing, like we got last June, it goes hard with the Trebla in all her glory. Then the plant is under its great strain in maturing an unseeming amount of fruit spread out on the ground; and, of course, the sun injures the previously unexposed berries, but still they do not sunburn as readily as the ordinary sorts. But after all, why should I worry if mamma Trebla can't stand such a trial of heat? She has two or three daughters who can.

Everbearing Activity.—A remarkable thing is the size and development of the runner sets by spring. Nourished by the mother plant all winter and spring, they develop as no ordinary variety possibly can. Think of a plant nourishing 30 sets up to the time the blossoms begin to appear on the sets, and then turning in and producing three quarts of berries without the husks. Fifteen plants did this stunt and that means that they produced at the rate of 25,000 quarts of berries per acre. Can you doubt, with their energy conserved, they are capable of producing at the rate of 40,000 quarts per acre, or at the rate of better than 20 tons of delicious strawberries, enough to stagger the imagination?

The fruit is of medium size and slightly rough rather than smooth, with depressed seeds. It is very solid, heavy, firm, and built all in one piece. It picks readily without the husk, and the color is red to very red and glistening. When canned, the juice is almost as red as Loganberry juice and will not perceptibly fade when exposed to the light for a year. The fresh berries will stain the fingers of the pickers like Loganberries and it will not wash off with soap. The fruit is just moderately acid, has splendid body, and is a good dessert berry with a refreshing flavor of its own. No amount of boiling will break Trebla up, the cooked berries being rich red and having a flavor second to nothing I have yet produced.

After maturing their crop of berries as best they could last June, after the unreasonably hot spell of weather, the plants took on their new summer crop of foliage, and went to bearing once more. Our last shower of the season was near the end of May, no further rain falling for nearly five months; yet through all this long dry spell Trebla (and No. 335) kept right on bearing rather nice, plump berries.

The everbearing Americus, Productive, and Progressive tried to bear also; but their fruit was seedy, rank flavored, and unpalatable. On the same ground potatoes and sweet corn both suffered so severely from the heat and lack of moisture that the potatoes were scarcely worth digging, and the corn was a failure.

Here, then, you have a truthful portrayal of the Trebla strawberry, which I firmly believe is the opening gateway to a wonderful new family of strawberries. To my mind, it marks a distinct type, and a breaking away from the hereditary type; a moving out into a field where the laws of heredity that govern plant life will have less sway over the offspring, and we will get new qualities in texture and flavors that were quite beyond us heretofore.

Offspring of Trebla.—Two seedlings of Trebla from seed taken from its first berries in the seedling patch are very unusual. One is a very large berry of No. 80 type, but much firmer; the other is a deep, dark green, leathery foliaged plant,

(Continued on page 416.)

Cured or Processed Prunes.

To the Editor: Pomona Grange of Santa Clara Co. requested that this be published. Colonel Weinstock's suggestion that the State should have inspectors to examine the packed prunes and guarantee them as up to standard, would be valuable if it could be carried out. But of that, I see no prospect. The prunes when now packed by the packers are in reality processed in such a way that they are cooked and if placed in hermetically sealed packages would keep, but otherwise they are perishable and will not keep long. An inspection before being processed even though perfectly satisfactory, and stamped with the State seal, could really mean nothing, as the processing renders the fruit perishable. To send such prunes East with the State label, and then have them go bad and be mouldy, would harm instead of help, and would go against all laws of advertising.

This uncertain quality of goods packed would also prove a barrier against selling at auction. Unfortunately, prunes are not considered a necessity of diet, though highly valued both as a fruit and for their medicinal qualities. Therefore, perfect curing and no processing is absolutely necessary for any market organization to be successful. We need middlemen and packers, but we should work to force all processing to be done near the Eastern centers, and as ordered, instead of being done here. Properly cured prunes, not processed, keep for a long time.

If perfectly cured prunes were inspected and received the State stamp, and were sent loose in large boxes to various centers in the United States, and there processed and packed as ordered, then we would never have mouldy prunes and could build up confidence and a widespread partiality for our prunes rather than those of other counties. The packers themselves understand how to do this, for they send a quantity of the largest and finest prunes to France in perfect condition and without any processing—merely well-cured and sterilized. These are then stuffed, which, to be sure, is equal to processing, but they are glaced, which has the same effect as hermetically sealing them.

What we ought to work for is to do away with packing here and have all packing done at the point of consumption.

That the packers have faith in prunes is proven from the fact that they are buying and planting large prune orchards. This also puts the grower more than ever into their hands and is but an added reason for a combination and working plan of growers, such as I have suggested. If an organization started in a small way to pack near the point of consumption, packing here would soon be discontinued by the packers, who would rapidly be forced to follow the example of the growers' organization, backed by the State.

Sivert H. Shelley, C. E.

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For and Against Tree Records.

[Written for Pacific Rural Press.]

Two outstanding examples of citrus individual tree records on a commercial scale are J. S. Edwards of East Highlands, who knows the production of each of 40,000 trees, and the National Orange Co. of Riverside, whose individual records cover 65,000 trees.

This would seem like a formidable undertaking, but Frank Chase of the latter company says that the new economies, inaugurated on account of tree record keeping, largely offset the cost. An example of these economies is that pickers set the fruit from each tree beside it and go on picking. The wagon loader carries the fruit to the drive. One man per picking gang takes records, not only of yield, but of abnormal conditions of the trees and fruit.

Temporary Causes of Low Yield.—J. C. Perry, who has charge of the Edwards ranch, notes that the value of tree records may often be seriously affected by wholly temporary causes: that only the average of a series of years will show whether it is the nature of the tree in that location to bear light crops or coarse fruits, etc.

The past season was one of irregular bloom in these orchards according to Mr. Perry. When a blossom opens a day or a week before another blossom, each may equal the other in possibilities, but one may encounter unfavorable weather that particular season and show up poorly on the records.

Wet weather last season caught many of the blossoms; the petals molded, died, and dried. When they fell, the fruit fell with them. Fruit seemed to stick, where petals had fallen before wet weather. Neighboring trees bloomed at different periods. But favorable weather next year might be reversed—and anyway, the light crop this year would favor a heavier crop next year.

Which trees lost their fruit this season by such conditions, and which are naturally unfruitful, is not known; so this season's records alone would prove very little. The same is more or less true of any other season. A considerable number of consecutive seasons' records would be fairly conclusive. Logical record keeping would have to be extended to cover conditions at least of each well-defined group of trees throughout the year.

Where the records are kept with the idea of checking up the results of experiments in fertilizing, irrigating, mulching, pruning, etc., only several seasons' records would fairly prove the superiority of one system over another.

First Records Suggestive.—But the first year's record would in any event be rich in suggestions.

If an irregular patch of trees show poor results it is a tip to the wide-awake grower to investigate. If the trees have had the same cultural treatment as the rest, a soil auger may reveal hardpan, sandy subsoil, chalk, etc.; litmus paper may reveal lack of lime; digging may show a water-logged or unexpectedly dry condition; or a simple surface survey may show lack of drainage, or a leaching of fertility; or the records may suggest the seriousness of soil erosion where cover crops do not protect it during the winter.

Abnormal Trees Located.—One of the main economies found by Mr. Perry is that the record keeper notes gummed and scaly-bark trees, those which are affected seriously with scales, red spiders, etc. On reporting such trees to the office at night, immediate measures may be taken to control the pest before it spreads. In case of diseased trees, a man may be sent whenever convenient later on, directly to the trees needing treatment, without loss of time hunting for them or uncertainty as to having found the right ones.

A record showing coarse fruit, perhaps of the Australian type, would enable a man to go direct to the tree later and bud it over. A note showing general sickness would be a cue for early careful investigation.

Extra good fruit is also noted on Mr. Perry's records. This may be of great value in years to come, for many orchards may as well be propagated from such trees as from those bearing poorer quality. Fruit may also be picked from such trees for such lots, such as exhibitions or for use in opening new markets for a certain brand. With records, there need be no delay in locating the right trees.

The objection that a box at each tree must be left only partly full is met by D. Rycraft of the National Orange Co., who simply empties the partly filled boxes—carefully—into others when they are carried to the drive to be loaded and hauled to the packing house.

Their man weighing fruit kept records on lemons one year for fumigation, by noticing the red scales on the fruit. One man there keeps records for 30 to 35 pickers, while the record keeper for Mr. Perry handles about 50 pickers.

Systematic Tree Numbering.—Mr. Perry suggests that there must be a system in numbering the trees. Perhaps the best way is to put the block number and the row number on the upper tree of each row; then put the row and the tree numbers on each tree consecutively in the direction the water runs. White lead and boiled linseed oil without a drier are used.

A camel's hair brush was found too fine and soft for speed. A marking brush such as stores use on boxes works well on the Edwards orchard.

Wide lines to make the figures are not desirable, especially on small trees. Finer lines are as visible, because one must get close to the tree anyway. It was only after several thousand had been marked that it was found that the round marking brush could be trimmed down to a fine point with scissors by holding the bristles tightly between the fingers.

Mrs. Anna Todd has recently completed the planting of 20 acres of her land near Live Oak to Thompson Seedless grapes.

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CALIFORNIA LEADS IN BARLEY PRODUCTION.

By George Robertson, State Statistician.

IN CEREALS California leads in the production of barley over every other state in the union, and the total exports of his grain also shows a large increase both in quantity and value. In 1913 the total quantity exported amounted to 12,782,000 bushels, valued at $7,882,000; in 1914, when the first effects of the war were being felt, the amount increased to 18,208,000 bushels, valued at $11,183,000; but last year to December 31, the amount made a still larger gain, viz.: to 26,490,000 bushels of value of $19,312,000, which is another illustration of the benefit that the European war has been to the farmer.

The quantity and value of dried beans and peas, which are also one of the leading products of California, show a record increase, the value of the exports in 1913 being $909,000; in 1914, $1,795,000; increasing in 1915 to $4,692,000.

How Blasting Soil Can Harm Trees.

[Written for Pacific Rural Press.]

A news item recently told about the loss of trees in the orchard of J. G. Williams, of Santa Barbara county. Here a hardpan of a sandy nature was blasted and the trees set immediately, with the result that during the next two years practically all of them died.

This is not a new story, and the reason for the death of the trees has been studied and understood in a lot of examples. The trouble first of all is improper blasting, and this is aided by poor planting. In sandy hardpan, and in clay, the effect of an explosion, particularly of the ordinary dynamites, is very much localized. If the charges are placed a little too deep, and are the least bit too heavy, the result of the blast is a cavity underground, beyond the reach of the shovels of the tree planters. Even where the charge actually blows out a crater, or hole, for the tree (which is exceedingly bad practice), there is likely to be a cavity underground.

In this type of soil, where the hardpan or clay usually is thick enough to resist the efforts of the explosive to break through to a lower and looser layer beneath, to set one charge off just where each tree is to stand invites a puddle or well of water under the roots. The explosive merely provides a loosened space in the ground, which acts as a reservoir, and holds water from the rainy season like a buried tub. This excess of standing water of course means a dead tree.

Proper blasting in such soil consists in using very light charges close enough together so that their effects overlap, and at least along the lines of the rows of trees. One man used two ounces of powder every five feet one way between the trees, and three ounces every ten feet the other way. This man blasts his tree beds with five charges instead of one, placing one where the tree is to stand and the other four about that spot and five feet away. The charges should be placed, as a rule, twenty to thirty inches deep. In rare cases they should go thirty inches or deeper. The depth and the amount of powder to use depends on the effects noted, which should be to heave the ground, but not to throw it into the air. A little dust will fly, but very little dirt, if any, should be observed above the blast. Proper blasting for trees will raise the surface of the soil about four inches. The ground must be dry when the blasting is done. Death of trees and positive damage to the soil surely will result from blasting when the ground is wet.

Proper planting in such circumstances is not different from proper planting elsewhere, but emphasis should be placed on making the soil tight about the roots. Good planting practice will see that the ground in the bottom of the hole is fairly solid—not compacted, but without cavities. Then, when the trees are set, the ground will be tramped and evenly pounded about the roots. It cannot be made too tight. It is probable that Mr. Williams did not do this in his Santa Barbara orchard. If he had, the trees never would have settled the second year as much as is reported.

In hardpan and stiff clay soils the trees never will do much without blasting, but the blasting must be done in ways that experience has shown to be right. The things to avoid are heavy charges, deeply placed charges, and blasting only where the trees are to stand, without breaking up the hard ground between the trees. Several small charges always are better than one heavy charge. The different explosions must connect and overlap in order to give the water in the ground a chance to spread about and move off.

As a result of the activity in army circles on account of the Mexican situation, buyers of horses for the U. S. Army have been in the country the past few days in search of suitable army horses. Just how many horses will be purchased for this trade is not given out, but at least one large San Francisco dealer is scouring the Sacramento and upper San Joaquin valleys.



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Standardizing Local Associations.

[Written for Pacific Rural Press.]

The greatest increase in membership made by the Cal. Fruit Growers' Exchange in any one of the past ten years, has been made since the Exchange field department was organized," says G. Harold Powell. "The department has been the direct means of getting 2000 acres signed up. Between 2500 and 3000 cars of outside fruit have come into the Exchange this year"

Increased number of local associations and of individual members is only one of several activities of the field department as given us by Mr. Powell in the absence of its manager, B. B. Pratt.

The advertised Sunkist and Red Ball brands of the Exchange have been packed by a large number of widely scattered Associations. Rules for exclusion of improper fruit have been supplied, but judgment in applying those rules varies as widely as the men who apply them. To get more uniformity in the grading of fruit packed under these brands is one big job for the department.

The decay which caused loss of as much as $50,000 a week to California growers last spring had been proved to be practically all preventable by careful handling, long before that season. Yet the careless handling proceeds. The department is demonstrating careful methods.

Much of that decay, as well as uneconomical packing, has been due to poor packing-house equipment. Mr. Pratt, through his assistants, F. G. Webber and W. G. Mumper for orange work, and G. W. Hosford for lemon work, has been helping local associations to plan and install the most desirable equipment.

Methods of keeping accounts in various associations have varied, and some of them have not been as easily understood by grower members as was desirable. Standardizing the bookkeeping of the associations is part of the field department's work, which goes along with aid in developing better methods of handling each organization's business.

The department is meeting the heartiest co-operation of the growers.

GEORGE HAD BETTER DO IT.

To the Editor: At a meeting of the Contra Costa County Fruit Growers' Association held at Concord, Contra Costa Co., Cal., on March 11th, 1916, the following resolution was unanimously adopted:

Whereas, the annual production of fruit constitutes one of California's principal sources of revenue, and whereas, the fruit growers of California already sustained an untold loss by the blockade of certain European countries, and whereas, Great Britain has placed an embargo upon canned and dried fruits which if carried into effect will bring ruin to numbers of fruit growers, thereby adversely affecting every citizen of California, and whereas, when disaster faced the cotton growers of the South, our Federal Government rightfully came to their assistance;

Therefore be it resolved, that we, fruit growers of Contra Costa county, in meeting assembled, do respectfully request that you use your best and every effort to have every arm of our Federal Government come to our assistance in this crisis, and use every measure to have Great Britain rescind this embargo which so surely means ruin to great numbers of our citizens. **T. H. Hook**, Secretary.

Concord.

TALL GROWTH OF SWEET CLOVER.

To the Editor: Please inform your readers of the success of melilotus cover crop in the San Dimas district. We have an orange grove and planted our seed in October, giving it no water. It is one of the show crops in town and I have just picked, at random, one stalk that measures 5 ft. 1 inch long; the average being 4 feet and over.—W. C. D., San Dimas.

[That is good. When you get that cover crop covered in, will you not kindly tell our readers how you did it?—Eds.]

BLUEGRASS IN A LIPPIA LAWN.

To the Editor: The experience of many Californians justifies the claim that the best substitute for blue grass in the drier parts of the State is Lippia repens, a creeping lawn plant, which makes a handsome summer turf, needs little water or mowing, is unaffected by great heat, does not coarsen with age nor develop any pestlike qualities. Its only marked defect is that it stops growing with the advent of cold weather and through frost and rain becomes a dull gray green until the spring growth appears.

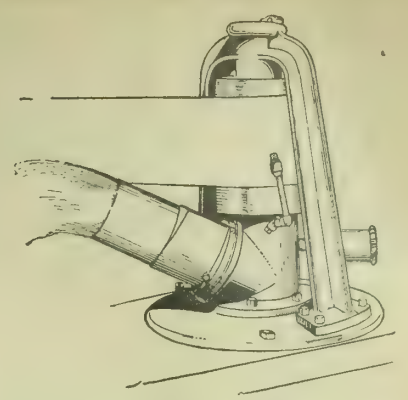
It is the writer's experience that this defect may be remedied in a very simple manner. Blue grass, which keeps green in winter in places where frosts are not too sharp, may be combined with the lippia. Bluegrass seed may be sown broadcast on a lippia lawn in March or April and washed down with rain or sprinkling. It grows well in with the lippia and keeps the lawn green through the winter.

A curious fact is that blue grass grown in lippia turf resists heat and drought far better than when grown alone. The writer has had blue grass in lippia go through a long, hot summer without a single watering and be uninjured, while blue grass alone in a nearby plot, died in July. Why lippia should foster and encourage a tender grass, while choking out and killing morning glory, as it certainly does, is one of the mysteries of plant life which sorely puzzles. **John F. Swett.**

Martinez.

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Dry Farming Peaches Successful.

[Written for Pacific Rural Press.]

Growing peaches without irrigation in the sandy land east of Ontario requires the grower to keep ahead of his work. When M. Ruznak's orchard of ten acres, Phillips and Tuscans, was seen March 2; he had recently finished a thorough job of plowing. Most of the orchards in that section were still growing weeds.

"Why do you plow so early?" we asked.

"Because the trees and fruit need every bit of moisture we can give them," said he. "We can't afford to let weeds use up a lot of the winter rains, nor can we afford to let the ground crust and the water evaporate that way. If we get more rain after plowing, we can save it by cultivating at a cost of 35 to 40 cents an acre, but we couldn't get irrigation water that cheap."

Whenever a little crust forms so that it breaks away in pieces when kicked with the feet, it is time to cultivate. This comes after every rain and often after a heavy fog.

A pike harrow is preferred at first as it drags dirt into the dead furrows. A springtooth is used if weeds get well started, which seldom happens. A weeder and mulcher is fine for the later cultivations as it does not stir up the moist soil to the top where it would dry out, but breaks up the crust and keeps a good mulch, and keeps the weeds down.

The yield of 9 tons of prime Tuscans from five acres of eight-year trees, sold to the canners without dockage last year, shows that peach growing on sandy land without irrigation can be made profitable.

STRAWBERRIES EVERGREEN AND EVERBEARING.

(Continued from page 412.)

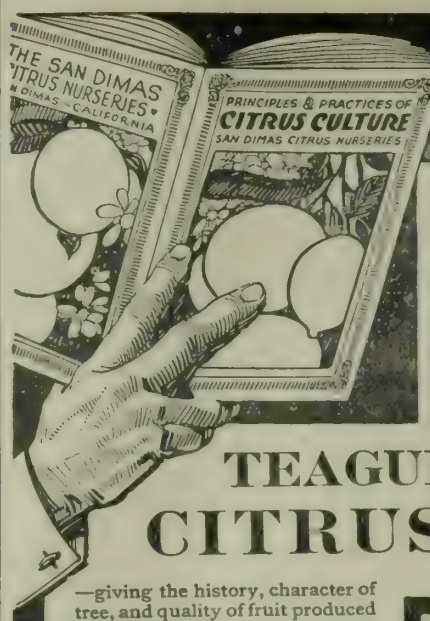
an evergreen, and deep, dark-red berries of larger size than Trebla, and the plant is remarkably vigorous. The fruit is well flavored and is protected from the sun, suffering not at all from last June's hot spell that almost put Trebla out of commission.

There are many other new varieties here that I could comment on interestingly, but just now I am considering the new open gateway leading to many more, better, and more varied manufactured products made from strawberries. That the field can be enlarged and the total manufactured product greatly increased, there can be no question of doubt. That these robust, privation-enduring, beach hybrid plants, capable of growing on impoverished soils, and thus bringing under profitable production thousands of acres of land that heretofore have been unsuited to strawberry culture, goes without saying. That the world will appreciate and consume all of this improved type of strawberry products we can produce, is hardly to be doubted. Observation here would indicate that the taste for strawberries of these improved types does not need to be acquired, and long before it begins to tire it becomes chronic and will wear year in and year out.

Another World of Possibilities—When Prof. Jos. Burtt-Davy was a member of the faculty of the University of California, he interested himself in the beach strawberries of Point Arena, Cal. Some of the seedlings he grew were distributed by the University. I was among those who received these plants. The Point Arena beach berry is different from the form indigenous to the vicinity of Cape Mendocino. Only within the last two years have I used the Point Arena variety extensively in my work. From results in a small way, I feel that we have something different to expect from the Point Arena variety than we could expect from the Cape Mendocino berry. Thus does it come to pass that every step we make opens up new possibilities. Many and varying types of these beach strawberries are found along the Pacific Coast from Alaska to Patagonia and up the coast on the eastern shore of South America. If these are going to give varying results, and no two varieties of ordinary sorts work out the same when crossed with these forms, it puzzles one to figure out how much available material exists. Personally I have given up any idea of estimating what is available, because every move worked out seems to disclose factors overlooked before.

The Beaderarena.—One of these Point Arena beach hybrids of unknown male parentage is a pink berry of extraordinary size. Another collapses when you put it in your mouth like one of those frothy flakes cooks put on cornstarch puddings. The best of all, however, is a seedling of Beaderwood crossed with Point Arena beach. It has been named Beaderarena. This variety is a realization of what I have long desired—a variety that would retain the rugged characteristics of the beach strawberry in plant, and have the quality of the common varieties. As a matter of fact, the fruit of the Beaderarena is not like the ordinary strawberry, nor is it like the beach berry, nor like any other berry I ever produced. It is of a unique, sweet, and delicious flavor all its own. The berries are large, sometimes double, and flattened. In this form I have seen them nearly three inches wide. In color they are a brilliant red or scarlet. With the characteristic gloss of the beach strawberry, and the sunken brown seeds surrounded by flesh, the berry reminds one of a product of the jeweler's art. With so much beauty and the deep-set seeds, one would naturally expect delicacy, but the berry is really firm and bears handling well. Further than this, the fruit is held clear of the ground, and the variety is productive. Rain has no effect on the ripening fruit, and our hot weather had no effect on it. It is entirely free of leaf spot, fungus, exceedingly drouth-resistant, and the runners never burn on the hot ground, as almost all other varieties do. This would seem to indicate that this is the beginning of something that will make it possible to grow strawberries on very sandy land.

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All About Sudan Grass in California.

To the Editor: Can you give me all of the available information on Sudan grass, that is: How it compares with alfalfa? How it would do in Oregon? What it is good for? How it compares with vetch and oats for hay? How it does in a semi-dry country and the number of pounds of seed needed for an acre? Also cost of seed and where it can be obtained?—H. N. O., Independence, Oregon.

[Answered by Prof. John W. Gilmore, University of California.]

[In the first place it should be stated that Sudan grass should not be depended upon under soil and climatic conditions that will produce a good crop of alfalfa, or of vetch and oat hay. Sudan grass is a valuable crop in the Pacific Coast states, as well as certain Mississippi Valley states, upon lands which are so dry that alfalfa and corn are not sure crops. Under such conditions Sudan grass ranks well with the grain sorghums and is, perhaps, all things considered, better than other forms of grasses. So far as I know, no feeding experiments have been conducted to determine the digestibility or meat-producing qualities of this grass. However, it has been noted that stock relish Sudan grass hay and eat it up about as clean as they do any other hay of bright color and good aroma. In composition Sudan grass hay is as good as the best class hay, comparing favorably with standard Timothy or Kentucky Bluegrass. It does not analyze quite so high in protein, however, as does alfalfa, and consequently is probably not so valuable as a feed as that crop, and under circumstances favorable to alfalfa it does not yield so well.

We have no experimental data bearing upon the adaptability of Sudan grass to Oregon, but there seems to be no reason why it should not grow in all parts of the Pacific Coast where there are at least four months of good growing season free from frost or cold, foggy nights. Sudan grass is very much like sorghums (it is a sorghum), requiring a warm, dry climate during the growing season.

The amount of seed required per acre varies widely according to the condition of the soil in respect to moisture and tilth at the time of planting. If these factors are reasonably satisfactory it seems that from eighteen to twenty pounds of seed per acre are quite sufficient. In our experiments twenty-five pounds of seed per acre gave no better results than twenty pounds, and on one plot fifteen pounds of seed gave as good results as twenty pounds. The seed varies in price quite widely, and is at the present somewhat more expensive than it really should be. This, however, is owing to the fact that there has been considerable demand for this variety of seed, and the prices have been somewhat high. As much as $1.00 per pound has been paid for this seed, but good seed should be secured for from $.25 to $.40 per pound. In purchasing seed one should take precautions that the Sudan grass seed is not mixed with Johnson grass seed, for the two cannot be distinguished. If the Sudan grass could be purchased from northern regions which are too cold for the propagation of Johnson grass, one would be reasonably sure of its purity. However, there are dealers even in the southern latitudes that take every precaution to supply the best Sudan grass seed.]

RIDDING THE FARM OF WEEDS.

[Editor's Note.—This is the fourth of a series of five articles on weed eradication that have been prepared by Mr. O. W. Newman, Ass't Sec'y State Commission of Horticulture and which will appear in coming issues of this paper.]

CLEANING THE FARM OF MUSTARD.

Spraying with iron sulphate is the most practical and economical method of ridding large farms of mustard and other weeds. Experiments have been conducted at several agricultural experiment stations to determine the practicability of sprays as a means of controlling this weed and the results have amply justified the work. Thousands of dollars can be saved the large grain grower by eradicating such weeds from his fields. Iron sulphate will kill or control mustard, cocklebur, ragweed, dandelion, daisies, wild lettuce, morning glory, thistles, kinghead and many other broad-leaved plants, without harming the grain in the least.

The method of preparing the solution and the application are taken from Bulletin 179, University of Wisconsin Agricultural Experiment Station, entitled "Eradication of Weeds with Iron Sulphate."

Empty 100 pounds iron sulphate into a 52 gallon cask and fill with water. Kerosene and vinegar barrels are usually gauged at 52 gallons. If tank of unknown size is used put in 1-5 iron sulphate to 4-5 water by weight—100 pounds of iron sulphate will make enough solution to treat one acre, and the sprayer should be so regulated that it will cover an acre with 52 gallons. No harm will be done if the solution is put on heavier, but the cost of material will be more.

Spray with a power sprayer, special types of which have been developed for this work. The time to spray is when mustard is about 8 to 10 inches high, that is, when nearly all the seeds have sprouted. Spray on a sunshiny day to get best results.

The ordinary orchard spraying machine can be converted into a field sprayer by connecting a cross pipe, fitted with several spray nozzles, to the outlets. The object of this is to cover a larger area. The spray should issue as a mist, and not in drops as from a sprinkler. The force is used to penetrate the hairy or waxy coating of the weed leaves and reach the vital parts of the plant.

It is good for the eyes to visit the ranch owned by H. Van Heuvel west of El Centro, where registered Percheron horses, Holstein cattle and Duroc-Jersey hogs are being raised, as well as a number of race horses.

The monthly meeting of the Napa County Livestock Association was held last week, at which time it was decided to co-operate with the Napa County Farm Bureau in holding a county fair in Napa county some time next fall.

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., March 28, 1916.

STATIONS	Rainfall Data: Past Week	Rainfall Data: Seasonal To Date	Rainfall Data: Normal To Date	Temperature Data: Max'm	Temperature Data: Min'm
Eureka	2.02	34.76	37.96	58	34
Red Bluff	.03	19.59	21.05	72	36
Sacramento	0	18.04	16.69	70	40
San Francisco	.14	27.05	19.26	64	44
San Jose	.13	16.17	14.41	68	32
Fresno	.08	11.55	8.13	70	38
Independence	0	7.16	8.00	72	
San Luis Obispo	.20	26.51	17.79	74	38
Los Angeles	.10	19.61	13.74	80	44
San Diego	.04	12.47	8.72	88	44

THE WEEK

ALL things in the sky-department of California agriculture continue favorable to the good output for 1916, which we enjoyed prophesying last week. It is true that we had a tight squeak to escape the hard frost of which the Weather Bureau gave warning a few days ago, but the Pacific Ocean was onto its beneficent job and rolled in a small storm center with lots of clouds and wind, and lightened the task of the oil-pots in covering deciduous fruits against frost, so that, so far as we have heard, no notable injury was done. The fruits are still coming on and fortunately growers are getting well waked up toward safe-guarding the sale of them. Col. Weinstock's offices have the aspect of a presidential candidate's headquarters at a national convention, with the thongs of "the faithful" reporting the steadfastness of the rural districts. We expect that the colonel will help a lot in selling our surplus products more profitably, but if he does not sell a dime's worth, beyond the seventy cents' worth of celery which he sold for a Japanese brother the other day, we can see inestimable value in his establishment as a dove-cote to which all with weary pinions can fly. For really, we believe, the fundamental secret of better things is to get together and the producers' rush for co-operative help is the best indication that they will get it. They may think the State is doing it for them, and perhaps it is. Perhaps, again, the State is only teaching people how to help themselves, and that is the grandest function of a State. No matter if there is fifty per cent more snow at some points in the Sierra than is usual at this date, and though Britain has turned a commercial shoulder which might freeze one's ears to lean upon, there is a rush of warm blood in the California producing people which gives a most healthy glow to the outlook.

QUARANTINES WITHOUT REASON.

WE ARE perhaps getting our proper pay for some of the unreasonable quarantines which we ourselves sometimes set up in the restrictions which are being enforced against us. The latest and most ridiculous of these is the Oregon attitude toward California potatoes because the tuber-moth occurs in this State. We have been swapping potatoes back and forth with Oregon for the last 65 years, and for 40 years to our knowledge (and we know not how much longer) we have had this tuber-moth abundantly in this State. And now the Oregon State Board of Horticulture has established a quarantine which practically prohibits the shipping of California potatoes into Oregon. It requires that all shipments entering the State must first go to Portland for inspection, which means that the consumer in Southern Oregon must either pay double freight to Portland and back, or do without California potatoes. The Oregon officials propose to burn all potatoes which do not pass their inspection, and we have no particular objection to that perhaps, although the injury to the potato is largely local and superficial. But the requirement that all potatoes go to Portland for inspection is from one point of view, practically exclusion and arbitrary restriction of trade. The ridiculousness of it, from another point of view, is greater than its grievance, because if Oregon has neglected her opportunity to get and rear this pest for the last 40 years and more, she is now taking the best possible way, not to keep it out, but to widely spread it. While she is hauling mothy potatoes back and forth through the State for inspection she is inviting the moth to fly ashore from boats, freight cars, or in whatever other container wormy potatoes travel, or in whatever warehouse they rest. It would be vastly more sensible to hasten the potatoes speedily and directly to the pot, and let them do as little Oregon traveling as possible. California potato-shippers are taking up the matter with the Oregon authorities. The quarantine is, however, unreasonable as well as ridiculous. If Oregon could not get the moth to live there after half a century of introduction, the lesson is that this insect does not like Oregon any better than it does other northern States.

FARMERS MUST GET MORE AND NET MORE.

AS WE stated last weeek, we propose to keep up a hubbub on this subject until something comes through or we get pulled by the police for disturbing the peace. There is no use trying to drift along as a rural pacificist, or passivist if you like that better, while everything from empires to economics is at war. Farmers must get more from the soil by better farming and must net more from what they get, by using cheaper money in production and by cheaper methods of distribution and trade. And they must do all this for themselves, because no one else either can or will do it for them. And they can do it for themselves because science, in two of its branches, natural and economic, is clearly pointing out the way. Science is hard and relentless, it is true, but everything soft seems to be going out of the world—even the brotherhood of man does its loving with hard knocks. But this is not the top-end of a sermon this time. We have to do with a single fact, out of many which show indisputably that unless the farmer does get more in the ways stated he will get less of a living—if he manages to live at all, in a business way. This single fact is that the implement makers must raise the prices of the tools and machinery they furnish. The way it is going with them is shown in a statement furnished us by the John Deere Implement Co. describing the advances in the cost of supplies used in their manufacture as a thing never before experienced in the implement business. They say:

Bar steel has already advanced 67 per cent. and the end is not yet; bar iron, 110 per cent; pig iron, 45 per cent; sheet steel, 96 per cent; naphtha, 134 per cent; scrap iron, 45 per cent; bolts of all kinds, 85 per cent; rivets, 75 per cent; nuts, 80 per cent; cotton duck, 60 per cent; fuel oil, 78 per cent; high speed tool steel, 500 per cent; high speed drills, 500 per cent; coke, 30 per cent; borax, 45 per cent.

We find that today the shop cost of making such a simple implement as a two-section drag harrow is 32.4 per cent greater than it was recently. It costs 34.5 per cent more to make a 14-inch steel beam walking plow than it did before. More than 26 per cent additional expense has to be put into an ordinary riding cultivator. And on an article like the New Deere Gang, something as staple as sugar, the shop cost has increased 29 per cent to date.

But the increased cost of implements is not the only new tax which comes upon the farmers' business of food production. Nearly everything he uses costs him more. In some lines there may have been compensation in higher produce prices, but the farmer does not get his share of that, and in many articles, he is hurt and not helped either by the war nor by recent changes in governmental policies, and he must therefore address himself to the situation with all the wisdom and co-operative force which is now becoming more clearly available.

A FARMERLESS TARIFF COMMISSION.

SPEAKING about recent changes in governmental policy not helping the farmers we are thinking, of course, of the tariff commission which all agree is likely to come out of the recent "great cry and little wool" about free trade helping the farmers. But we are not going into a tirade on that subject. We have had a very sharp illustration of the folly of making American products dependent upon foreign trade when there isn't any, instead of developing American demand for American products and watching our chances to sell to the world when we have a surplus which can be sold abroad to advantage. It seems pretty clear that we shall have next a tariff commission to see that foreign producers cannot undersell us in our own markets because they have available labor at a quarter of the wages which American standards of living require our producers to pay. But there is very grave doubt that the forthcoming tariff commission will be broadly representative of producing interests. We read this in an eastern exchange:

We have been suspicious from the beginning of the present movement for a tariff commission. We have feared that it was a scheme to put tariff tinkering into the hands of a little coterie representative of selfish interests. That our fears were justified is proved by the fact that the congressional committee, which now has the subject under advisement, is divided upon the proposition as to whether agriculture or labor should be represented upon the proposed tariff commission! So much tariff tinkering has been done regard-

ess of agriculture or labor, for these many ears, that perhaps it is not surprising that ertain congressmen of the old school should dhere to the principle that the tariff belongs o the manufacturing and commercial interests.

And there you are. We have no fear that he labor interests will not be safeguarded. o long as Samuel Gompers, one of the smooth- st advocates and most astute politicians we ver knew, sits beside the rathole in Washing- on nothing can go in or out without the roper labor scratch on it. And we are not ob- ecting to that: it simply shows where organ- zed labor is wise. But how is it with agricul- ure? As usual, agriculture has a pack of rep- esentatives of national reputation on the vatch and every time the politicians make a lash at the hole to put through something gricultural, the pack splits up and all the ittle bunches begin chasing each other—mak- ng an amusing spectacle in the public eye, but eaving the hole unguarded. Therefore we are ery sure that, while it is well to have the na- ional representatives of agriculture at Wash- ngton, it is also very desirable that individual armers and local farmers' organizations in all arts of the country should maintain direct ommunication with their own senators and epresentatives and freely communicate their wn facts and convictions as to what is good or the farming interests of the country.

WHO'S AFRAID OF PATERNALISM?

SOME people affect to be scared of pater- nalism and affect also to regard it as a hing imported from the effete monarchies of Europe—rather more effete now than usual, y the way. It occurs to us, however, that aternalism is a thing of some age even in America. We will not base a claim on the istoric fact that Washington was the "father f his country," for that tribute was previously aid to Abraham about 4000 years ago: to Akhnaton, the juiciest of the Pharoahs, about 3500 years ago, to some of the Caesars prob- bly, and was later awarded to the first of the Medicis, who may have been a good enough father for Florence but was the progenitor of rather a bad bunch of other people—a misfor- une which Washington carefully guarded against. So we do not count the begetting of a country as included in what we now under- stand as paternalism. But even so, American paternalism, involving the attitude of the gov- ernment toward the individual, is sufficiently old. For our present purpose we will assume that it began with William Penn when he had that memorable paternal pow-wow with his Indians in 1682, for it was he who undertook to fill his dependents with brotherly love, in stead of lead and whiskey, which Penn clearly saw, by the experience of his contemporary colonial fathers, had a tendency to develop destructive initiative and individualism in them. And those who are studying deeply the contemporary vexed question of paternalism vs. individualism should take note of the fact that the government of Pennsylvania is still strongly paternalistic and yet nobody is afraid of it—except when it happens to take on the modern form of bossism, for which Pennsyl- vania has also gained some repute. Our evi- dence in support of the contention that benefi- cent paternalism still exists in the land of Penn is found in a fat pamphlet, just received, in which is given a "List of Farms For Sale" —varying in price from $2.50 to $100 per acre, and does this with this paternal purpose: "To have every acre of Pennsylvania farm land occupied by the best possible farmer." It is not "state land." The farms are now owned by individuals, who are, presumably, not mak- ing profitable use of them and would like to sell out. And yet when the State of California proposed to turn idle and unprofitable lands to better farmers and better farming what a hullaballoo the individualists make about it. It was Pennsylvania, you remember, which recently raised a monument to the memory of Adam, because it was thought that his dis- tinguished service to the human race had not been adequately commemorated. Surely Pennsylvania is the place to go to study pater- nalism in America.

OUR FRUIT VARIETIES ABROAD.

WE WOULD like very much at some time to make a study of the impression the fruit-varieties originated in California have made on the commercial product in other parts of the world—but we seriously doubt if we shall ever get to it. It would naturally be based upon the catalogues of commercial nurserymen because, after you pass the few "wonders," which they offer for the delight of curious amateurs, you soon come to the lists which they make up of varieties that have been shown to be worth planting in their parishes. Taking such lists from various re- gions of the United States, Canada, Argentina, Australia and New Zealand, the Mediterranean region, South Africa, etc., one is likely to find that California has contributed largely to the varieties which they choose to build fruit in- dustries upon. Such a study would make good thesis work for a University pomological student, if carried beyond catalogues into ex- periment station reports, transactions of horticultural societies, etc. The thought comes from reading a contribution from Texas to the Fruit-Grower of Missouri, in which the Mammoth blackberry of California is men- tioned as one of the two best early varieties in Texas and of which the grower seems de- lighted to have gathered "nine berries which measured more than twelve inches over all." He also finds that his next best berry to ripen is the Jordan which he holds to be "the same as Crandall's Early for California." This in- volves another interesting pomological point because the late Dr. Crandall of Placer county believes he obtained from Texas the berry which now bears his name, because he lost the name under which he obtained it. It is up to some student to trace back that Jordan and see if it existed in Texas prior to Dr. Cran- dall's importation. It "was given to Dr. Cran- dall by a stranger hailing from Texas" some years before its offering by the late W. R. Strong & Co. of Sacramento as early as 1886. It is good fun to chase up these histories of varieties if one has the time and access to early publications.

Queries and Replies.

Querists must give name and address.

Is Tepary Doubtful as Tipperary?

To the Editor: I intend to plant 45 acres to tepary beans, but local dealers say they are poor sellers. Can any one give me some ad- vice?—G. H. W., Turlock.

We have already published all that we can find out about marketing teparies, and it is to the effect that their price relative to other beans is not yet established. They are a new thing and the trade always balks at a new thing. It has to do that, because it does not know what consumers will do about it. So far as the present impression goes it seems to be that the tepary is a poor bean as compared with small whites, which are nearest to it in size, and therefore cannot be sold at small white figures. The seed demand which has helped early growers of teparies cannot, of course, be counted upon much longer unless people take to eating the crop grown from it. Our impression is that, as things now are, 45 acres would be a good many teparies.

Rains on Fruit Blossoms.

To the Editor: Is it positively known whether a rain coming on a prune orchard in bloom just before the petals fall injures the crop or not?—Subscriber, Visalia.

It is just about as sure as anything is in this uncertain horticultural world. Frequent ob- servation has noted reduction or loss of crop under such conditions. And it applies to many other fruits than prunes. For instance, in our bunch of apricots, including six varieties, we can hardly find enough little 'cots to count, this very year, and the trees were drenched all through blooming. If all apricot trees looked like ours there would not be any for the British to exclude, but it will not be like that for we live in a rainy corner of the bay district. Though the fact is well established that rain is not good for fruit blossoms, it is not so clear why it is bad. Is the pollen just naturally washed away, or is it made too soggy to act or to fly on the air to the pistils, or does the blossom go amiss because the bees are not working? These are all reasonable conjec- tures, but we are not aware that any of them have been actually determined. Again, it is reasonable that if the rains should not come until a little interval after the blossoms open they might not interfere, because pollination is known to be ready to act at the first chance it has and rain could probably not catch up with a contact which had passed. Again, too, there is an impression that a drenching down- pour can do more harm than a light shower, that a cold rain might be worse than a warm one, etc. But these doubts do not affect the main fact which you ask for—unless you are placing emphasis on your words "just before the petals fall." We would say great harm is likely "just as soon as the petals open." Very soon after that it does not matter whether it rains or not. From that point of view the petals of a blossom are beautiful long after they have outlived their usefulness to the plant.

Killing Old Fruit Trees.

To the Editor: I wish to know of something to put around old fruit trees so as to kill them by fall.—W. P. W., Smartsville.

You can kill them by digging in rock salt or white arsenic, but they will kill the soil for a number of years. You can kill the trees without killing the soil by pouring from a quart to a gallon of gasoline (according to size of tree) against the butt so it will follow down to the main roots. But these ways still leave you the stump to grub out. The neatest way to get out as well as to kill, is to put a little dynamite under the stump in a hole made with a bar. The powder companies pub- lish pamphlets telling just how to do it.

Don't Risk Greatest River Improvements.

It seems possible that in the rush for a country-wide scheme of river improvement the completion of a great piece of work in California may be endangered.

To the Editor: The recent session of the Inland Waterways Association was held for the purpose of endorsing the Newlands Bill, so called, which proposes another National Commission, full-jewelled in every hole with salaried offices, and with authority to supersede and displace all state and local action relating to waters and floods.

The scheme is of great interest to all who are concerned in the flood control of the Sacramento and San Joaquin rivers.

The field covered by that problem has been joined in one drainage district, covering the swamp lands in the Delta and those overflowed on the banks of the streams. This drainage district is put by state law under the authority of the Reclamation Board, of seven unsalaried members, to co-operate with the U. S. engineers in carrying out a plan of flood control that is endorsed by the state and the U. S. War Department.

Nothing was done until the flood of 1909 broke the levees in nearly half the Delta, causing a loss of millions. Then the island owners met at Rio Vista and organized the San Joaquin and Sacramento River Improvement Association, with Captain A. E. Anderson as President. This body and the islanders were instrumental in raising of private funds $250,000, to buy and deed to the United States eleven miles of land on each side of the Sacramento, from Rio Vista to Collinsville, to uncork that stream by widening it to 3000 feet in order that its floods might pass out of the Rio Vista basin into Suisun bay, without flowing into the San Joaquin river by Three Mile and Georgiana sloughs and the Mokelumne river.

Supplementing this laudable self-help of the island owners, Congress and our State legislature each appropriated $400,000 to do the necessary dredging. The Sacramento on that lower reach narrowed to only 500 feet. It has now been opened on the whole stretch to 3000 feet and the good effect has been felt this winter not only at the city of Sacramento but clear to the Feather river.

A new current has appeared in the Sacramento from above Walnut Grove and the scouring out of the channel has resulted with the deepening of the stream, and but little water from the Sacramento has appeared in the San Joaquin, and no levees have been broken.

The work on this first unit of the flood control project should be promptly pushed to the mouth of Cache slough, the outlet of Yolo basin, in order that when the American river flood is thrown across the Sacramento, escaping by a weir into Yolo basin, the wider stream from Cache slough will carry it to Suisun bay, scour the river in the interest of navigation, and spare the levees.

After forty years of talk and experiment, this is the first practical work done for flood control. The effect of what has been done is so plain as to cry out for a continuance of the work.

Now the Newlands Bill will stop this work, and everything must wait for a new plan, and the money, and Federal Commission to carry it out.

The authoritative advocate, employed to push the Newlands Bill, addressed the convention. The river and Delta people desired to know the flood control plan of that measure, and sought knowledge by asking questions of this advocate. They were told first that the floods were to be reservoired. The maximum flood flow of the Sacramento is 660,000 second feet. As all attainable reservoir space in the Sacramento Valley will hold only 25 per cent of that flow, the people wanted to know what was to be done with the remaining 495,000 second feet, because a flood of 260,000 second feet destroyed their levees in 1909. They were answered that a high line canal would be built on the western slope of the Sierra to carry the Sacramento river to the lower end of the San Joaquin Valley, as a permanent supply for irrigation, and that another canal, on a lower grade, would be built to carry the floods and "fan them out," on the surface of the land in the San Joaquin Valley!

The people in that region, where irrigation has already raised the water plane, so that their problem is drainage, did not seem pleased with being fanned in that way, so when the vote was taken the Newlands Bill had 44 votes, to 41 against it. Such an endorsement may go for what it is worth. But one thing is sure, 44 people in a catch-as-catch-can convention, should have little weight as an expression of this State on a matter of such vast importance.

The Delta and river people there, and repeatedly before, asked an amendment to the Newlands Bill, excepting the Sacramento flood control project from its provisions, and this has been refused by Senator Newlands and the itinerant advocate of the measure.

Having begun something, let us finish it, and not give way to empirics, theorists or charlatans.

Oakland. Jno. P. Irish.

The Modesto Farmers' Inc. recently began the erection of a new warehouse. This organization is a co-operative association of farmers with a capital of $50,000.

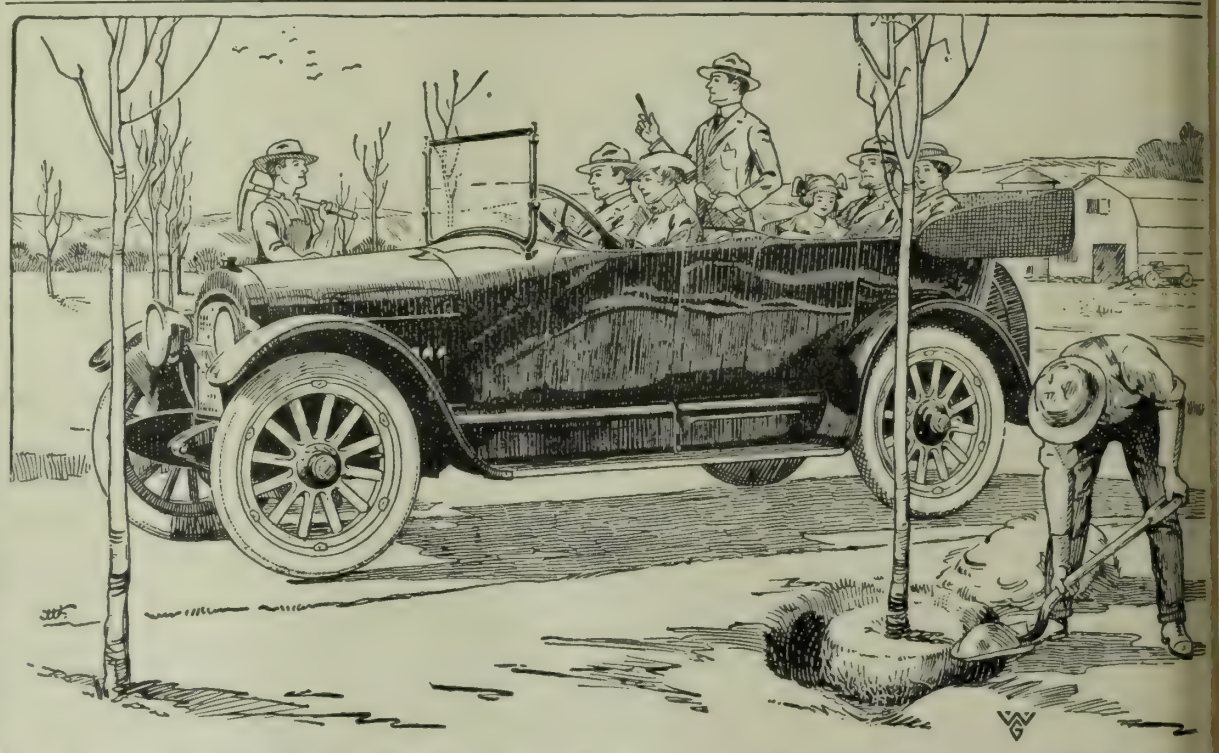
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With seven passengers can be throttled down on "high" to two miles per hour. At this "creep" one can walk alongside, raise hood and examine engine. Small bore long stroke cylinders with extra large valve ratio, combined with a perfectly balanced crank-shaft and fly-wheel, explain this extraordinary performance. A touch upon the accelerator and the car is away at a racing speed.

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From two to sixty miles an hour without gear changing, vibration, or noise. We believe the King gathers speed with greater rapidity than any other car on the market and all accelerometer tests support this opinion. Eight cylinders, aluminum pistons and large valves help make this possible. Engine gives nearly 3000 R.P.M.

HILL CLIMBING ON "HIGH"

An unperfected experimental car of this model ascended the famous three-mile twisting hill of Uniontown, Pa., on "high" with six passengers, average weight 176 lbs. Slowed down to 5 miles per hour and accelerated to 35 on steepest part of grade. With two passengers made these three miles in four minutes and forty-one seconds with full touring equipment. Starting from Denver in "high" climbed Lookout Mountain and Genesee Peak, Colorado without once shifting gears or slipping clutch.

EASE OF OPERATION—COMFORT

The ideal car for women who drive because of little gear shifting—and that little made easy. Steers without effort. Long Cantilever springs of King design give all-day trips an "easy-chair" comfort.

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KING MOTOR CAR COMPANY ::: DETROIT

What is Done for Johnson Grass in South

[Readers who have this pest in their orchards or vineyards may look sour when it is discussed as a possibly useful plant, but that is the way they treat it in Louisiana, as a bulletin just issued by the Experiment station of that state shows. They say that the grass thrives best on deep loam soil. It does not do well on poorly drained land and is a failure on poor hill soil. It is strictly a rich land crop. This agrees well with California experience and if any of our readers have it on such soil they may like to try some of these ways to make use of it.— Eds.]

Hay.—Johnson grass is primarily a hay plant. As such it is superior to any other grass in the South. The hay is greedily eaten by all hay-eating animals and is equal in feeding value to Timothy hay of like grade. It is a heavy yielder, the writer having harvested more than six tons per acre, though an average yield on good land of two to three tons per acre is satisfactory. On thin soil, or where the stand is very poor, very much smaller yields may be expected. The grass responds to good drainage, fertilization and tillage as readily as any crop grown.

Pastures.—Johnson grass cannot be recommended as a pasture grass. The tramping of stock and close grazing so weaken its growth that very little pasture can be had from it. The only way that a fair amount of grazing can be secured is to rotate pastures—graze for not more than two weeks and take stock off till the grass recovers. Then graze again.

Curing Hay.—On account of its tendency by rank growth to produce a heavy stalk, this grass is a little more difficult to cure than ordinary grass. It should be cut when most of the stalks are in bloom. If cut earlier than this the yield will be reduced, while later cutting will result in a coarser and inferior grade of hay.

Silage.—If one has a silo on the place it is advisable to cut Johnson grass with a binder and make into silage, when the weather is unsuited to hay-making. It will make silage equally as good as corn or sorghum and has the advantage of them in that red clover, vetch or alfalfa grows well with the grass and can be cut all together at the spring and early summer harvest. Such mixtures make a superior grade of feed when put in the silo together. As a soiling or green feed crop dairymen find it one of the best that can be grown.

Oats and Johnson Grass.—This is one of the best combinations of forage crops with which the writer is acquainted. The land infested with the grass should be plowed well and deep after the last cutting of hay and planted to oats in October or November. When ready to cut for grain or hay the grass will have grown to a foot or more in height. The mixture of straw and grass make a very good grade of hay after it is passed through the thresher. Two and sometimes three good cuttings of hay can be secured from the land after the oat crop is harvested. After the last cutting of hay the land should be replowed and planted again to oats. Hairy vetch can be seeded with the oats and after once being established will reseed the land in subsequent years. The vetch will add to the value of the straw as a feed, and being a legume will aid in keeping up the supply of nitrogen in the soil.

The Mississippi Experiment Station has grown this combination of crops for ten years continuously on one piece of land without any fertilizer treatment and the yields have not appreciably decreased. Published results for two years show yield of 46 and 53 bushels of oats per acre, and one and one-half and two and one-half tons of hay per acre. The crops showed a net profit per acre of more than $40 for each year.

Alfalfa and Johnson Grass.—On land adapted to the growth of alfalfa, which is already set to Johnson grass, alfalfa may be planted just as though the grass was not there. By giving the land the necessary preparation for the alfalfa there should be no trouble in securing a good catch of the crop, and the Johnson grass will not cause a loss of the stand of alfalfa, although it may be very thick and grow to the height of several feet above the alfalfa. The Johnson grass will almost disappear after the third year on heavy alfalfa land. This combination is especially good for forage production, the mixture making a hay that is superior for work stock to either one of the plants alone. More than seven tons per acre of this crop have been harvested. Johnson grass will constitute the major portion of the last three cuttings. With the heavy growth made by these crops they can be handled to advantage in the silo when the weather is unsuited to the making of hay, as has been mentioned above.

Johnson Grass and the Clovers.—Since the clovers are winter and early spring crops, they grow splendidly on Johnson grass land and die down before the season for the grass to grow. A very good practice with them is to graze the clover till about June 1 and then take the cattle off and cut the grass for hay during the remainder of the season. The grass is always much improved in the vigor of its growth by this treatment, due to the fertilizing effects of the legumes. Red clover does well with the grass and can be cut with it for hay, the two making as good a combination as Timothy and clover in the North. This combination, too, should sometimes be put in silo in preference to making hay of it. One Louisiana planter has filled his silo during the past summer with this crop.

A watery rot of citrus fruit which became serious in California last year for the first time, mostly on long stored lemons, is being studied by Prof. C. O. Smith of the University Pathological Laboratory at Whittier. Its name is Oospora citri-aranthii.

GET RID OF THE GOPHER BY USING EFFICIENT TRAPS

Mr. J. Sexton, Santa Barbara Co., Cal., says: "I have tried many gopher traps in the past 48 years in Southern California, but I find the Ideal one of the best on the market. Enclosed find check to pay for one dozen more Ideal Traps. I will distribute them to those who want to exterminate a bad pest."

Mr. John H. Lambert, Lassen Co., Cal., in reordering says: "I received the seven traps I ordered from you a few days ago. I have tried them but a little so far, but I believe that they are going to be all right. Please send by prepaid parcels post one dozen more of the Ideal Gopher Traps. Enclosed find my check."

Mr. John Munz, Los Angeles Co., Cal, says: "Send me two dozen more of the Ideal Gopher Traps. I like them better all the time."

Mr. E. L. Morey, Contra Costa Co., Cal., writes: "Enclosed you will find stamps for which please send me one of your Ideal Gopher Traps. Mr. Pigott says that the trap he bought is the best he ever saw."

Mr. Ben E. Gilmore, San Joaquin Co., Cal., writes: "I have used several different traps, but I find the Chubbuck Ideal Gopher Trap the best thing in the trap line. I caught two gophers the first afternoon I used it. I would highly recommend it to anyone in search of a gopher trap."

E. J. Chubbuck Co., Gentlemen: The gopher trap you mailed us Jan. 22d has proven a success according to one of the ranchers. He claims to have set it seven times and caught seven gophers. It is impossible for a trap to do more. * * * Express three dozen Ideal Traps at once as this is the best time to trap this pest. Expect our next order will be for one gross.—El Paso Seed Co., El Paso, Texas, Feb 11, 1916. (March 6, 1916, the El Paso Seed Co. sent in their order for one gross Ideal Traps.)



The trap guaranteed to catch small or large pocket gopher. Being round with thin edges, gopher walks into trap before detecting anything in runway. 100 per cent efficient—catches gopher every time. Far safer and surer than poisons or gas. Farmers say it's worth dozen other makes. PRICE, 50c. If your dealer can't supply you, will send it, postpaid: two traps, 95c; six traps, $2.70; twelve traps, $5.10. Money back if not satisfied. Read the letters above and below.

Mr. J. B. Burrell, Santa Clara Co., Cal., comes back this way: "Please send me six more Ideal Gopher Traps. They are far the best traps I have ever seen."

Mr. H. G. Daniels, San Bernardino Co., Cal., says: "Practically every rancher in this district is using the Ideal Gopher Trap with perfect satisfaction, and we consider the trap superior to any we have ever seen."

Mr. J. E. Thorpe, San Joaquin Co., Cal., says: "Your Ideal Gopher Trap was given a thorough trial on a huge gopher that I could not get with other traps. I used your trap as directed, and to my agreeable surprise, caught the big fellow the first time. I have used it since with equal success."

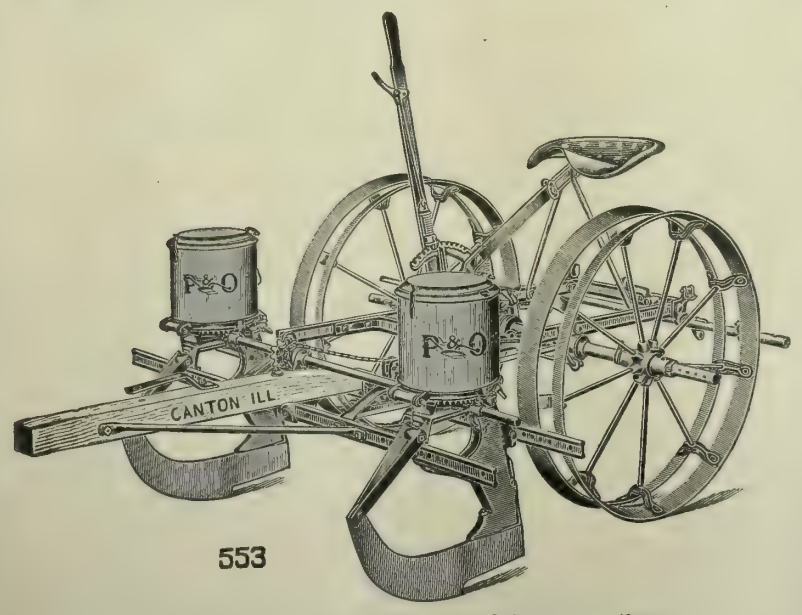
Mr. J. F. Botts, San Luis Obispo Co., Cal., says: "Herewith find order for two more Ideal Gopher Traps for my neighbor. These seem to be the proper things for the rodents."

Mr. W. N. Cummings, Orange Co., Cal.: "Enclosed find another check (supplementing the one sent Dec. 2d.) for two more of your Ideal Gopher Traps. I intend to introduce this trap to some orange growing friends at Christmas."

Mr. J. P. Atwood, Contra Costa Co., Cal., has this to say: "I am more than pleased with your traps. In about one hour after I received the traps I had the first gopher, and the next day I caught three. I can certainly recommend the Ideal. I have used several kinds, but this is the best of any."

E. J. CHUBBUCK CO., DEPT. B, 731 MARKET ST., SAN FRANCISCO, CAL.

P. & O. No. 40 Combined Corn and Bean Planter



Furnished with open center or solid concave tires.

The Combined Corn and Bean Planter here illustrated is a machine built by one of the largest manufacturers of planters in the world, particularly to meet the requirements of the Pacific Coast trade.

It is not a made-over machine but is built from the ground up for Coast needs. This fact, together with the reputation of the P. & O. Company for building tools right in every detail. insures absolute satisfaction to every user of this planter.

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FEATURES:

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Accurate planting insured by the sight feed. Sight feed has a large opening, and the seed is visible at all times to the operator as it drops from the hopper to the upper valve.

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Write for descriptive circular and address of nearest agent.

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General Agricultural Review.

CITRUS AND SEMI-TROPICAL

On March 19th orange growers of Orange Cove, Tulare county, met and formed the Orange Cove Citrus Association, electing J. Frank Wright, president; O. R. Barber, vice-president; and E. M. Sheridan, secretary-treasurer.

Two carloads of bees were recently shipped from an Ogden, Utah, apiary to Porterville, where they will be distributed among the orange groves. It is said that here is a ready market at a high price for California orange honey.

As arranged at the very successful meeting of the California Avocado Association which was held in Los Angeles in October last, another semi-annual convention of the Association and exhibit of avocado trees, fruit and products will take place in Los Angeles on Saturday, April 20th.

At a large mass meeting of the Tulare Protective Association at Lindsay, March 18, it was resolved unanimously that Tulare county stands solid for the 8-to-1 test for all oranges shipped from the county. The few dissenters, who would unfairly spoil the market for all the rest by shipping sour oranges, kept quiet, with one exception. At a previous meeting in Porterville the proposition had been made that after December 10th all fruit that was 80 per cent naturally colored might be shipped regardless of the test, but without certificate. The matter was discussed at the much larger Lindsay meeting and effectually killed, according to the Porterville Recorder. B. R. Hart of the U. S. Bureau of Chemistry told the growers that artificial coloring of immature fruit would be more vigorously prosecuted hereafter than ever before. Hobart Webster says that the League is getting growers as well as shippers to avoid sending to market immature oranges. The growers are agreeing not to ship through companies who do not observe the 8-to-1 test.

DECIDUOUS FRUITS.

The few crown galls in C. J. Oswald's peach and apricot orchard near Bakersfield are thoroughly cut out and treated with Bordeaux paste.

Wm. Roser of Colfax recently sold his 510-acre ranch near Orland to F. Laughlin of Merced county, who will plant some of the land to prunes.

This year's plantings of apples and pears in Tehachapi Valley alone are between 150 and 175 acres, according to Horticultural Inspector, L. J. Kanstein.

Nurseryman T. J. True of Lancaster says that if you plant trees already shooting out leaves, clip off the leaves one-quarter to one-half an inch from the trunk.

It is reported that the recent showers did considerable damage to the apricots of the Santa Clara Valley, as well as to the cherry and apricot crops in the Pajaro Valley.

Upwards of 125 acres of currants will fruit this year in the Tehachapi district, according to C. T. McKinnie. There are almost 1000 acres of apples and pears old enough to fruit this season.

Among the planters of about 200,000 apple, pear, almond and apricot trees in Antelope Valley the past winter are John Meader, 40 acres; Sierra Madre ranch, 7 acres; E. T. Earl, 150 acres; and D. H. Graham, 40 acres.

About 600 acres are being set out to fruit in Contra Costa county this spring, mostly to almonds, prunes, and cherries. This acreage is almost an average planting, and is scattered in small tracts over the county.

This year's fruit prospects in the Tehachapi district were blighted by a cold snow storm followed by an entire night of freezing, March 24. The harm was done because previous unseasonably hot weather had started the blossoms to opening.

According to L. H. Day, county horticultural commissioner of San Benito county, rot has seriously damaged the apricot crop of that county this season; he places an estimate on this year's crop at 40 per cent of normal.

W. H. Nixon, of the plant pathology division of the University of California, in company with County Horticultural Commissioner of Kings county, recently visited the apricot orchards of that county to investigate the reported damage by rot.

It is feared that the apricot crop of Riverside county will be a very small one this season on account of the recent hot spell. An Orange county grower estimates the apricot crop of that county at only 50 per cent of the normal crop.

A meeting of pear growers was held at Courtland on March 22, to consider the organization of a State-wide pear growers' association. The meeting was addressed by State Market Director Harris Weinstock, who urged upon the growers the necessity of such an organization.

At a recent meeting of the growers of Woodlake, Tulare county, it was decided to operate a co-operative cannery this season to handle the fruit, vegetables, and olives grown in that section. It will be known as the Woodlake Valley Co-operative Cannery, and will be affiliated with the California Growers' Association.

General Manager Vernon Campbell of the California Growers' Association recently returned from the South where he assisted in organizing locals of the Association. He has now left for Butte county to perform the same duties there; and it is hoped in time to make the efforts of the Association State-wide.

Bankers and business men of Selma recently offered to subscribe $100,000 to the California Peach Growers' Company if the company's headquarters would be established there. Now the leading citizens of Fresno (where the temporary office is located) have gotten together and will make a fight to have the office remain there.

Sometime in June, a meeting of apple growers of Humboldt county will be held for the purpose of organizing to place the industry in that county on a profitable and standardized basis. Among other things, it is proposed to have a uniform label for Humboldt county apples and otherwise put the industry on the most modern basis.

A canvass of the Beaumont-Banning district for the Peach Growers' Association is being made by A. C. Stower at the instance of J. P. Bolton, who was in Southern California last week in the interests of the Association. Mr. Bolton states that the required 75 per cent of peach acreage has been practically all signed up, but that it will take all of April to finish the $600,000 in subscriptions.

OLIVES AND NUTS.

It is reported that the Durham almond crop was seriously damaged by the frost of last Thursday night.

About 200 acres of olives will have been planted this season around Lerdo and the Kern County Land Co.'s ranch, according to Farm Adviser Carl Williams.

Shipments of walnuts are being made from Carpinteria and Goleta to eastern cities; and there now remain but two cars unshipped of the 1915 crop.

Almond is the most satisfactory root for almonds in the Belleview district of Antelope Valley, according to Fred Godde, though it is much more susceptible than peach to crown gall and root knot.

The Hemet Walnut Growers' Association, which incorporated March 13 with 225 acres signed up the night of organization, have over 500 acres signed up and have affiliated with the California Walnut Growers' Association.

He'll Make You Poor — KILL HIM



What is the use of preparing a good seed bed and planting seed that cost good money if you let squirrels and gophers eat your profits. These pests are a constant danger to crops and a constant menace to the family's health.

Carbon Bisulphide

has for over 30 years proven to be the most effective—the only sure killer of squirrels, gophers, rats, prairie dogs, ants, moles, yellow jackets, moths, weevils, lice, etc. It is easy and safe to use.

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Positively lowest prices—all sizes. Finest water pipe, well and water casing, riveted and irrigation pipe, wrought iron fence posts, etc. Big stock. Prompt shipments anywhere. Write, phone or wire for quotations.

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Bumper crops instead of stumps. Big money in place of taxes. $1,200 from 40 acres the first year—$750 in extra crops every year after. Get the catalog of the

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From Iowa

After considerable argument and debate, the Guinda Almond Growers' Association has withdrawn the local unit from the State Almond Growers' Association. The wisdom of the action remains to be seen in the selling of this year's crop.

At a recent meeting of the California Olive Association held at San Diego, grades and labels for packing olives were decided on; and after conferring with State officials, members of the Association formally declared what should constitute mature fruit, and only fruit coming up to the required standard will be bought from the growers for packing.

As a result of the action on the part of the Guinda Almond Growers' Association in withdrawing from the State Association, an opposition body was formed shortly after, to be known as the Rumsey and District Almond Growers' Association. This association will affiliate with the State Association and has for its members many growers who have never before belonged to any co-operative marketing body, as well as members of the Guinda Association who were not in favor of the withdrawal.

GRAIN AND FIELD CROPS.

Sugar beet acreage in Kern county has nearly doubled this year, to 2000 acres.

Grain in Kern and Tulare counties has fine color and is generally knee deep, good stand, and upright.

It is reported that over 2000 acres of new land will be seeded to alfalfa this month in the Oakdale district.

F. M. Barney of Hanford reports that he made his first cutting of alfalfa on March 14, an extremely early cutting for alfalfa.

The first car of asparagus shipped from the delta regions brought $4000 in New York, selling readily for $4 to $14 per dozen bunches.

Lima bean growers of Ventura county have now formally organized themselves under the name of the California Lima Bean Growers' Association, with Oxnard as the principal place of business.

The first car of green peas ever shipped from California to the Atlantic Coast was sent from Brawley recently, and was reported to have reached there safely and to have sold for good prices.

It is reported that the Turlock Melon Growers' Association is greatly pleased with the result of the association marketing of the past year. The crop comes in just at the close of the Imperial Valley crop, and dealers of New York, Boston, etc., say they will be able to do better in the way of sales this coming season.

Though soil analyses showed no need of lime, C. J. Oswald of the Kern Mesa colony has a very distinctly better growth of cabbage between two rows of a peach orchard 330 feet long where he applied 18 or 20 pounds of lime, than in the next "middle" treated otherwise exactly the same. He will lime the rest this year if he can.

The heavy, cold rain last week did considerable damage to the newly planted cantaloupes in the Turlock district; many are replanting. The rain, however, was a great benefit to the growing grain. E. W. Crow, who farms 5000 acres of the Hickman ranch, says that it will insure a big crop for the whole East San Joaquin Valley. No damage was done by the light frost throughout the county.

On account of the quarantine in Oregon practically barring the shipment of California potatoes to the northern markets, the Wholesale Potato Dealers' Association has appealed to Gov. Johnson to assist them in paving the way for a resumption of the northern business. P. E. Platt has been designated as a representative to go to Oregon and present the case to the proper authorities.

S. Spyres, who lives about six miles east of Modesto, had splendid results last season with dent corn. He averaged nearly 20 tons of corn to the acre, and says that a great many stalks had three or four large ears of corn, and some grew nearly 15 feet tall. He had cut a heavy crop of oat hay early in June, then gave the ground a good, thorough soaking. He plowed about ten inches deep and got a good seed bed. By going through the corn every week with a cultivator, he kept a good mulch on top, and succeeded in getting his corn through with one irrigation. He believes that it should be allowed to get pretty well matured before cutting

MISCELLANEOUS.

At the recent jack rabbit drive held by South San Joaquin farmers, about 4,000 rabbits met their fate.

The freeze that struck Placer county the night of March 23 did considerable damage to the fruits, strawberries, and vegetables in the lowlands. The highlands and hillsides were not hurt to any material extent. One-half inch of ice is reported in some places.

A Farmers' Institute was held on March 24 at Rolinda, Fresno county; and pruning, poultry raising, and marketing were among the subjects under discussion.

The Railroad Commission recently denied the application of the Southern Pacific Company to change the rules and regulations concerning shipments in refrigerator cars. It is claimed that had these changes been allowed it would have meant a raise in the charges from $5 to $10 per car to certain California points.

Luther Cunningham of Morgan Hill, inventor and manufacturer of the well-known and extensively used pulverizer, packer, and mulcher by that name, has transferred his business to the Spalding-Robbins Disc Plow Co. of San Francisco, who will manufacture and add same to their line of farm implements, and in future act as exclusive agents.





Van Brunt Drills
With Adjustable Gate Force Feed

THEY plant any small seed, alfalfa to bearded oats, peas or beans.

Amount sown per acre easily regulated merely by shifting feed gauge levers.

All the ground sown, because the Van Brunt adjustable gate force feed and special agitator in the hopper compel seed to leave hopper in even, continuous streams—no bunching or choking up—and an equal amount goes into each furrow.

An even stand of grain is secured, because pressure springs compel all the discs to cut furrows of even depth, and the closed delivery places seed at bottom of these furrows.

Van Brunt Drills do not clog up. Scrapers keep discs absolutely clean.

Smooth running—each wheel drives half the feeds, equally distributing the work. A direct, double, gear drive from the continuous axle.

High grade discs with bearings that are guaranteed to last lifetime of drill. Either single or double discs.

Grass seeder attachment can be furnished which will drill or sow broadcast as desired. Write us for free booklets.



John Deere Disc Plows for Tractors
For Field or Orchard

MADE especially for use in the West. Work successfully in every soil where a disc plow should be used.

Plow anywhere from five to twelve inches deep.

One-man outfits—controlled by man on the tractor. Work with any standard tractor.

Can be used either for field or orchard work simply by changing the land axle.

All levers down close to plow when at work—plow can be operated close to trees and under limbs without injuring them.

Easily transported—special lever at the rear for lifting discs high and level.

Over fifteen inches clearance under beam; twenty inches between discs.

Twenty-four or twenty-six-inch discs with chilled metal bearings—constructed so that bearings do not drag along wall of furrow when plowing deep.

Can be reduced to four discs by taking off one intermediate section and telescoping connecting rods.

Write for free booklets describing the John Deere Tractor Disc Plow No. 10 for field work and No. 11 for orchard and vineyard.



John Deere Plows for Light Tractors
For Orchards and Vineyards

PRACTICAL—one-man outfits. Work with any standard tractor. Controlled by man on the tractor.

High and Level Lift—Pull the rope and all bottoms raise high and level. Another pull lets them down. Plows do not clog or gather trash on the turn.

No levers—plows leveled and depth regulated by screw device. Can be run close to trees and vines without injuring branches.

Regular with three or four 12-inch bottoms. Quick Detachable Shares—save 80% time changing shares. Write for free booklet describing light tractor plows for orchard and vineyard, or regular field work.



John Deere Syracuse Plows
The Plows with Perfect Fitting Parts

SYRACUSE chilled shares fit perfectly—extra shares go on easily. Share draws up snugly to its place—a smooth joint formed always.

Syracuse 601 Series, wood beam, sloping landside plows are superior for general purpose work in light soils—the 16 Series, wood beam, with side shifting clevis, for hillside work.

Syracuse J-gang plows, three bottoms, are especially satisfactory for vineyard and orchard work.

Write for free booklets. Also ask about Syracuse non-cloggable spring tooth harrows.

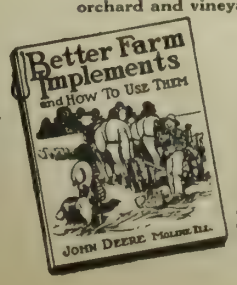


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Easily started; perfect speed control (speed can be varied 40 per cent without stopping engine). Complies with insurance regulations. Hopper cooled—a simple, efficient system that does not require long pipes and numerous fittings.

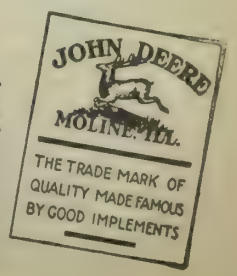
High grade throughout. Inspect the extra guard ring over piston pin to prevent possibility of scoring cylinder. Ask about the "R & V" oscillating magneto. Write for free booklet.



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BOOK FREE—168 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars. Describes and illustrates: Plows for Light Tractors; Steel and Chilled Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Lister Plows and Cultivators; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain Wagons; Teaming Gears; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders, Stackers, Sweep Rakes, Mowers, Self-Dump Sulky and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills and Seeders; Grain Binders; Corn Binders; Gasoline Engines. This book sent free to every one who states what special implements he is interested in and asks for Package No. K-152



John Deere, Moline, Illinois

Mechanical Power on the Farm.

THE SLEEVE-VALVE MOTOR.

[Written for Pacific Rural Press by W. M. Findley.]

Motor car owners and prospective motor car owners are showing great interest in the Knight type sleeve-valve motor. This is due to the fact that this type of motor has recently been adopted for use in cars of moderate price.

There are four main differences between this motor and other motors in common use. These differences consist of the valves; the shape of the combustion chamber which is spherical; the location of the spark plug directly over the piston, and the machining of all surfaces forming the combustion chamber.

The sleeve-valves, which form the distinguishing feature of this motor, are two round shells of cast iron which slide up and down between the cylinder wall and the piston—one working within the other. The explosion takes place within these sleeves. Fresh gas is admitted to the explosion chamber, and exhaust or "dead" gas is expelled, through ports or openings cut into the sleeves at opposite sides, near the top. As the sleeves slide up and down, these ports come together and large openings are formed through which gas has free and unobstructed passage into and out of the explosion chamber.

The sleeves are raised and lowered by connecting rods from an eccentric shaft that is operated from the crankshaft. The timing of the opening and closing of the valves cannot vary. Cams and springs have been entirely eliminated, consequently adjustments are never required.

Compression does not depend on the fit of the sleeves to each other and as any carbon that lodges on the sleeves makes them run more smoothly, valve grinding is never necessary.

Simplicity is an outstanding characteristic of this motor. It has no intricate small parts, and the valve mechanism is entirely confined within the motor itself.

SUBSOILING FOUR FEET DEEP.

[Written for Pacific Rural Press.]

Giant subsoilers, to loosen, drain and aerate the soil four feet deep without bringing it to the surface where it would have to weather a year before being good for crops, are being built for the American Beet Sugar Co. by the Killefer Mfg. Co. The seventh one was recently completed, to be hauled by 75 h.p. Best and Holt tractors.

The subsoil aeration is accomplished largely by a 50-pound "gopher" which is attached by chain links to the subsoiler shoe. It is a sort of conical hollow iron 15 inches long and eight inches across its base. Mr. Killefer says he has known similar "gopher" holes to remain open three years.

The subsoiler is fixed in a heavy channel-and-angle iron frame on two low broad iron wheels. The cutting blade, well over four feet long, is raised and lowered in the center of the frame behind the wheels, by a cog or cable and big hand-wheel arrangement. It is held in place and pulled by a double channel iron from its top end to the front of the frame, where it is pivoted to allow raising and lowering of the subsoiler.

On the lower end of the cutting blade is a flat toolsteel shoe 3½ inches wide and 14 inches long, which runs about horizontally through the ground and pulls the gopher. This shoe may be tilted to run deeper, level, or shallower (upward) by a wheel and cog arrangement at the top of the cutting blade.

"I believe in opening the subsoil for drainage and aeration every 12 to 25 feet," says Mr. Killefer, "for increased crops on land that is at all heavy underneath show its value; but I don't believe in plowing too deeply until the subsoil has weathered. It is usually dead and won't raise crops the first year it is turned up even in California.

Horse Tools too Light for Tractor.—"Moreover, horse tools are not good for tractors. They get torn to pieces because they are not built strong enough. We have sold 54 gang plows to the sugar companies. We tried at first to build them for $250, but they tore to pieces and we had to put heavier material in them; so that now the sugar companies are paying over twice that much and are well pleased."

TRACTOR ON PLOWED GROUND.

[Written for Pacific Rural Press.]

Pulling a double 8-foot disk over ground plowed a week before, J. B. Lash, working for Mrs. E. E. Chapman in San Fernando valley, was putting the seed bed in first-class shape for beets, using a 35-16 Sandusky round-wheel tractor.

Nearby was a man harrowing with four big mules. "I've pulled a disk and a harrow like that man is using. The tractor has been run 48 hours steady without getting the cylinder jacket very hot."

A boy had been running the day shift while Mr. Lash ran the night shift. In the month that tractor had been in the valley, Mr. Lash claims to have plowed 130 acres over 12 inches deep, disked and harrowed 140 arces, and plowed and harrowed 20 acres of grain land.

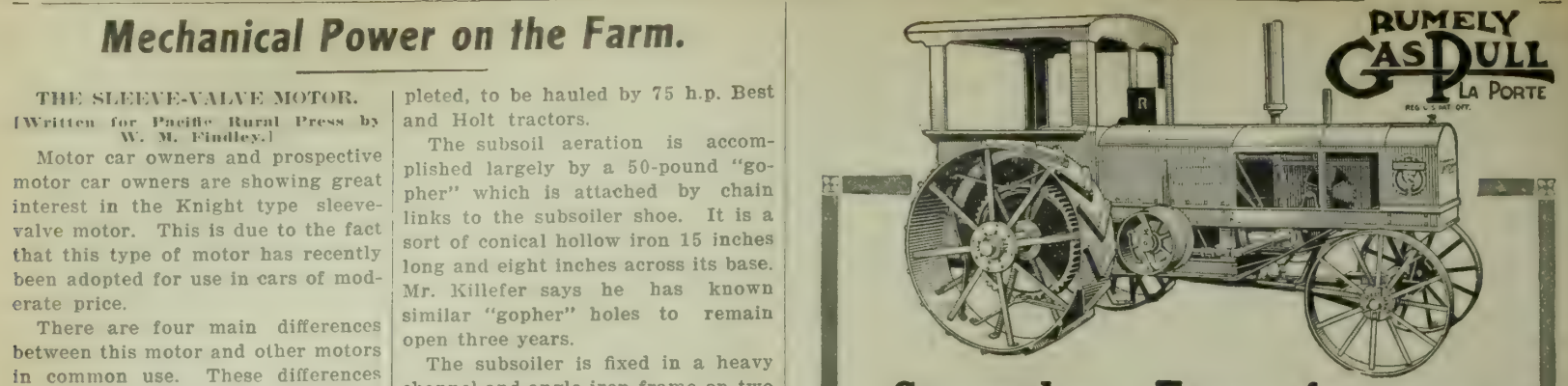
Two fourteen-inch Oliver chilled plows were run over a foot deep and a harrow was hooked on to run on the soft ground beside them so that the draft equalled three bottoms.

ROUTING RUST.

This Age of Steel has roused a world-wide battle with rust, and more chemists and other experts are studying possible weapons for this battle than are busy on almost any other industrial problem. Concrete owes much of its present growth to the difficulty of protecting steel and iron against rust.

Absolutely pure iron will not rust and fairly pure iron will rust only slowly. One way, therefore, is to improve the grade of iron; and manufacturers now sell iron that is guaranteed to withstand rust for considerable periods. It is possible, though expensive, to purify iron completely by electricity; and electrolytic iron, as it is called, may before long be common commercially.

Surface coats of protection are, however, the favorite methods of today; and many such coatings have appeared lately. The latest one is a metal coat that can be applied on an iron or steel structure after it has been erected, in much the same way that paint is applied. Finely powdered metals—such as tin, lead or zinc, or all three in proper proportion—are mixed in oil and painted



Strengthens Every Argument

ALL that can be said for tractor farming is made stronger by the GasPull. It adds handiness to power, convenience to durability, simplicity to economy. And on top of that it is low priced.

The handiness and light weight of the GasPull are big features. It weighs only 11,000 pounds and will turn on a 15-foot circle. It can be equipped for speeds from 2 to 3½ miles per hour.

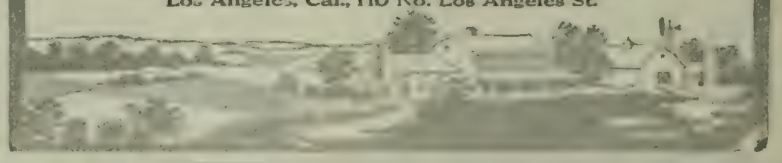
Nothing that would add to its convenience or reliability has been overlooked—all controlling levers are conveniently located and it is equipped with a safety cranking device and a dependable foot brake.

The motor is powerful and smooth running, the lubricating system is efficient, and all working parts are well protected from dirt and the weather.

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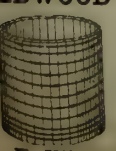
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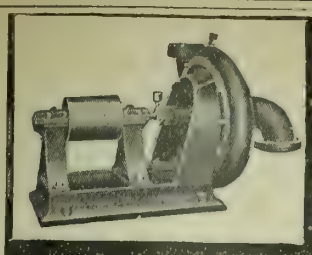
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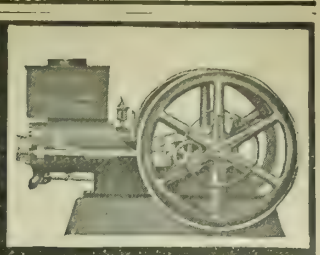


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Send for our large No. 36 Catalogue Mailed Free. GASOLINE ENGINES Inquire of your Local Dealer for full particulars.

on the bridge or column or other structure that needs protection. Then the painted surface is heated by a hand torch or in whatever way is most convenient.

The oil burns away and the powdered metal melts, but does not run. As the metal cools it takes a tight grip on the iron surface and forms a tin or alloy coat, which stops rust. —Saturday Evening Post.

AUTO RUNS HORSE CLIPPER.

[Written for Pacific Rural Press.]

An automobile horse-clipping outfit is touring the State. It was finished at Downey, Los Angeles county, recently for its designer, Art Florey.

An X-braced 1x3 frame about 4x6 feet is hung to the rear axle of a small automobile by clevises so it can be raised or lowered at will. Its rear end is held up by a heavy wire hook to the upper part of the back seat.

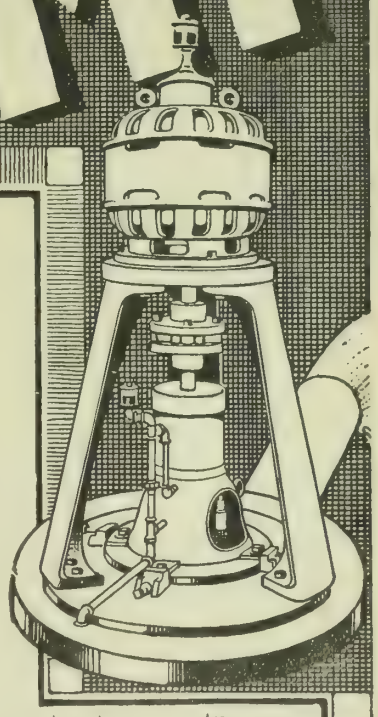
A piece of small shafting is set in loose boxings with old cam shaft bearings. On one end of the shaft and just outside the frame is a 4-inch pulley wheel. On the other end is another, and beyond this is a solid wooden contact wheel about 16 inches in diameter and on the same shaft. This is rubber-tired, using strips from an old auto tire. When the left rear wheel of the auto is jacked up and the right wheel blocked, this contact wheel is let down against the auto tire and it runs the clipping machinery. It is held against the auto wheel by two or three springs attached to the frame and to the boxing on the left end of the shaft. This boxing slides a few inches back and forth in a sort of cage on the frame. When the clippers are not in use, a lever connected by a wire to the boxing pulls against the springs and is simply hooked over a block nailed to the frame to hold the contact wheel free from the auto.

The pulleys on the shaft run small belts to similar pulleys on the outer corners of the frame. These have fixed vertical axles about 16 inches long, each of which extends downward into a flexible tube through the short piece of pipe by which they are fastened to the frame. Their lower ends are fastened to chains which extend through the tubes and run the clippers. The chains are made of steel wire of No. 8 diameter in links about 1½ inches long. The links are simply pieces of the wire with both ends bent so as to become eyelets. The tubes are canvas and rubber with a spiral metal lining and are eight or ten feet long.

Acrobatic.—Smart Young Man—"What do you think of Brown?" Indignant Old Gentleman — "Brown, sir! He is one of those people that pat you on the back before your face, and hit you in the eye behind your back!"—Tit-Bits.

California Ripe Olive Day will be celebrated this year on May 16.

Layne & Bowler PUMP



No matter whether you desire to develop only five inches of water at a very slight lift or 10,000 gallons per minute at a 1000 foot lift, we have a pump that will meet your particular requirements. Let us give you an estimate, either for installing your complete pumping system or just the pump alone.

"Let the World's largest water developers solve your pumping problems."

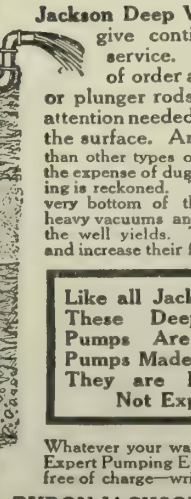
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"Jackson MADE"



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Jackson Deep Well Turbine Pumps give continuous and efficient service. They do not get out of order as they have no valves or plunger rods. Very little care or attention needed as they are oiled from the surface. Are much lower in cost than other types of deep well pumps when the expense of dug pits, cribbing and timbering is reckoned. They raise water from the very bottom of the well, thus eliminating heavy vacuums and delivering all the water the well yields. They develop slow wells and increase their flow.

Like all Jackson Made Pumps These Deep Well Turbine Pumps Are the Very Best Pumps Made for the Purpose—They are Dividend Earners, Not Expense Makers

Whatever your water problems may be our Expert Pumping Engineers will help you out free of charge—write

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California Garden Flowers, $1.50 Postpaid Pacific Rural Press

THE SUPPLY OF GRAIN BAGS.

In so far as the supply of grain bags for this year's crop of grain in California is concerned, the California farmer has no reason to worry. This is due to the fact that crops in this State are earlier than in other Pacific Coast States.

At present there are sufficient bags to take care of the California crop, consumption here being 20 to 25 million bags annually, and between the output of domestic manufacturers, the prison and supplies brought from Calcutta the required number of bags are in sight.

Although last year's consumption of bags on the Pacific Coast was exceptionally large, it cannot be used as a criterion this year, as they were used for many purposes which present high prices forbid. Moreover, estimates recently made indicate that the grain crop will be about 25 per cent less in 1916 than in 1915.

The present high prices are due to the fact that the Allies are using 50 million sacks per month, taxing the capacity of the mills.

Alfalfa Growing as a Specialty.

(Continued from page 409.)

was run over it when weeds an inch tall could be found. Mr. Woodward says a weeder and mulcher which stirs a blanket of soil while it cuts the weeds would be better.

By fall the seed bed had become firm. It was spiketoothed, the seed broadcasted and spiked in by two or three harrowings.

After it came up it seemed to stand still awhile, with only a few leaves. Plants pulled up with only four leaves revealed eight inches of roots—getting a foundation. Then it shot ahead into the astonishing first year's crop mentioned.

Irrigation and Cultivation.—"We irrigate our young alfalfa five or six times per cutting; old alfalfa needs only two irrigations per cutting because it has spread out to protect the ground more. Also the roots of old alfalfa have opened up the ground so it takes a great deal more water than young plantings," says Mr. Woodward, speaking from experience with other alfalfa, grown nearby for a decade before their present 80 was planted.

"At first the water would flow across the half-mile checks in two hours; wind and sun would have baked the surface soil—then the moisture would have evaporated and not enough would have been left to grow the crops we grow. To help avoid this, we did run a spike-tooth harrow over the alfalfa after every cutting of the first year. It cultivates the ground without uprooting alfalfa, for we need a perfect stand with no weeds."

The soil has now changed so that it remains "soft and pliable." The second year it took perhaps 10 hours to run water from one end to the other by the system used, which is described farther on in this article. He gives the alfalfa, not half the water it wants, but all it wants.

The borders grow as good a crop as the checks, because the borders are small enough for the water to soak through, and because the hay rakes give them extra cultivation.

There are four lines of steel underground pipe equidistant crosswise of the 80, and all are supplied by a line from the pump alongside the field. On each line in each check, a 10-inch heavy galvanized iron vertical outlet pipe overflows direct onto the ground. A smaller vertical pipe and faucet are provided beside the white board which locates the outlet, so the haymakers always have fresh water handy.

Beginning irrigation, the cap is taken from the outlet at the upper end of a check and the pump shoots 100 inches of water through it. A head of 50 inches by pump or reservoir should be the minimum for 33-foot checks. By the time the water has reached the next outlet below, it is opened, and being 5 feet lower, lets all the water through it. When all four sections of a check are wet and the water is near the lower end, these outlets are closed and the one at the head of the next check opened. No water is allowed to stand anywhere. It drains naturally toward the well at center of the lower end.

A cultivator was made not long ago by having the blacksmith roll the edges of four or five inches of the points of spring harrow teeth backward and pound them to a point about like a spike harrow. However, a neighbor has had pieces of curved hayrake teeth welded onto spring harrow teeth, curving forward so they dig under and ahead. This sort of a cultivator will be used next year on the Woodward ranch.

How the hay is harvested will be told elsewhere.

A TEXAN PLAN OF SUMMER SOWING ALFALFA.

To the Editor: I am much interested in your note in regard to summer seeding of alfalfa on irrigated land in the issue of March 11th. In this country we have secured excellent results by cultivating the seed in lightly, between rows of cotton, in the month of August. Cotton gives sufficient shade to justify planting in hot weather and the first frost leaves the ground practically free to the alfalfa, with the advantage of its having time to become deeply rooted before winter.

If your correspondent at Turlock does not grow cotton he might possibly find some other crop that would have these advantages and thus enjoy the benefit of very early planting. **Willard H. Denis.**

Buena Vista, Texas.

A COUNTRY LOAN DEPARTMENT.

The Savings Union Bank & Trust Co. of San Francisco is installing a country loan department, of which V. C. Bryant, formerly of the Agricultural Department of the University of California, will have charge. He assures us that it is to be the policy of the Country Loan Department to be of as much actual service to the farmers of the State as possible. Their rate of interest is seven per cent and they expect to consider any sized loan. Mr. Bryant's acquaintance with the agricultural conditions of the State makes him especially well fitted for his new undertaking. He states that his principal problem is to get before the farmers of the State the fact that a country loan department is coming into existence.

An active campaign is being carried on in Fresno county for the purpose of securing a farm adviser. Meetings are being held at all points where it is probable bureaus will be located.

Mr. V. C. Bryant of the Savings Union Bank and Trust Company of San Francisco, formerly with the Agricultural Department of the University of California, expects to visit the various agricultural localities of the state, in connection with his new duties, for the purpose of determining loaning values.

Anyone desiring information as to when he will be in any particular locality should address him, care of The Savings Union Bank and Trust Company of San Francisco.

Classified Advertisements.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

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ORDER YOUR PRINTING NOW before prices are raised; paper is advancing and printing will soon cost you more; get my prices and save money. Mail orders a specialty. G. C. Gallagher, The Service Printer, 309 Battery St., S. F.

FOR SALE—10 head young, well-broken mules, average weight about 1100 lbs. For particulars enquire Valley Farm & Stock Co., 149 New Montgomery St., San Francisco. Phone Kearny 2735.

FOR SALE—Used Ranch Tools, Windmills, pumps, engines, new galvanized tanks; 1000, $22.50; 2000 $32 50; guaranteed. Save half. Demmitt Company, 120 North Main, Los Angeles.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds $3.00 delivered. Order with remittance. WM. J. SCHMIDT, CO., 112-B Market St., San Francisco.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHELTER PIPE WORKS, 306-8 Howard St., San Francisco.

APPLES!—Buy direct from producer. Newtowns, 90c; Bulk pack, 4 and 4½ tiers, equal proportion. No 2 grade for cooking, 65c. In 5 box lots 70c and 50c per box. Edwd. A. Hall, Watsonville, Cal.

IRRIGATION EQUIPMENT—For pumps, oil engines, gas engines, friction clutch pulleys, etc., write us. We can save you money. Commercial Iron Works, 481-497 Fifth St., San Francisco.

CONCRETE MIXERS—2 brand-new mixers at manufacturers prices. Write at once. Commercial Iron Works, 481-497 Fifth St., San Francisco.

ONE 45 H. P. and one 20 H. P. I. H. C. traction engine for sale, cheap. Will trade for stock. B. T. Brewster, Box 466, Davis, Cal.

TREES AND PLANTS.

WALNUT TREES — Late blight-resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California black root as the California black root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

30,000 CITRUS TREES—Navels and Valencias—27½c. delivered at your depot, anywhere in California, packed in moss, bare root lots of 500 and up; or 37½c in 35-lb balls in 10-acre plantings. All big two-year-old stock; choicest ever produced by anybody, anywhere, at any price. Samples sent free on request. Lem A. Brunson, 1120 Haas Bldg., Los Angeles. Phone F 4003.

EUREKA WALNUTS ARE THE BEST.—Grafted on native black roots. Our prices will surprise you. Write today—tomorrow never comes. Gever Bros., Walnut Nursery, 214 S. Alamansor St., Alhambra, Cal.

FOR SALE—Spineless Cactus Plants. Prices right. B. C. Engbert, Byron, Cal.

FRUIT AND ORNAMENTAL TREES and all kinds nursery stock, especially suited to Central and Southern California conditions. Buy from a responsible firm. Lawn Nurseries, Box 418, Sacramento.

WILLSON'S WONDER and genuine Franquette trees; grafting wood for sale. Write for circular and price. Encinal Nurseries, F. C. Willson, Prop., Sunnyvale, Santa Clara County, Cal.

NURSERY STOCK—None better. 2-year-old Navel, Valencias and Lemons, ⅝ and up, 25c, balled and packed in moss. Ask for prices on carload lots. J. Johnson, Azusa, Cal.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, better lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

GRAFTED ENGLISH WALNUTS—A few hundred vigorous trees. Two-year-old California Black Walnut roots, one year Concord Walnut graft. Bishop Bros., San Ramon, Cal.

HUSKY TOMATO PLANTS—"Stone" twice transplanted, 5 inch, $1.00 per hundred postpaid. J. F. Swett, Martines, Cal.

SWEET POTATO PLANTS for April and May delivery. California Yams, $2.25 per thousand, 35c per hundred, prepaid. J. Braswell, R. D. No. 2, Lindsay, Cal.

SELECT LOCKEFORD BURBANK—Rural and American Wonder Seed Potatoes. $1.50 per 100. N. H. Lockeford Co., Lockeford, Cal.

FOR SALE—Orange trees from selected two-year-old stock. K. Matsuoka, one mile west of Sanger, Cal.

SEEDS AND BULBS.

CALIFORNIA GROWN SUDAN GRASS SEED—Absolutely free from Johnson Grass or other Weed seed. Price all you can of it; for Broody Chicks and laying Hens stock of any kind you can't beat it. 30 cents per Write for prices on large lots. Lasher's Hatchery, Pot Loma, Calif.

WE BUY ALFALFA SEED containing Dodder, Mustard and other noxious seeds. Send us samples of any bin or low grade seed you may have; also of mustard, bur and sour clover seed, flax, etc. Signed Mercantile & Warehouse Co., Fifth and Poplar Streets, Oakland, Cal.

SEED BEANS—We have choice Red Mexican and Blackeyes grown on sandy land producing a heavy crop. Well cleaned and in good order. Write for prices. THE GRANGE COMPANY, Modesto, California.

SUDAN GRASS SEED—Pure, recleaned, field inspected, officially tested: 10 lbs., $1.50; 25 lbs., $3.00; 50 lbs., $5.00; 100 lbs., $8.00. Satisfaction or money back. B. E. Miller, Carlton, Tex.

SEED BEANS—White Tepary Beans grow without irrigation. 600 to 800 pounds per acre. Write for sample and prices. Robert A. Read, Grower, Delano, Cal.

FOR SALE 300,000 yellow Jersey sweet potato plants. Prices from $2 to 50c per thousand. For information, write Parker Bros., Hemet, Cal.

TEPARY BEAN SEED—Recleaned A No. 1 seed. No better on the market. Also Sudan Grass seed; guaranteed pure. Carl Nelson, Strathmore, Cal.

TEPARY BEANS FOR SALE—Eight cents per pound. Robert Paulsen, Lockewood, Cal.

WANTED.

WANTED—Responsible Representative. 12 tools in 1. Sell to farmers, teamsters, contractors, etc. Lifts tons, hoists, stretches wire, pulls posts. Many other uses. Free sample to active agents. One agent's profit $45 in one day. Another $1000 in Dec. We start you. Write for Big Color Plate. Secure exclusive sale. HARRAH MFG. CO., Box 31, Bloomfield, Ind.

WANTED About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. E. Humphrey, Principal, Stockton, Cal., Box 704.

MARRIED MAN with University agricultural education wishes position on farm to get practical experience in farm work. Wife will assist housewife. If desired will teach children or adults in violin and piano playing. German nationality. Prefer family treatment rather than high wages. Please answer Box 215, Pacific Rural Press.

EXPERIENCED SWISS DAIRYMAN, married, with some help, wants to take charge of dairy 30 to 50 cows. Either on shares or wages. Box 213, Pacific Rural Press.

EXPERIENCED DAIRYMAN, married, wants to take charge of dairy, either on shares or wages. J. J. R., Box 22, College City, Colusa Co., Cal.

ORCHARDIST—Elderly man, single, wants position in drying yard or other orchard work. Thoroughly competent to take charge. Box 214, P. R. P.

LAND FOR SALE

FOR SALE—$3500; will sacrifice 160 acres adjoining my home place where I have 75 acres young orchard bearing heavily this year; need proper buildings, dryer trays, etc., to handle crop. Has house, fencing, well, living springs, family orchard, vineyard, abundance rain, fine climate, country rapidly advancing. Nine acres adjoining produced $2600 last year. $2200 this year; ideal for almonds, prunes, etc.; cash talks with me now; absolutely no trade. Carl Dewlaney, Santa Magarita, San Luis Obispo county.

FOR SALE—On account of having land in another State that needs my attention, I will sell my 50-acre dairy ranch located 3½ miles from Modesto, the county seat. Ranch consists of cow barn 64x100, silo, horse barn, 5-room house and other buildings. This place must be seen to be appreciated. Will take back mortgage at 6 per cent for 5 years. Save commission by buying from owner. Write or call or further particulars. D. F. Conant, owner, Route B, Box 231, Modesto, Cal.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property. Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

116 ACRES AT GRIDLEY, CAL.—All in alfalfa. Abundance of water and shade trees. Splendidly drained. Good improvements. Absolutely right and high-class. Owner, Paul Goodloe, Route 13, box 28, Cupertino, Cal.

WILL EXCHANGE $525 equity in Richmond annex lot. Want cows, stock cattle, hogs, sheep or automobile. Write, Box 45, R. R. No. 2, Woodland, Cal.

A BARGAIN in Olive, Orange, English Walnut trees and Thompson vines at Central Nursery, Route 8, Tulare St., Fresno, Cal. T. Kimura.

Flies Assist in Scientific Breeding.

[By E. B. Babcock.]

Future progress in the improvent of livestock and farm crops ll depend largely on progress in e scientific investigation of the ndamental principles upon which ch improvement must be based. the practical man it may seem a cry from the laboratory study of little fly to an actual increase in lue of a breed of livestock. Yet ch is not the case since the fundaental principles involved are the me for both.

Intensive laboratory study of the mmon vinegar fly has been in ogress for seven years. The eater portion of this work has en done at Columbia University. e California Experiment Station s been following this work for ree years and now has under way me original work with other close- related species of flies. Since be- g subjected to intensive study the negar fly has produced over one ndred new true-breeding varieties the original wild species. By bridization of these varieties with ch other and with wild flies many w facts of importance concerning redity have come to light. Among e more important achievements ade possible by this work are the llowing: (1) complete verification the fundamental theory of Menlism; (2) abundant evidence that x is determined at the moment of rtilization of the egg by the erm; (3) definite knowledge conrning the biological mechanism on which Mendelian heredity dends.

The work with the vinegar fly hich has been going on at the Calirnia Station has yielded results rmonious with those obtained at olumbia University in every parcular. Moreover in a distinct ecies of fly we already have at ast one new variety. It is highly nportant that the heredity of the negar fly be compared with that other animals and with plants.

SELLING MILK BY TEST.

Considering the agitation favorg the selling of market milk by st rather than by the gallon in alifornia cities the following news em sent us by the American Jersey attle Club indicates that progress this respect is even more adanced in Eastern cities.

The account says that the Departent of Health of New York City tends very shortly to enforce an rder which will not permit milk to e sold in New York City which conins less than 8.5 per cent of solids ot fat. The milk companies supplyg New York City have been bringg this rule to the notice of milk isers, and they have been pointing to them the supreme importance taking such steps to improve the uality of their herds as will insure at the average solids not fat will eet the requirements of the Deartment. The consuming public is ecoming very much alive to the mparative nutritive values of the ifferent grades of milk. The prument farmer or dairyman will act acordingly in the selection of his erd. Others will be compelled to llow suit, or be forced out of busiess; for the movement for better milk, or for the grading and pricing of milk on its real food value, is spreading from city to city all over the land.

TILLY ALCARTRA'S NEW WORLD RECORD.

[Written for Pacific Rural Press.]

At eight o'clock Thursday night, March 23, another world's record was made by a California cow when Tilly Alcartra finished her two-year milk record with 60,287 pounds of milk and 2,379.47 pounds of butter, at the ranch of A. W. Morris and Sons in Yolo county.

This beats the previous record made by Riverside Sadie De Kol Burke by 5,469.8 pounds of milk, thus insuring championship honors for Tilly Alcartra for some time to come, both in yearly and two-year milk production.

During the two years she dropped a fine calf and is due to freshen again May 15, 1916, which is considered a noteworthy performance for cows which are being officially tested for two-year records.

This makes the third world's record long distance cow that has been developed on the Morris ranch in the past few years, indicating that the possibilities of California as a purebred State are only just beginning to be demonstrated.

ANTELOPE VALLEY ORGANIZATION.

[Written for Pacific Rural Press.]

The Antelope Valley Swine Breeders' Ass'n was organized Mar. 18 after several meetings held to discuss the matter. Its chief object will be to prevent cholera entering the Valley again. Probably its next most important object is to bring producers together so they can ship to market in carlots. J. K. Miller was elected president; T. J. Hitte, vice-president; Donald H. Graham, secretary; Jack Whitney, treasurer; and F. W. Rich, J. B. Nourse, and Otto Schull the other directors. The first regular monthly meeting will be April 1, at which county veterinarian L. M. Hunt and J. L. Thatcher of Riverside will speak.

A New Head for the Henderson Herd

[Written for Pacific Rural Press.]

The accompanying photograph is that of Supreme Glista Pietje, a beautifully marked and perfectly formed two-year-old bull which has just recently been placed at the head of the Henderson Company's Holstein herd in Sacramento county.

He was bred by E. A. Powell of Syracuse, New York, and selected by the Henderson Company because of his wonderful breeding, as well as being a promising show bull. His dam has a 32.39-pounds butter record while her full sister made 32.65 pounds, and their dam at 10 years old made 31.60 pounds in seven days. The sire of his dam has eight living daughters. Six of these have 30-pound records or better; of the other two, one has lost a quarter and the other is still young. All the above cows are owned by the Cornell University and some of them, it is expected, will soon increase their present records.



The sire of Supreme Glista Pietje comes of the well-known Pietje and Ormsby families. He has 10 A. R. O. daughters and 35 A. R. O. sisters, one of which made 36.60 pounds of butter in seven days. His granddam has a record of 31.62 pounds butter and his sire has 106 A. R. O. sisters.

If the old maxim is true: "Like begets like, or the likeness of some ancestor," certainly the daughters of this bull will do something worthy of special notice.

FEEDING $1.55 BARLEY TO HOGS.

To the Editor: I have about 35 nice young pigs averaging from 50 to 80 pounds each in weight and six to seven and a half months old. They are in good condition and running on alfalfa pasture. Can I afford to pay $1.55 per cwt. for rolled barley and one cent per gallon for buttermilk, feeding them about 40 gallons a day, with pork at seven cents a pound and prospects for an advance in price?—O. F. H., Modesto.

[Yes. When supplemented with alfalfa and buttermilk you should be able to get a hundred pounds gain with 200 to 300 pounds of barley. You can feed about three pounds of buttermilk to one pound of grain and make economical gains. As a young hog is supposed to be able to consume grain up to five per cent of his weight you could feed a ration of two and a half pounds barley and seven and a half pounds of buttermilk daily, together with alfalfa pasture. By feeding this ration you should be able to make 100 pounds gain at a cost of about $5.75 or a trifle less for grain and milk.—Eds.]



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California Corrugated Culvert Company

The Pasteurization Law and What to Do.

[Address of Geo. W. Ashley, before Farmers' Club at Live Oak Hall, San Joaquin County.]

A. B. 1549, which became chapter 742 of our laws, and which is a law today but does not go into effect until Oct. 1, 1916, is legislation affecting such food products as milk, cream and butter.

All legislation should be carefully drawn, but especially legislation affecting food products. Why? Because your food consumption in these United States is increasing much more rapidly than your food production is increasing. What is called your food consumption class come chiefly from the cities, while your food production class comes chiefly from the country.

In the United States your city population increased in ten years, 40 per cent, your country population in the same time 4 per cent, or ten to one. This alone should give you caution, but when in the same time your total population increased 22 per cent and your total food supply only 2 per cent, or 11 to one, you should be much more cautious. Added to this, in the same ten years on the Pacific Coast, your population increased 100 per cent and your butter supply 60 per cent; also on the Pacific Coast you had in 1870, 339 cows to each 1,000 population; in 1890, 265 cows, and in 1910, 197 cows, a decrease of 142 cows to the 1000 of population, or a decrease of 42 per cent in 40 years, and 26 per cent in the last 20 years of this period.

With these statistics before them, no one having the good of the community as a whole at heart would, unless the need was extraordinarily great, demand the passage of a law affecting these necessary food products, without first being sure it was carefully drawn.

First, then, was the need extraordinarily great? We have in this State a State Dairy Bureau. Did they demand the passage of this law? No, they did not. Next, nearly all of the people who did demand the passage of this bill live in the cities. These cities all have their health departments, and either have or can have regulation governing their milk supply. Their need was not therefore extraordinarily great.

This leaves the question, then, was A. B. 1549 carefully drawn? Does it protect the interests of the consumer, where not already protected, or capable of protection, and does it protect the interest of the producer? We will not at this time take very much time up with the interests of the consumer, for while in the end this law will inevitably increase their cost of living, which many of them will not be able or willing to stand, still they have demanded the passage of this law and they should pay.

As to you, the producer, was there even any attempt by these people to protect you? No. Although it was promised, there is no remuneration even spoken of in the law to cover the loss for the cattle condemned. Nor is there offer of aid in any way for the 50 or 60 per cent of the smaller dairies that will be forced out of business, to many of whom it will mean financial ruin. Neither is there apology for the declaring of all of the milk used by the country people rotten.

Under these conditions, the question for the dairyman to decide is, what is the best course to pursue? Dairy legislation is a very serious question for you; make it serious for the consumer and he will have more regard for what is just and reasonable.

A leaf from the history of the passage of this bill: The various dairymen and dairy committees that came to Sacramento thought from the promises made them, both by those asking for the passage of the bill and also by committee chairmen and members of the legislature, that they (the dairymen) would come through in reasonably good shape. But they saw these promises broken and this legislation put through—legislation based upon what they claimed was the danger to human life from dirty dairies. It is an easy subject to orate upon and one which, just as in this case, the sponsor for the bill needs to know nothing of a dairy to be able to talk about, and with the threat of the "club woman's" vote held over the legislator, secure the passage of a law that is neither reasonable nor just.

The author of A. B. 1549, or rather the sponsor for it, admitted that he never was inside of a dairy, knew nothing of them, or how they were conducted. Yet he was able, with the assistance of many others like him, to secure the passage of this bill! A bill that is in favor of the rich man as against the poor man; a bill that means the practical elimination of all the smaller dairies; a bill that in addition to these, declares that all of the milk that does not comply with these regulations, or practically all of the milk used by the country people, is impure, unwholesome and unfit for human consumption. Let us see just what this last means. From U. S. Agricultural Department statistics, we find that the average amount of milk consumed by the country people of the United States per week is 5¼ gallons per person, while the city person only averages 2 1-3 gallons, or about half as much. Carried still farther, the country people consume about two and one-half billion gallons per year and the city people only a billion gallons. And yet at the request of the smaller user (the city people) the great State of California declares that portion of the food products used by the country people to be rotten and unfit for human consumption.

Now, are the dairyman and the country people going to contend against such legislation? There is no question but what there is need of regulation of the cities' milk supply. The necessity of its passing through many hands, some honest and some not, some cleanly and some not! the tracing, once in a while of disease to this source, show that there is need. This regulation, however, should be reasonable and just and the laws and rules governing it should be drawn by those familiar with dairy conditions, and above all those that demand them should be willing and anxious to pay the added cost.

The costly milking shed in which no hay may be stored, the up-to-date milk house, fly proof, with refrigeration or other plant to cool the milk quickly; weather sheds to keep the cows contented, a high per cent of butter fat, tuberculin tests or pasteurization, so many thousand bacteria to the cubic centimeter, t holding of the milk at a certain te perature, which after it is pa teurized is fixed by law at 50 d grees; all of these cost money. N reasonable person could think the would make the producing cost

The Southern California Breeders'

FIRST ANNUAL CONSIGNMENT SALE

85 Head Purebred Holstein CATTLE

Friday, April 14

at the

Rio Vista Holstein Farm

1 mile north, ½ mile west of

Rivera, Calif.

the following contributors:

RIO VISTA HOLSTEIN FARM
(BEN. A. RHOADES, Prop.)
RIVERA, CAL.

STALDER BROS.
RIVERSIDE, CAL.

EDGEMONT HOLSTEIN FARM
BURBANK, CAL.

Have Consigned Cattle of Great Merit in Order to Make This Truly

90% of the offerings are females and they include cows with records of 27.86 lbs., 23.69 lbs., 22.28 lbs. and 20.68 lbs. of butter in 7 days. Many others with records up to 20 lbs. of butter in 7 days. There will be daughters of these cows sired by such great sires as. PRINCE GELSCHE WALKER KORNDYKE; a son of JULIANA DE KOL, former World Record Cow. There will be daughters of King Hengerveld Segis 8th and De Kol Hartog Pontiac, out of A. R. O. dams.

There are only a few bulls, but they are real herd headers. There will be a son of SPRING FARM KING PONTIAC 6th and out of a granddaughter of DE KOL'S 2nd BUTTER BOY 3rd. A son of TILLY ALCARTRA, the World's Champion milk cow. A son of PRINCE GELSCHE WALKER KORNDYKE, out of a 22-lb. granddaughter of ALTA POSCH'S SON. A few others of exceptional quality.

A Sale of Foundation Stock

This sale will be conducted by COL. BEN A. RHOADES of Los Angeles. For full information and Catalog, write

Harlan Dailey

Sales Manager.

1505 S. MAIN ST., LOS ANGELES, CAL.

AUCTION SALE OF JERSEYS

125---Head---125

At the Rancho Dos Rios, Modesto, Cal.

on Saturday, May 6, 1916

The First Public Offering from California's Oldest Herd of A. J. C. C. Jerseys in recent years. This is the first opportunity breeders and dairymen have ever had to purchase, at Their Own Price, Jerseys from this famous herd, which was founded by Adolph Mailliard in 1868.

Practically the Entire Herd of cows at present milking in our herd of Over 400 Head will be sold in this sale to make room for a large number of heifers which will soon freshen. Included in the sale are 40 Registered Animals, carrying a combination of blood lines which trace to the Greatest Dams and Sires of the Breed.

Several Daughters of Dos Rios Pogis, a grandson of Hood Farm Toronto, who has 34 daughters in the list of tested cows, with records varying from 329 pounds butter as two-year-old to 1047 Pounds Butter as mature cows, will be catalogued in this sale. These daughters have been exceptionally heavy producers in our herd and furnish the nucleus of an outstanding foundation.

Granddaughters of Brown Bessie's Golden Gate. This great bull was used as our herd sire for a number of years, being a Son of Recorder and a Grandson of Brown Bessie, the Champion Butter Cow at the Chicago Exposition. He carried 50 per cent of the blood of the great breed leaders, Combination and Brown Bessie, and was a grandsire of the great sire Diploma. His daughters in this sale are outstanding individuals.

Others offered are sired by such bulls as Laura Lee's Isidro, Dorinda Darling's Volco and Rioter Cuba Exile. Many are bred to our young herd sires, Biddy's Valet of L. and Melia Ann's Butterboy Jr.

Breeding of Unregistered Animals in the Sale Is Practically the Same as That of the A. J. C. C. Cattle.

All Stock Tuberculin Tested within 30 Days of Date of Sale.

For Further Particulars See This Space Next Week, or Address

RANCHO DOS RIOS, MODESTO, CAL.

or

JOSEPH MAILLIARD, 1815 Vallejo St., San Francisco, Cal.

Auctioneer: COL. BEN A. RHOADES of Los Angeles,
Assisted by M. P. Keppford of Modesto.

milk cheaper. They must increase its cost. That this increase in cost will, if added to the selling price, increase the cost of living to the consumer, goes without saying. But the consumer has demanded them and he must pay. To do otherwise would bankrupt the producer. Herein lies your greatest remedy against thoughtless legislation. This should be your one main fight, for nothing will make these people careful of the rights of others more quickly than to show them that they will have to pay the bill.

The dairymen in some sections have already formed organizations for the purpose of adding these increased costs of production to their selling price and you and every district in the State should do likewise.

Another reason why you should organize is to see that one of the tests for the approval of a milk inspection department by the State Dairy Bureau, as called for in this law, shall be the adoption of reasonable rules by that inspection department. Recollect that this "inspection department" will have the fixing of the temperature at which your milk and cream will have to be held until it is pasteurized, also the making of the rules and regulations and the fixing of the methods and standards of production and distribution, the cultural and physical examination of yourself and your help. All of these are up to this inspection department. It behooves you to see that they are reasonably and justly fixed. Only by organization can you accomplish this.

The evil effects that this law will produce have already begun to show. There is no rule or method for the marking of butter so that it may be placed in storage and held until after Oct. 1, 1916, and then taken out and sold during the scarcity in the winter months. Hence all of the great over-supply made during the season of good and cheap feed has no place to go, except to be placed upon the market at ruinous prices.

Another evil effect that will soon show up, either from the effect of, or the fear of, the tuberculin test, will be a slump in the price of both beef and dairy cattle. Unquestionably the market will go to pieces.

Again I say you must organize to offset at least some of these evils. Be sure when you do organize, however, that you organize along business lines. Choose for your officers those who have been reasonably successful in their own particular line, and do not expect them to give up too much of their time and effort without reasonable compensation.

A Sale of Noted Jerseys.

Jersey lovers as well as practical dairymen will be interested in the announcement that the owners of the Rancho Dos Rios herd of Jerseys in Stanislaus county are to dispose of 125 head of cattle at public auction early in May.

This herd was established in 1868, making it the oldest herd of registered cattle on the Pacific Coast and it seems needless to say that during that time much of the success of the Jersey breed on the coast, from a production standpoint, has resulted from the efforts of its owners.

For over 40 years the herd was known as the Mailliard herd, but was moved from Marin county to Stanislaus county a few years ago, where the name was changed to Rancho Dos Rios, the ownership, however, remaining in the Mailliard family's hands.

Utility has been the chief consideration in the entire 48 years' work with the herd, the herd sires having been selected with that end in view and as a result the herd contains a combination of blood lines unexcelled, tracing to all of the great dams and sires of the breed.

Because of the vast amount of development work necessary on their Stanislaus county ranch, it has been impossible for the owners to do force feeding for official test work, but private testing has been consistently practiced in late years, and the present offering comprises practically the entire lot selected by that method, from several hundred head.

Owing to an exceptionally large number of young heifers which are about to freshen and a shortage of feed, Manager R. E. Watson decided to hold a public sale, the first from the herd since 1877, expecting in this way to meet the growing demand for the most economical butter producer, at a producer's rather than a fancier's price.

Southern California Holstein Sale.

We are advised by Harlan Dailey, sales manager of the first annual auction sale of the Southern California Holstein Breeders' Ass'n, that their first offering will include some of the finest purebred Holsteins ever sold in Southern California.

Among the offering will be a sister to Aralia De Kol; a son of Spring Farm King Pontiac 6th; Prince Aralia Walker, a son of Prince Gelsche Walker; Arcula Alcartra Sir Korndyke, a son of Korndyke Queen De Kol's Prince; King Pontiac Ormsby Segis, a grandson of the King of the Pontiacs and a son of Tilly Alcartra.

From the above it will be seen that while there are only a few bulls in the sale they are real herd headers and this, with the fact that many of the cows consigned are bred to the above bulls, should make an attractive offering.

Mr. Dailey states that owing to the fact that Southern California is only just beginning to get into the Holstein game, it seems doubtful whether the cattle will bring as high prices as they would if sold farther north in the State and for that reason northern breeders will likely take advantage of the opportunity to purchase quite heavily.

Fourteen hundred head of Merino sheep have just been added to Mr. Strang's ranch near Holtville, Imperial county, and that number will soon be increased to 3500. Instead of having to drive them out of the valley in the summer on account of the heat, Mr. Manning, the foreman of the ranch, states that the shade on the ranch will allow him to keep them all through the summer.

Protection for California Livestock Owners

Having complied with all the requirements of the California Insurance Commissioner, and established general agency connections,

The Montana Livestock & Casualty Insurance Co.

is now ready for business in this State and is prepared to offer safe and sure protection to owners of all classes of Horses and Livestock, (with the exception of stock on the open range).

This Company is safe, sound, and has a reputation for the prompt payment of claims.

Some Facts About the Company that Stockowners Should Know:

The Montana Livestock and Casualty Insurance Company has
—paid-up capital in cash $108,530.75
—surplus as regards policy holders 118,829.07
—paid losses to stockowners during 1915 22,617.50
—the approval of the Insurance Commissioners of California, Washington, North Dakota, Utah and Montana.

Officers of the Company:

EDWIN NORRIS, Ex-Governor Montana - - - President
JACOB MILLS, Capitalist - - First Vice-President
WM. L. HOLLOWAY, Associate Justice Montana Supreme Court, - - - - - Second Vice-President
GEORGE B. CONWAY - - - Secretary and General Mgr.
A. C. JOHNSON, President Montana Life Insurance Co., - Treasurer.

HOME OFFICE: HELENA, MONTANA.

For local agent arrangements,
Address DOUGLAS KEITH, General Agent,
602 Royal Insurance Building, San Francisco, California.

HILLCREST STOCK FARM

Thornton S. Glide, Prop.
Davis, Cal.

SHORTHORN CATTLE

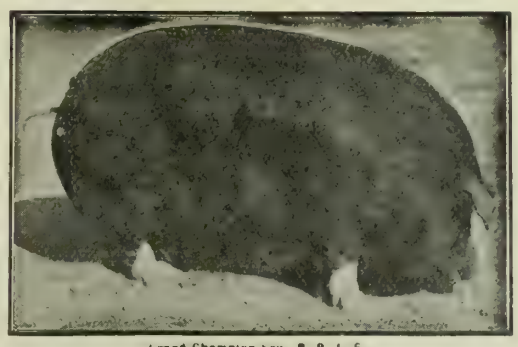
Shropshire and Merino Sheep

FOR SALE, SINGLE OR CARLOAD LOTS



KING LANCASTER,
Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.
THEY HAVE GRAND CHAMPIONS BEHIND THEM.



Grand Champion Sow, P. P. I. E.

Medium Type POLAND-CHINAS

Choice breeding stock, both sexes, from Panama-Pacific International Exposition prize-winning strain. 12 firsts. Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows. $2145 cash awards. Write to

M. BASSETT
Box P.
Hanford, Cal.

SHORTHORN BULLS and HEIFERS

Will arrive from the East with a car of choice Shorthorn Bulls and Heifers about March tenth. Solid Red—Registered and Tuberculin tested.

These are splendid animals—lots of bone and individuality.

Also a few choice, registered Berkshires for sale.

H. L. MURPHY Perkins, Sacramento Co., Cal.

BIG TYPE POLAND CHINAS

Gilts from Weanlings to one year old. Bred or open. Boars from weanlings to 8 months.

THE BROWNING STOCK FARM,
W. H. BROWNING, PROP. WOODLAND, CAL.

KERN COUNTY FAIR ASSOCIATION.

[Written for Pacific Rural Press.]

A co-operative non-profit county fair association was suggested to a well-attended meeting of Kern county Farm Bureau directors March 25 by President Barlow of the Kern county Board of Trade, and was very favorably received by the Farm Bureau.

The proposition is that a county fair association be formed under the special law for that purpose, having for its directors one representative from each of the 12 local Farm Bureau centers, two more from each of the supervisoral districts, the Farm Adviser, the Horticultural Commissioner, the president of the Board of Trade, and Mr. Burke, who managed the Kern county exhibit which won the premium for best collective county exhibit at Panama-Pacific Exposition. An executive committee would be appointed by these. Perhaps a permanent circulating trophy would be provided to go year after year to the best exhibit by a Farm Bureau center. The county supervisors will be asked for $2000 to to be spent on premiums; and there will be a membership fee which will entitle members to free entrance to the fairs, etc.

The old private Kern County Fair Ass'n has 75 acres fenced and a pavilion, which could be leased by the new association.

The fair would probably be held to fit into the circuit following Fresno. The Farm Bureau was also invited to have a representative from each local center, on the Kern County Board of Trade.

SHEEP.

A report has it that all of the lambs from the large Peters flocks in Solano county have been contracted for.

One of Miller and Lux' buyers purchased 200 head of sheep in Sutter county last week at prices ranging from $5 to $7 a head.

Sheep men in the Sacramento valley seem to have their own ideas as to the possible value of wool and are turning down unheard of prices quite often these days.

Jean Sarthou of Tulare county has recently sold over six tons of last year's wool for 21 cents a pound. He has also sold over 1200 lambs from his flock which were wintered in the alfalfa district adjacent to Porterville.

G. K. Swingle, the well-known Shropshire breeder of Davis, says that the loss in lambing with his flock was heavier this year than ever before and that from 250 ewes he won't have much more than a 50 per cent crop of lambs. Thornton Glide of the same place says that while his loss was not so heavy as the above, it was much more than ordinary on account of the bad weather. Altogether it has undoubtedly been a hard season for the sheep man.

HORSES.

The University Farm at Davis has just purchased four grade fillies from the Howard Cattle Co. at Newman, which will be used on the Farm and for demonstration purposes. The mares were sired by a Shire stallion and according to Prof. J. I. Thompson, who purchased them, are good serviceable animals.

Registered Shetlands

Imported Stock from Sunnyside Farm.

"Sugar," [illegible]

"Toretta," Black Mare, 3 years old.

$300 for team. For immediate sale.

O. L. Triggs, Santa Rosa, Cal.

With the Live Stock Men.

DAIRYING.

Dr. Roadhouse of the University of California gave an address at a large meeting of dairymen at Lockeford last week at which time the new State dairy law was discussed.

In the last list of Guernsey cows, comprising 46 records for which Advanced Register certificates are being written, 16 gave over 500 pounds of butterfat each, while six gave an average of over 691 pounds of fat.

State Dairy Inspector Harris T. Nye of Imperial county has filed a complaint against a contractor in that county who has been substituting oleomargarine in the place of butter without posting notices of the change.

F. W. Kiesel of Sacramento received word last week from Dr. Weldon, who is in New York, that he would leave shortly for California with a carload of choice Holsteins for the Kiesel and Weldon herds.

State Veterinarian Keane reports that Post and Card of Corcoran have recently imported 35 head of registered Guernseys from the East and that the Colusa Butter Co. has imported eight head of registered Jerseys.

The Holstein cow Alka Hengerveld Pietertje, owned by the Henderson Co. of Sacramento, has just finished a 30-day official test with 65 pounds of butter. This cow is not yet two years old, having been born April 26, 1914.

The dairymen's ass'n around Wasco, Kern county, which was organized through the efforts of the Kern County Farm Bureau, has developed into an association which is to build a $4,500 creamery and ice plant at Wasco.

M. Tichenor, manager of the Palo Alto Stock Farm at Palo Alto, purchased 51 head of registered Holsteins from the Balfour Guthrie Co. last week. This herd has been maintained at a ranch of the latter named company in Napa county.

The secretary of the Holstein-Friesian Ass'n reports that the cow Fairview Korndyke Pietertje has broken the fat production record in the junior two-year-old division by producing 493 pounds of milk containing over 23 pounds of fat.

The registered yearling Holstein bull Semitropic Anson was bought March 24 from the Semitropic ranch of Kern county by J. W. Jennings of the Ramina ranch, Tehachapi. The deal was engineered by County Farm Adviser C. W. Williams.

Guy H. Miller, owner of the Venadera herd of Jerseys at Modesto, has recently shipped three heifers, sired by Altama Interest, to C. J. Dailey of Ventura. He has also sold yearling bulls to W. A. Eaton of Merced, W. H. Wallace of Emerson and D. Keg of Bodega.

W. H. Donnelsen of Esparto, Yolo county, who is establishing a herd of purebred Holsteins, has purchased the bull Korndyke Ormsby Creamelle from F. Stenzil of San Leandro. This bull is out of the cow Korndyke Ormsby Hengerveld 2nd who has a seven-day record of 28.91 pounds of butter.

At a meeting of dairymen held at Orland March 18, steps were taken toward the establishing of a cow-testing association in that district. Over 450 cows were signed up at the meeting and according to Farm Adviser Heileman there will be little trouble in securing 1,000 head before the association starts work.

The California Central Creameries Co. has secured a contract for 700,000 pounds of butter to be manufactured for the U. S. Navy. Officials of the company say that they will try to fill the entire contract from their Humboldt county plants, but may have to fill in with the product of some of their other creameries in other parts of the State.

Six Guernsey cows have recently finished official test records averaging 450 pounds of fat at the Elliott-Brant ranch. Seven of them were two-year-olds. The cow Princess of Meadowbrook finished a yearly record in March with 725 pounds of butter fat from 14,600 pounds of milk. This company has 21 cows on official test at their Los Angeles county ranch.

SWINE.

Grade hogs are being replaced as fast as possible with purebred Berkshires by G. H. Peters of Bakersfield.

According to the Farm Bureau Monthly of Placer county, there are at least five breeders of purebred hogs in that county at the present time.

B. Suza of Kings county marketed four hogs last week that weighed 2350 pounds, or an average of over 587 pounds, one tipping the scales at 800.

Lippincot and Rich of Lancaster are going into purebred Berkshires on a large scale, having secured most of their foundation stock from California breeders.

The dairy herd of the Craig Farms in Kern county, of which J. H. Osgood is manager, has been disposed of and all energies will be devoted to purebred Berkshires.

Plans are under way for the holding of a hog show in El Centro, Imperial county, sometime in May. A committee is now at work completing arrangements.

F. M. Peterson of Tulare county sold a carload of grain-fed hogs last week for eight and a quarter cents. Hog buyers are said to be scouring that part of the valley for good grain-finished hogs.

Fully 75 per cent of the hog breeders in Tulare county were expected to become members of the Tulare County Swine Breeders' Ass'n by March 25, at which time a meeting was held in Visalia.

Prof. J. I. Thompson of Davis has sent out letters to swine breeders all over the State soliciting consignments to the swine sale which is to be held at Chico the latter part of May.

R. J. Ross of Modesto reports the sale of two Duroc-Jersey sows to M. P. Peck of Merced; 15 sows and gilts to F. T. Knewing of the Oak Knoll Ranch and one service boar to E. H. Cornwall of Modesto.

The rumor is passing among Los Angeles meat packers that some sort of a concerted educational campaign is to be launched in the near future for more and better hogs in California.

Haden Smith of Woodland writes that he has recently sold 23 head of choice Duroc Jerseys, including bred sows, gilts and fall boars. He states that fully 80 per cent of his inquiries come through the efforts of the Pacific Rural Press. That's what they all say.

What is claimed by the Winona Ranch of Grant's Pass, Oregon, as being a world's producing record for purebred sows is the one made by Princess Royal S., who has a farrowing record of 110 live pigs in her ten straight litters, an average of 11 pigs to the litter.

Two purebred Duroc-Jersey boars head the herd of G. C. East and D. H. Graham in Antelope Valley. One is Aneeda Model, of Slocum's Crimson Wonder blood and the other Superdreadnaught, purchased from M. Hucker. The sow Rosemore's Rose was obtained from Elmer Lamb at Ceres.

Ten pigs being fed by Fred Calloway for G. C. Earl in the Antelope Valley averaged 121 pounds at about seven months when put on feed, February 25. When weighed two weeks later, they averaged 37 pounds heavier. Most of them were sired by a purebred Chester White boar purchased from C. B. Cunningham.

C. B. Cunningham of Mills, Sacra-

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

BIG TYPE POLAND CHINAS—One to a carload. Any age, either sex. 600 on hand. They have plenty of size, extra good ham and shoulders, strong arched backs, great length, depth and thickness of body, with good looks as well. Many are sired by IOWA WONDER, a 1000-pounder in show condition. I believe his pigs are the best in California. Visitors say the are the best they have ever seen. He sires the kind that grow faster and larger, have more, better and stronger pigs, and are more practicable and profitable—the kind that are highly satisfactory. Extra special prices on account of being overstocked. I have hogs galore. Prices will surprise you. Satisfaction guaranteed. Write Geo. A. Smith, Corcoran, Cal.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—Everything registered and Cholera Immune. Have two young boars of service size and a few bred gilts to offer. These are extras in every way. Price very reasonable. Have recently received some bred sows from the East that are from Grand Champions and are bred to Grand Champions, from the best and most popular blood lines. Will have an attractive lot of pigs to offer from the coming spring farrows. These will be the equal of any raised in this country. Am booking orders now for same. Write for prices and catalogue. C. B. Cunningham, Mills, Sacramento County, Cal.

REGISTERED DUROC-JERSEYS—ALL AGES—We are booking orders for Spring pigs out of sows sired by full brothers of "I Am Perfection Wonder," sire of Grand Champion sow at Panama-Pacific, and from others equally well bred. Also offering about 30 exceptionally choice fall boars and gilts. This stock is in first-class condition, breeding guaranteed, and of the finest blood in existence. Prices reasonable. For particulars, write, Haven Smith, Route 1, Box 97A, Woodland, Cal.

YOUNG POLAND CHINAS—Large type boar, "I. B. A. Wonder," won first in class and Reserve Champion P. P. I. E. 730 lbs. under two years in breeding condition. Sows bred and sired by "I B A Wonder." Also weanling pigs, either sex. Trios unrelated. None bigger. None better. $15 and up. Will please you or money refunded. W. A. Young, Lodi, Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Gratervelt Farms, A. B. Humphrey, Prop. Escalon, San Joaquin Co., Cal.

FOR SALE—Three extra nice, big, smooth Poland China Brood Sows from prize-winners. Bred to registered boar for May farrow. $25 each f. o. b., crated and transferred. N. M. Lester, Gridley, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

BIG TYPE POLAND CHINAS—My hogs are sired by California Wonder and Big Chief, imported direct from Iowa. There is no better blood. All hogs eligible to registration. C. A. Cooley, Durham, Cal.

BLATCHFORD'S PIG MEAL weans easily and safely; no trouble; no milk. Write for free folder, "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feed for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen A. Day, Box 1140, Sacramento.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

RANCHO RUBIUS—Durocs all sold except one service boar and a few October pigs. Spring litters will be "best ever." Elmer Lamb, Ceres, Cal.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

ROSELAWN STOCK FARM—Registered Poland Chinas and Shorthorn cattle. Young stock, both sexes, for sale. T. B. Gibson Estate, Woodland, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Price and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

PLAINFIELD STOCK FARM—Registered Berkshires and Durocs. Young stock for sale, both sexes. H. M. Bullard, Woodland, Cal.

REGISTERED BERKSHIRE WEANLINGS—The quick-growing kind. Service boars, gilts and sows. J. M. Bomberger, Modesto, Cal.

PIGS OUT OF SUPERBA—Panama-Pacific Grand Champion Poland China. Booking orders now. Chas. R. Hanna, Riverside, Cal.

BERKSHIRES OF QUALITY bred right, fed right, are right. Both sexes for sale. Prices very reasonable. U. Hartman, Ripon, Cal.

REGISTERED POLAND-CHINAS—The big little half-ton kind that have quality. Prize winners. Hale L. Marsh, Modesto.

REGISTERED IMPROVED CHESTER WHITE BOARS for sale from prize-winning stock. S. R. Cheney, R. 2, Lindsay, Cal.

DUROC OF QUALITY—Predominating bloods of Defender, Buddy Ky, Crimson Wonder. C. T. Thompson, Richmond, Cal.

REGISTERED DUROCS of guaranteed breeding. Bred gilts, service boars and fall pigs. H. E. Boudier & Son, Napa.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

REGISTERED HAMPSHIRES—Winners at P. P. I. E. Stock of all ages. W. T. Gatton, Box 231, Gardena, Cal.

mento county, states that an effort is to be made by the California Swine Breeders' Ass'n, of which he is president, to secure every hog raiser in the State as a member. In line with this work vice-presidents of the association will be picked from the present membership, one to serve in each county, where local associations will be formed. Mr. Cunningham is a live wire himself and should be able to do a great deal for the swine breeders' organization.

We had the pleasure of visiting the H. L. Murphy ranch near Perkins, Sacramento county, last week, and seeing the herd boar, Rival's Robin 2nd, recently purchased from the Elemdorf Farms in Kentucky. This boar weighs about 650 pounds, but will stand more finish for the show ring. He has an unusually high tail setting, good hams, good depth, is exceptionally broad through the heart and smooth as a whistle. He will look good in the best of company at this year's livestock shows.

The Glenview Ranch at Riverside reports the sale of registered Poland Chinas as follows: one bred sow to Loren Ratekin; one boar to Mack and Ingle; one boar to Sherman Institute; one boar to H. E. Walsh; one boar to J. O. Pyle; one boar to D. M. Martin; one boar to A. W. McCready; one boar to Herbert Crafts; two boars to American Beet Sugar Co.; two boars to Chas. E. Johnson; one boar to Truxton Cannon Indian School; one sow to L. R. Verdin and one sow to A. H. Bobo.

BEEF CATTLE.

H. L. Murphy of Perkins has sold six head of Shorthorn cows to Mr. Hammond of the Hammond Lumber Co., who is establishing a herd near Chico.

Judging by the prices Shorthorn and Hereford bulls are bringing in the East, and the general scarcity even at the high prices, California range men would do well to look around in California for some of the old established breeders.

At a meeting held in Fresno recently, a committee of stockmen were appointed to devise ways and means of bringing about a co-operative organization of stock men, with the hope of improving market conditions. It is thought that stockmen in the San Joaquin valley are not getting all that they should for their stock and that they may be able to improve this condition through a strong organization.

Thornton Glide of Davis reports that he still has about 50 or 60 choice range bulls, ready for service, unsold. He attributes this fact to the cold, hard winter which we have just experienced, stating that the range men have been so busy keeping their cattle alive that they have not had time to get away from home. The Glide Shorthorns have such a justly deserved high reputation that this lot will doubtless be disposed of before another 30 days.

Kern county is to have 7500 acres of rice this year, mostly around Wasco, Rio Bravo, Semitropic, Delano, and Miramonte. It is irrigated from wells.

SWINE.

DUROCS AND BERKSHIRES—Prize stock. Guaranteed. Young pigs, $10 each. One yearling Duroc boar, $20. Write for what you want. We have it. Perkins & Co., Perkins, Cal.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED BERKSHIRES—Big-boned. Cholera immune. Riccomi Bros., Mountain View.

REGISTERED BERKSHIRES — Weanling pigs, $10 each. O. A. Casey, R. 7, San Jose.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES — Prize-winning stock Shanyside Stock Farm, Perkins Cal

REGISTERED BERKSHIRES—Young boars for sale. Alexander and Kellogg, Suisun, Cal.

REGISTERED DUROC-JERSEYS — Service boars and fall pigs. Also two mature sows—bred. S. S. Southworth, Napa.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

BIG TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal

REGISTERED POLAND CHINAS—Stock from champion herd at Exposition. Dimmick Bros., Lemoore, Cal

PURE-BRED BERKSHIRES—Stock of all ages. Brae Bourne Ranch, Route 3, Box 172, Santa Rosa, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderas Ranch, El Cajon, Cal. M. S. Allen, Manager.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRE PIGS—Write or call Greenwood Ranch, Brentwood, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED POLAND CHINAS—Large type C. M Stetson, Route "A," Ceres, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

"BOARS"—Pure-bred Durocs. Write for description. R. A. Holdridge, Dixon, Cal.

FAIR OAKS RANCH, WILLITS, CAL.—Registered Duroc and Berkshire Swine.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

CHAS. GOODMAN — Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

POLAND-CHINAS—Prize-winners. Money-makers. W Bernstein, Hanford, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED DUROCS All ages. Either sex. W. A. Pack, Hollister, Cal.

CURTIN DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY Ripon, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore Cal

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal

BERKSHIRES Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H Stenzel San Lorenzo, Cal.

FOR SALE—About 90 head grade Holstein, Durham & Jersey heifers from six months to three years old, all first-class. Prices very reasonable. J. S. Smith, Box 515, San Jose, Cal.

WANTED—About 25 good dairy cows to be paid for in 12 equal monthly installments. Payment secured by mortgage on stock. Party reliable. Box 205, Pacific Rural Press

VANDERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly records. Guy H Miller, Route 1, Modesto, Cal

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TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding Prices reasonable. W. J. Higdon, Tulare, Cal.

FRANK MEACHAM, Petaluma, California — Breeder Red Polled Cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

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REGISTERED JERSEYS Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

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JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare

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HOLSTEIN-FRIESIAN CATTLE and Berkshire Hogs. H. B. Goecken, Breeder, Goecken Heights, Livermore, Cal

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SUNNYSIDE HERD—Registered Holstein cattle. R. F Guerin, R. 3, Box 58, Visalia, Cal.

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REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

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BEEF CATTLE

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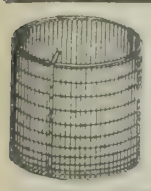
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[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immed iate reply should send money order for $1.00. No charge for questions answered through this department. Name and address of subscriber mu st accompany each query.]

SHOULD CUT OFF HORNS.

To the Editor: What can be used to prevent the horns from developing on calves two months old? Must they be sawed off or can a chemical be used?—A. F. G., Concord.

[At this age the horn stubs will have to be cut off.]

HEALING A CUT IN TEAT.

To the Editor: Will you advise me what to do to heal a cut in a cow's teat that goes through into the milk duct? Shortly after she was cut I sewed up the cut and it healed nicely except a hole about the size of a pin through which the milk continues to leak.—F. M. B., Hanford.

[Cauterize the hole with a red hot needle.]

COW HAS TUBERCULOSIS.

To the Editor: I have a cow that has done very poorly since her last calf was born, having a caked bag and giving a comparatively small amount of milk. She has had a cough for about a year. Not bad till recently, but very bad after a little fast walking, also after eating her mash. I had her tested for tuberculosis but veterinarian stated that she did not have tuberculosis. She sometimes slobbers a little, color of which is clear white and somewhat frothy. Advice will be appreciated. R. K. P., Morgan Hill.

[Your cow has tuberculosis. The test was not a true one. Use the intradermal method the next time.]

COW AFFECTED WITH FOREIGN BODY.

To the Editor: Have a cow that bloated a week ago and had to stick her to save her, but have not succeeded in getting her back in shape again. Have given her physic with the usual results, but does not improve her appetite. She seems to grunt every time she expels her breath and has some bloat yet. She almost refuses to walk and does not eat except a little green grass and a small amount of hay. Will not eat grain or bran. What can I do for her?—C. D., Acampo.

[Your cow probably has a foreign body penetrating her vitals and little can be done. Try giving her one dram fluid extract nux vomica, three times a day.]

EXAMINATION OF HORSE NEEDED.

To the Editor: I have a mare that is lame in one front leg. She slipped on the highway about two months ago and I believe sprained her ankle, as that was the first time I noticed the trouble. She limps considerably at times, especially after running out on the range for a few days. The ankle is not swollen, but she invariably stands with that leg somewhat forward. What do you advise doing?—C. M. G., Cloverdale.

[This mare is lame in the foot and a thorough examination of it is necessary.]

HEIFER SUCKS SELF.

To the Editor: I have a heifer that came fresh two months ago. She sucks herself. Is there any cure other than a harness?—W. W. G., Wrights.

[A harness is the only method to stop this trouble.]

OPERATION FOR STRINGHALT.

To the Editor: I have a horse that seems to have stringhalt in the left hing leg, very seldom in the right leg. Is there any liniment that I could use on him that would help him and not hinder me from working him?—C. W. C., Finley.

[Nothing but an operation will help stringhalt.]

BETTER TREATMENT NEEDED.

To the Editor: I dehorned a cow a few days ago and afterward gave her quite a hard run in taking her out to pasture. Now she is falling off in her milk badly. Is there any remedy for her?—Subscriber, Honcut.

[No dairy animal will stand this kind of treatment without showing the results at the pail.]

TEAT CUT WITH WIRE.

To the Editor: About four days ago one of my cows came home with one teat cut half through by a barbed wire. Yesterday she calved and I noticed that the teat was closed. I was told to use a milking tube, which I did. What could you advise me in the matter? — H. H., Sausalito.

[Bandage the teat with several layers of gauze and pine tar. Use the tube but boil it between insertions.]

CREAM WON'T CHURN — HORSE RUPTURED.

To the Editor: I have a cow five months with calf and fed on alfalfa hay. It is always hard to make butter of her cream and now after three hours' churning I have had to give it up. Can you tell me any remedy? I also have a colt that was born with a rupture on her belly about the size of a hen egg. The local veterinarian said it would eventually go away but it has not. What can I do for her?—T. L. D.

[Let your cream ripen longer. An operation is the only means that will cure this rupture.]

PIGS STIFF AND WEAK.

To the Editor: I have some young pigs that are coughing and seem to be stiff and weak. These pigs have been kept in a yard and fed Egyptian corn until within the last two weeks when they have been on alfalfa during the day and fed a little corn in the yard at night. What is the trouble, and what can I do for them?—W. W. D., Arboga.

[Give these pigs good, dry sleeping quarters, free from draughts and plenty of exercise. Place wood ashes and iron sulphate where they can have free access to it.]

ARISTOCRATIC LIVESTOCK DOWN THE PENINSULA.

(Continued from page 411.)

In line with this work official testing will be practiced.

Already the operations on this ranch have had a beneficial effect on the welfare of Ayrshires in California, several herds having been started in other parts of the State, and in years to come the Peninsula may well claim the credit for having instituted a State-wide respect for these hill-climbing cattle.

Holstein Revisions.—So far we have been able to steer our readers through more or less beaten paths, but the complete story of present-day livestock development down the Peninsula does not permit the omission of certain activities which, while hardly far enough advanced



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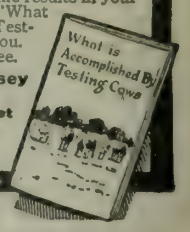
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Pedigreed Holstein Bull $250

I am now offering a very fine bull out of a high-testing dam, who was sired by King Pontiac Premier, one of the best sons of King of the Pontiacs, 165 A. R. O. daughters. His dam's present record is 21.09 pounds, average test, 4.11%, made at four years old. This record was made under verw unfavorable circumstances and she will make around 25 pounds with next calf. On the sire's side the bull has the blood of Pietertje Hengerveld Count De Kol, 99 A. R. O. daughters; and dam Deutschland Creamelle, is out of Creamelle Vale, the former world's championship milk cow. This young bull is almost white in color and is ready for service. His high test breeding will count in your herd.

Write or come and see him.

F. STENZEL.

San Lorenzo, California.

Jersey Bulls

EMPRESS LASS, Grand Champion Jersey Cow at Alaska-Yukon Exposition, and several times at California State Fair, gave 82.32 pounds fat during December, 1915, under dairy conditions.

Her Grandsons and other Bulls from good producing cows for sale.

PRICED RIGHT.

N. H. LOCKE CO.

Lockford, Cal.

Tagus Ranch

BREEDERS OF PUREBRED

Holstein Cattle
Polled Angus Cattle
Duroc Jersey Hogs

Tagus Switch, Tulare Co., Cal.

Oak Grove BERKSHIRES

CHOLERA IMMUNE

Our herd is Cholera Immune, the only immune Berkshire herd in the State

Fine herd boars in use and they are second to none on the coast Our sows are of equal merit

We know that we can supply what you want.

Write Us or Call.

OAK GROVE DAIRY FARM

H. G. ARMSTRONG, Prop.

Woodland, Cal.

GET STARTED RIGHT
Registered Duroc Jerseys.

$10 each PIGS $10 each
are money makers.

What's the use of raising "Scrub Hogs" when purebreds may be had at this price! They grow faster. Send today.

NEW ENGLAND CALIFORNIA CORPORATION
RIPON, CALIF.

Model Herd of
BERKSHIRES

Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 180837 and Breed's Model 165859, both winners of blue ribbons at State Fair.

Descriptive catalog upon request.

J. L. GISH, Lawn, Inyo County, Calif.

White's Berkshires

Are Money Makers.
THEY GROW.
Headed by the First Prize Aged Boar at P. P. I. E.
Tell us your needs.
F. W. WHITE. Elk Grove, Cal.

BLAKE, MOFFITT & TOWNE

Dealers In PAPER
37 FIRST STREET, SAN FRANCISCO
Blake, Moffitt & Towne, Los Angeles
Blake, McFaill & Co., Portland, Oregon

to be certain of success, are of particular interest inasmuch as they show the trend of the times.

We doubt not that readers who were familiar with early-day racehorse breeding have often wondered why the old home place of Governor Stanford, with its natural setting for livestock breeding, has not been utilized for such purposes in later years.

And neither is it strange that men with imagination have decided on that farm as the ideal spot on which to breed Holstein and Guernsey cattle, in equally as pretentious a way as Governor Stanford bred thoroughbreds.

According to M. Tichenor, manager and part owner of the Palo Alto Stock Farm, as it is to be known hereafter, there are to be 600 head of registered cattle maintained on the farm. Already some hundred head have been purchased during the last few months and large purchases will be made both in the East and West in the immediate future.

Activity in development work was only started a short time ago, but already the large winery, with its solid walls of brick, has been transformed into one of the finest dairy barns in the State. That official testing is to be one of the important factors with these herds is shown by the commodious quarters which have been set aside for test cows.

Alfalfa is to be grown in good-sized quantities here also, irrigation water being available in the mountains back of the farm, and already a large acreage has been checked and seeded. This alfalfa, it seems to us, completes the picture of an ideal stock farm, with abundance of green feed below foot and low-spreading oaks generously provided overhead. Surely many a neighbor and traveler will be impressed with the possibilities of livestock for ornamental as well as utility purposes as they pass this farm and it may not be surprising to see dairy cattle become a favored front lawn attraction on the millionaire's estate of the future.

Berkshire Sausage.—However fascinating the subject of dairy cows down the Peninsula may be, the project which will attract most attention because of its uniqueness is the Berkshire sausage enterprise on the Carruthers Farms. As yet this is another of those "going to be" affairs, but the factory is almost completed and those epicures who order artichokes are anxiously waiting for this Berkshire product at their fashionable hotel or club in San Francisco.

Nor is this to be Berkshire sausage in name alone. It is proposed to grind up Berkshires from all parts of the State and sell it in dainty pound cartons. Just why Berkshire sausage is more palatable than that of other breeds of hogs is not set forth, but Mr. Carruthers has hit upon a plan for carrying the name of his favorite breed as well as of his farm directly to the dinner table of his aristocratic neighbors.

Sausage, while the most novel product of Carruthers Farm, is not to be the whole show, but on the contrary it will be a side line, if present plans carry through.

The breeding of registered Berkshires and Shorthorns is to be the main endeavor on the 300 or more acres of land, which is also a part of the Stanford University grounds.

The foundation for the Berkshire herd has been largely purchased from the herd of C. F. Curtiss of Iowa, and with the exception of two or three sows are either daughters or granddaughters of the great Berkshire boar Rival's Champion Best. At present the herd numbers some 75 animals, of which about 25 are brood sows.

Great care has been exercised in choosing the foundation sows as well as the herd sires with the result that one of the finest show herds in the West is to be developed on this farm. Already a good beginning has been made, in the winnings of the herd at San Francisco last fall and this is to be persistently followed up at future livestock shows.

His long connection with purebred beef cattle has naturally led Mr. Carruthers to establish a herd of Shorthorns, small in size as yet but nevertheless to be one of the foundation stones of the farm's future. As herd sire for the Shorthorns an outstanding young bull, Count Glory by name, sired by Count Avon and out of an imported Red Knight cow, has been purchased from the east just recently.

Other purebred enterprises which are well under way in the vicinity of the Stanford University are the Percheron stud of the Los Altos Stock Farm and the Ormandale Stock Farm's herd of recently acquired Shorthorns, thus rounding out a future career for the district in purebred livestock breeding that few sections of similar size can boast of.

As you go further south into the Santa Clara Valley proper you find other herds of livestock being established, but that is another story and has more to do with prunes than millionaires and artichokes.

A sale of purebred Jerseys is to be held during the Butte County Spring Exposition.



Registered
Jacks

Range raised; Guaranteed satisfactory breeders. Field Jacks a specialty. Registered Shire Colts. Will trade for young mules, horses or land.

James W. McCord

Hanford, California

Imported and Homebred.
SHIRE STALLIONS and MARES



68 prizes won by our horses at the Panama-Pacific International Exposition, including the premium championship for breeder.

Visitors and Correspondence invited.

BLACK HAWK STOCK RANCH,
Burlingame, California.

REGISTERED SWINE.

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.

Write or call and see us.

SWINELAND FARM.
W. O. PEARSON, Prop.
Woodland, California.

GRANDSONS OF TILLY ALCARTRA

At Prices within Reach of Every Breeder and Dairyman.



A Grandson of Tilly Alcartra.

We have several splendid grandsons of this now famous cow which we can deliver to you at prices which will suit the pocketbooks of every dairyman wishing to improve the quality of his herd, whether it be a grade or pure-bred herd. These bulls are sired by our herd bull, Prince Alcartra Korndyke and out of A. R. O. cows, and are the only living grandsons of a cow having a record of over 30,000 pounds of milk in a year. Such an opportunity for increasing production has never been offered DAIRYMEN AND BREEDERS in California, price and quality considered. Buy one of these bulls and solve your low production problem. Write

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

HOPLAND STOCK FARM
REGISTERED BERKSHIRES

Boars, Bred Sows and Gilts.
Herd Board ROYAL POINTER 2nd, 197092.
First Premium Senior Yearling P. P. I. E.
San Francisco Office, 1210 Flood Bldg.

Digester Tankage

Send for sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

Poultry for Profit---Producing and Marketing.

HOW TO PACK EGGS FOR HATCHING.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

During the last month I have had some experience with eggs that have been sent by express for hatching purposes. Three separate shipments were sent from farms that had turkey and duck eggs to sell.

One look at the packages convinced me that none of these shippers understood how to pack eggs for hatching; in fact there was not any notice on the packages telling what the package contained, or how it should be handled by expressmen.

In one of these packages there were 75 turkey eggs wrapped in paper, each egg separate and laid on their side in rows, not a bit of excelsior or other packing that would have helped relieve the weight of the top layer of eggs from the lower layer, or from the ground if the box was thrown or dropped down. The consequence was that 24 of the 75 eggs were broken, and those not broken were jarred so that the fertile germ was made very much weaker; and at the first test, ten were taken out as clear eggs.

One hundred duck eggs were shipped loose in some kind of fine stuff resembling sawdust; and out of these 100 eggs, 19 ducks hatched, when really duck eggs are usually the most sure of any eggs in early spring.

One hundred and five turkey eggs were shipped in a non-returnable egg case, about as thick as an ordinary orange box. The eggs were in fillers all right, and had there been plenty of excelsior in the bottom of the case to stand he jar, would have been all right; but there was not a particle of anything in the bottom of the case except the one cardboard flat belonging to the fillers. Quite a number of the lower tier of eggs were broken, but those higher up were all right.

Now in shipping eggs for hatching, the main thing is to secure them against breakage and jarring, as sometimes a jar that does not break the shell will break the germ inside the shell. Of course, this is just as bad as though the shell was broken. In fact, it causes more trouble between buyer and seller than when the evidence is at hand as broken shells.

The very best thing I ever found to prevent jars and breakage in eggs is a good bed of excelsior for the eggs to rest on. In packing baskets, line the basket bottom and sides all around with at least four inches of excelsior, wrap each egg separately in paper, tuck a little excelsior in between, and lay the eggs snugly on the bottom or lower tier. Put a layer of excelsior over that, then a layer of eggs, and crown the package with a good, thick crust of the same material. Then if the expressmen drop the basket or throw something on it, the covering saves the eggs from getting either jarred or broken.

Sometimes it will happen that eggs are injured in transit in spite of all we can do, but when we take precautions that is all we can do, except to try to satisfy a customer.

But in order that the express people may do their part, every package should be labeled, "Eggs for Hatching" in big type, the address of the shipper, and the party they are shipped to, and the value of the eggs in the package written on the address or tag.

All these items are necessary if you are catering to the trade and expect the express company to carry your shipments safely; or if lost or broken, to collect for them.

It is always best to have printed egg labels, but if none are at hand, write out in large letters as follows:

EGGS FOR HATCHING
To Mr. John Doe,
19 Madine St.,
Chico, Cal.
Value $10.00
From:
T. F. Simpson,
Fresno, Cal.

Get your chickens used to a mixture of grains, recommends the University of California, and then economize by feeding a larger share of the variety that is cheapest, but always feed a variety.

Sick Hens.—A letter has been received from a subscriber at Petaluma in which he states that he has some hens that are thin, weak on their hind legs and go about with much effort. Their combs are red and eyes fairly bright. They spend most of their time in a droopy posiion and while they eat they appear to have nothing in their crops.

If the combs of these hens were pale I would say they had consumption, as all other symptoms are the same. If they had liver trouble the combs would be more of a purple color than bright red, but if these hens are allowed to live their time out and the disease runs its course I believe the combs will turn pale and they will die of consumption. Better kill them and burn the bodies.

Turkey Troubles.—Another subscriber writes, "My turkeys did fine through the rainy season till last week. One took sick and would not eat or drink, was gasping for breath and rattled in the throat, shaking her head. I gave her turpentine and milk, after which she laid around for a week and then died."

The price of a crate of fowls is usually based on the quality and value of the poorest birds in the lot.

At this season of the year many poultry-keepers are trying to discover why spring hatching results were not more satisfactory. Those who failed to properly disinfect the incubators are seeking a proper method of doing so in future. Others are puzzled regarding ventilation and how to regulate it by observing the shrinkage of the egg. And some are doubtful about the period necessary to incubate various eggs.

VALUABLE POINTERS ON INCUBATION.

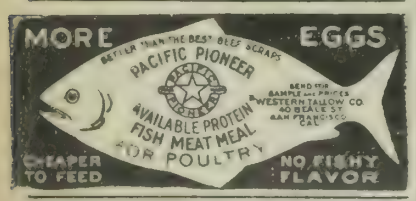
[By Geo. H. Croley.]

Disinfecting the Incubator.—Owing to the prevalence of white diarrhoea, coccidiosis, and other germ diseases affecting baby chicks, there is a demand for some positive means of disinfecting the incubator other than washing it with fluids which do not always kill all these germs. The following is a simple and inexpensive method which creates a gas that penetrates every minute crevice and absolutely gets them all; even those that are sometimes carried by dust into the fresh-air flues and other top parts of the machine. Entire incubator rooms and brooder houses may be thoroughly disinfected by this means, if they can be tightly closed:

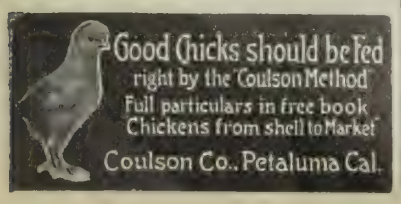
First carefully close all openings that may admit air into the egg chamber except the door. For approximately every cubic foot of space in the incubator use 1-24 ounce (20 grains or 1 scruple) of permanganate of potash—small crystals—and ⅛ fluid ounce of formalin, which contains 40 per cent of formaldehyde. Place a pan in the incubator containing the potash on which pour the formalin from a cup or other open vessel (never pour from a bottle; it pours too slowly) and instantly close the door. Usually in one hour all germs are killed, but the incubator may be left closed for any length of time. After removing the obstructions and two or three hours of airing, the incubator may be filled with eggs for the next hatch; the remaining odor will do no harm. A much greater quantity of fumigating material may be used, but in that case the machine must be aired for a longer period.

Proper Air Cell. — Beginners should faithfully follow the manufacturers' directions for operating an incubator and then the proper shrinkage of eggs usually follows as a matter of course. But there is much confusion in the minds of many inexperienced operators regarding this feature of incubation, because the normal shrinkage is much greater than expected. The accompanying illustration shows the proper size of the air-space in a perfect egg before placing in the incubator and on the seventh, fourteenth and nineteenth day of incubation. The exact shape of the air-space may vary considerably in different eggs, but the relative size should be as illustrated. This diagram is the result of careful examination of many thousands of eggs, and may be accepted as correct.

Periods of Incubation.—The period of incubation differs in the vari-







California Poultry Practice

Every poultry raiser of California should have this book. It is very practical and will help make your business profitable. In the preface of the book the author says:

"This book is not an accident; it is born of a desire to help others to avoid the stumbling-blocks in the poultry business, and at the request of many readers of The Pacific Rural Press, and other papers.

"With forty-two years of experience with poultry it is expected that I have learned a few things about it; it's a poor business that does not teach lessons in that length of time. Don't you think so?

"There are books, yes, books without number, on poultry matters, but many of them are mostly theory. This book tells you just what I have done and how I would do it.

"It is a book of action, and it is action that counts these days. We have to act in the living present if we want to live. I want to live and I want others to live, too, and as I have learned these things by experience it is fitting that I should tell others how to obtain results without paying such a big price for the experience.

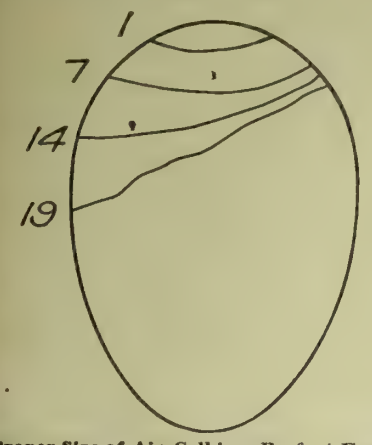
"The things told you in this book are original, unorthodox, but strictly practical; and if you will read and then heed, you will be well satisfied that the author has given you your money's worth. California is an empire in itself, and I am sure there are enough men and women engaged in the poultry business, or wanting to get into it, to call for a million copies of this book, though its only claim is that it is needed."

The book contains 157 pages, besides illustrations. The 45 chapters cover every phase of poultry culture from eggs to hens, and from hens to market. Feeding, housing and parasites.

Pacific Rural Press, Publishers

525 Market Street **San Francisco, California**

ous species of fowls. The table below shows the normal periods, which may vary somewhat with conditions. The hatch may run one or two days over for the following reasons: When the incubator is run at a too low temperature; excessive cooling; and to the use of stale eggs. On the



Proper Size of Air-Cell in a Perfect Egg.

other hand, the eggs may hatch earlier because the temperature has been too high or the eggs have not had sufficient cooling. If the eggs have been chilled or overheated, continue the hatch but test frequently. Youngsters have been hatched from eggs that have been left out of the incubator all night as well as from eggs which have been subjected to a temperature of over 110 degrees F. for a short time.

	Periods of Incubation.
Hen	21 days
Pheasant	22-24 "
Duck	28 "
Duck (Muscovy)	33-35 "
Turkey	28 "
Peafowl	28 "
Guinea	26-28 "
Goose	30-34 "
Ostrich	42 "

DUST CHICKS FOR LICE.

To the Editor: Tell me how to kill lice on chicks that are six to ten weeks old. With 400 or more to treat, handling one at a time is too slow. Is powder or liquid better?—H. L. H., Coachella.

[Answered by Geo. H. Croley.]

[Liquids are not recommended because the fumes stunt the growth of chicks as young as these. It pays to handle each chick carefully and dust it thoroughly with insect powder, repeating in about ten days. Handling them not only insures a good job, but it helps to make them gentle. Timid, frightened chicks seldom grow into profitable fowls. Many failures occur from this cause. It pays wonderfully to make chicks tame, and handling, while young, is the best way to begin. There are machines into which, with insect powder, 20 or 30 chicks are placed at one time. By means of a handle, this receptable is turned like a churn, and in the mad scramble of chicks, the powder is driven into the plumage. Another rapid-fire method is to put the chicks in a shallow box over which stretch muslin. On this cloth place insect powder or air-slacked lime and then beat violently with a lath. This will so thoroughly frighten the chicks, their plumage will more or less "stand on end" allowing the dust to thoroughly penetrate to the skin.]

Fine dust, or moldy earth or straw in the brooder causes great loss of chicks. Use clean sand, burlap, or bright sweet straw.

BEST WINTER LAYERS—PRESERVING EGGS.

To the Editor: Can eggs be added to those already in water glass, and how long will the brine be good? What breed of chickens do you consider best winter layers?—Old Subscriber, Antioch.

[Answered by Geo. H. Croley.]

[Eggs may be added from time to time with fair results, but when possible put down each lot of eggs in a separate container, cover to keep out dust and reduce evaporation, and do not disturb until it is advisable to begin using them. The water glass solution undergoes little or no chemical change and may be saved for future use, but it should be heated and skimmed before using Nearly every breed of fowls has broken records, at one time or another, as winter layers. An English lecturer says, "The variety the owner likes best will be his greatest winter layers because he will give them the most care." In central California, as a general rule, any of the general purpose, or dual purpose, breeds lay more eggs than the small breeds in winter with ordinary care and attention.]

RAISINS PREVENT LAYING.

To the Editor: Do green grapes, raisins, or grape seeds have any effect on laying hens? My hens have been running to cull Malaga grapes this winter and have laid fewer eggs than common with the same kind of chickens fed the same kind of feed.—H. B. P., Clovis.

[Answered by Geo. H. Croley.]

[All of the grape products mentioned will seriously interfere with egg production and sometimes cause hens to stop laying entirely. The buds of the grape vines will also do the same. Tomatoes, tomato peelings, and seeds have a similar effect. In fact almost any acidity in any variety of fruit more or less checks egg production, chiefly because the acid either neutralizes the calcium carbonate, or lime, or prevents its proper assimilation and formation into the egg shell. The hen lays few eggs or none when the necessary supply of material for any portion of the eggs is not properly supplied.]

POULTRY NEWS NOTES.

[By Geo. H. Croley.]

The Cedarhurst ranches report that Indian Runner duck eggs sell better in the Sacramento free market than hen eggs. Their 160 Runners laid 23,000 eggs during the year ending Jan. 30, 1916. They have just received four drakes of the Hurstburger strain imported from Indiana.

Thirteen S. C. Rhode Island Red hens, belonging to Wilbur W. Wright of Auburn, from Jan. 1 to Mar. 1, produced 520 eggs. When set in incubators they tested 97 per cent fertile and hatched 92 per cent. They were fed a scratch grain feed, fed in the litter morning and evening, and the ration was balanced with an egg mash fed dry in hoppers. They also had a constant supply of broken shell, charcoal, and bone in separate hoppers.

Never feed sweet milk and sour milk to the same lot of fowls. Either kind of milk is good, but do not change after the fowls are accustomed to one or the other.

If pasture is available during the greater part of the year, geese can be produced for a less cost per pound of flesh than any other domestic animal.

Poultry Breeders Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

ALL KINDS OF BREEDING and laying hens, roosters and pullets. Petaluma incubators, new and used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minorcas, Buff, White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards, 2550 San Pablo Ave., Oakland, Cal. Closed Sundays.

LIVABLE BABY CHICKS—We are supplied by reliable Breeders and experienced hatchers. Better chicks cannot be had from any source. All varieties, any number. High quality birds, bargain prices, breeders, laying hens, pullets. **Free exhibit.** Everything in Poultry, Pigeons, Rabbits, Dogs, Cats, Canaries, Pets. Give us a call or write. **Fanciers' Exchange,** 642 S. Main St., Los Angeles, Cal.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. Lay most when prices highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for heavy laying. Eggs, chicks, stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs., Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired Heavy Winter Layers. W. C. Smith, Prop. Corning, Cal.

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Calif.

ANCONAS—Standard-bred—UTILITY. 243 Egg strain official Missouri State Record. The BEST to be had REGARDLESS of PRICE. Unequaled for large egg production. Satisfaction guaranteed. REDUCED PRICES on Breeding Stock and Eggs for April and May. Write now. G. F. Leckner, Tulare, California.

OUR APRIL AND MAY HATCHED—White Leghorn chicks will make good layers in the Fall when eggs are high. Our breeders averaged 171.2 eggs in 1915, flock of 635. Large percentage winter eggs. Chicks, $10.00 per hundred. Order at once. Brooke Farm, Rancho Del Paso, Sacramento, Cal. Office 807 J St.

WELL HATCHED AND STRONG day-old chicks from healthy vigorous breeders. White and Brown Leghorns per 100, February $11, March $10, April $9. Reduction in quantities. Let us send you our announcement. San Jose Hatchery, 373 Meridian Road, San Jose, Cal. **Chicks well hatched are half-raised.**

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396, Los Gatos, Cal.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

BABY CHICKS—All sturdy youngsters from good stock and hatched right. Rhode Island Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

BUFF ORPINGTONS, BUFF LEGHORNS, BOURBON RED TURKEYS, BUFF DUCKS—Winners at Riverside, Pasadena, Los Angeles and San Francisco. Breeding stock. Hatching eggs. Baby stock. Free illustrated booklet. The Ferris Ranch, R. 2, 144D Pomona, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., INC., Poultry Supplies, San Francisco.

BABY CHICKS—EGGS—Rhode Island Reds, White Leghorns: Settings, 100s, 1000s. Our famous heavy layers. Hatched right in $60,000.00 brick and concrete hatchery. Pebbleside Poultry Farm, Sunnyvale, Cal. Prices reasonable.

ORDER NOW if you want strong, healthy S. C. White Leghorn chicks from Jackman's pure-bred egg producers, $80 per thousand. Hatching eggs, $4 per hundred. Sunnyside Poultry Farm, Route 2, 1610 Vine St., Sacramento, Cal.

BABY CHICKS—White Leghorn, Black Minorcas. We guarantee safe arrival and full count. Strong, vigorous chicks. 1916 catalogue contains instructions on care of baby chicks. Free. Lasher's Hatchery, Petaluma, Cal.

INCUBATOR CHICKS—White Plymouth Rock, White and Brown Leghorn. Highest class of stock bred to standard and to lay. If you are interested in the best send for Catalogue. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

CHICKS—Day-old chicks from my healthy, vigorous, heavy-laying, free range stock of Hoganized S. C. White Leghorns. Price, $7 per hundred. H. P. Hansen, Route 4, Box 177, Petaluma, Cal.

BUFF ORPINGTONS—Eggs from high-class matings that have correct color, shape and large size. Choice exhibition and utility stock for sale. No chicks. E. J. TALBOTT, San Mateo

THE SANTA CLARA VALLEY HATCHERY has the goods to offer in 9 varieties of baby chicks and will book orders for Ducklings—White Pekins and Indian Runners. Route 6, San Jose, Cal.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

ANCONA EGGS from prize-winners. $3 per 15. Utility, $2 per 15. E. T. W. Barnes, Sisson, Cal.

HATCHING EGGS from thoroughbred Barred Rocks, White Rocks, Reds, $1.50 per 15, prepaid; Buff Minorcas, Blue Andalusians, $2; Indian Runners, $1.45. Six Buff cocks, $2.50 up. Cedarhurst Ranches, Route 2, Box 1462, Sacramento.

BABY CHICKS—Strong and healthy from high-bred, free-range White Leghorn stock. Prices on application. Also orders taken for day-old chicks from other breeds. Western Hatchery, W. S. Waldorf, Petaluma, Cal.

BABY CHICKS—White Leghorns, $9.50 per 100; $45 per 500; $90 per 1000. Express prepaid and full count of live chicks guaranteed at destination Oswald Miller Robertson, Roseneath Egg Ranch, Arlington, Cal.

SINGLE-COMB RHODE ISLAND REDS—Hatching eggs, baby chicks and breeding stock. Wonderful egg-laying strain. One of the best show records in the state. J. M. Hacock, Dept. R, Box 393, Fresno, Cal.

FOR SALE—Barred Rock eggs from fine large prize-strain. Extra fine layers $1.50 per 15; $7.50 per 100. Miss F. W. Buckley, R. F. D., Box 71, West Berkeley

ENGLISH WHITE LEGHORNS—Peerless Anconas. Hoganized. All 200-egg strain. Eggs, $1.25 per 15; $6.00 per hundred. Roseville Poultry Ranch, Roseville, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorcas, White Leghorn stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

HATCHING EGGS from Hoganized S. C. White Leghorns. Bred to lay. High fertility this year. Send for circular. R. H. Dickinson, Los Gatos, Cal.

WHITE ORPINGTONS AND BUTTERCUPS—Hoganized and Tested—220 egg strain breeders. Chicks and eggs for sale. M. S. Woodrams, San Mateo, Cal.

S. C. W. LEGHORN EGGS for hatching from selected, strong and vigorous hens. All 200 egg type. 15, $1.50; 100, $6. Jay Maxwell, Madera, Cal.

BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trapnested stock. Fairmead Poultry Farm, Fairmead, Cal.

HERE IT IS—White Rock baby chicks. $15 per 100. Hatching eggs, $1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ceres, Cal.

BABY CHICKS from Hoganized Single-Camb White Leghorns, 4th and 5th awards at P. P. I. E. for 280 egg type Tupman Poultry Farm, Ceres.

ORPINGTONS, BUFF and WHITE—Black Minorcas and Carneaux Pigeons. Cockerels ready for service. Susan Swaysgood, Route 2, Pomona, Cal.

WHITE WYANDOTTES—Blue ribbon winners. Cockerels, Pens. Eggs. Runner Ducks, $1 each. R. W. Stawetski, Route 2, San Jose.

BLACK MINORCA, BUFF ORPINGTON, R. I. Reds; eggs for hatching. Also cockerels for sale. Mrs. R. A. Holdridge, Box 282, Dixon, Cal.

EAST-SACRAMENTO HATCHERY—Capacity 16,000. Special low price for large lots of chicks. Box 1205, M St. Road, Sacramento, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and cockerels. E. C. Quessenberry, R. 4, Lodi, Cal.

SPECIAL—Barred Rock and Rhode Island Red chicks, $12.50 per 100. Safe arrival guaranteed. G. L. Hawley, Madera, Cal.

RHODE ISLAND RED BABY CHICKS and Eggs. Heavy laying strain. Send for circular. Rosedale Ranch, R. 1, Hayward, Cal.

TRAPNESTED LEGHORNS — White and Buff Stock. Eggs, chickens. Arthur R. Schroeder, Box 179E, Mountain View, Cal.

BUFF ORPINGTONS—Eggs, $3.00, $2.00. Runner Ducks, $1.50. Baby Stock. Glendale, Fleming Ave., San Jose, Cal.

BABY CHICKS—White Leghorns exclusively. Utility stock. 13 years' experience. F. W. Wilson, Route 7, Santa Rosa

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

BLACK MINORCA COCKERELS — Eggs, Trios. Reasonable. Chester Forgate, Campbell, Cal.

BUFF WYANDOTTE EGGS—$1.50 and $2 per setting. C. B. Christiansen, Dinuba, Cal.

GUINEA EGGS FOR HATCHING—15 for $1, postpaid. Hazel Holmes, San Miguel, Cal.

TURKEYS, DUCKS AND GEESE.

BUFF DUCKS—Weigh like a Pekin and lay like a Runner. Winners at Panama-Pacific and Los Angeles. "Victoria" has laid 142 large, white-shelled eggs in 148 consecutive days. Eggs. Baby Ducks. The Ferris Ranch, R. 2, 144D, Pomona, Cal

TOULOUSE GEEESE—2 years old, now laying. Either sex, $3.00. Eggs from my flock, including best show birds, 30c each. Order from this ad and we will ship the day you say. M. F. Giddings, 245 Tokay St., Lodi, Cal.

BOURBON RED TURKEYS—Four firsts on males at Panama-Pacific and Los Angeles 1916. The best Bourbons west of the Rockies. Eggs. Poults. The Ferris Ranch, R. 2, 144D, Pomona, Cal.

HART'S BRONZE TURKEYS — Vigorous young stock. Eggs by the setting or incubator lots. Circulars free. Albert M. Hart, Clements, Cal.

INDIAN RUNNER DRAKES, $2.50 each, and a few choice hens. Settings, $1.50. Sturgeon Bros., Lemoore, Cal.

FOR SALE—Thoroughbred Rouen Duck Eggs, $1.25 per dozen. $10 per 100. W. J. Miller, Farmington, Cal.

PEKIN DUCK EGGS for hatching, $1.00 per dozen. L. D. Collins, R. F. D., 54G, Denair, Cal.

PHEASANTS—Golden and Ringneck. Eggs from April on. T. D. Morris, Agua Caliente, Cal.

HARES AND RABBITS.

LEADING RABBITRY IN AMERICA—Flemish Giants and New Zealands. Cut your living expenses. Catalogue free. Empire Rabbitry, Empire, Cal.

BELGIAN HARES—Young stock for sale. Hurd Bros., St Helena, Cal.

NEW ZEALAND REDS—Belgians. Box 268, St. Helena, Cal.

The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends: These beautiful days make us all realize that it really is only a very short time until summer will be here.

To some of you summer brings excessive heat, and it is to you that my talk this week is directed. All of you who have electricity can have electric appliances that not only make your work easier but add greatly to your comfort. Take, for example, an electric fan—why not have one installed and by causing the air to circulate, seemingly keep down the temperature of the house? In the middle west electric fans are run all night in some cases, to help make sleep possible.

Another convenience that no woman should be without is an electric iron. Some of the very best cost less than $5 and they pay for themselves many times over in comfort and the cost of operating them is very small.

The vacuum cleaners are another boon to woman. They almost eliminate sweeping except in the kitchen and porches, and if you wish to purchase the appliances that go with them you can remove all dust and lint from curtains, mattresses, pillows and clothing.

The new vacuum that has the revolving brush to pick up lint, thread, etc., is far superior to the old type, but is also more expensive. I attended a demonstration the other day and the work done was really wonderful.

The machine weighs less than twenty pounds, which is another point in its favor; some of the old style type were too heavy to be lifted or carried around with any comfort.

I wonder how many of you have washing machines that must be run by hand. I saw in one enterprising farm home a machine run by electric motor, and in the same home a motor for the sewing machine, and the mistress of the house assured me it was as interesting to sew with an electric motor as to run an automobile.

Fireless cookers are a convenience that are not dependent on electric current and I hope there are many of them in the warm valleys. Even in cities there are many in use, some families that I know of attending church while the dinner is progressing to completion in the cooker.

There are many dishes such as beans, cereals, rice, stews and dried fruits which require long, slow cooking that are particularly good cooked in a cooker.

Prices range according to size and style and number of openings.

Devotedly, Rosabella Best.

George Washington, Junior.—A farmer who was blessed with a son with an engaging frankness of speech, sent him to the miller's one day. The lad got hold of the miller, and submitted for his inspection a handful of wheat. The miller studied the wheat attentively, and then said to the boy: "How much more has your father got of this?" "He ain't got no more like it," the boy answered. "He's been all mornin' pickin' that out."



Four little kiddoes, happy as can be,
Sitting in a heap of snow, beside a tall palm tree—
Impossible? Indeed not, for all of you can see
That this is snow white cotton, from Imperial Valley.

CAUSES OF COLDS.

The two most common causes of colds are over-eating and chill.

The over-indulgence in meat eating, thereby producing excessive quantities of uric acid, lowers the vital resistance, so that colds are the natural result.

The presence in the mouth of innumerable bacteria, ready for action whenever the system is run down or over-fatigued, makes it necessary to give careful attention to the state of the teeth and throat. An antisepic mouth wash used at night is recommended.

Churches and halls, and even homes, when poorly ventilated, are responsible for congestive colds. If one is so unfortunate as to be continually contracting colds, the first step is to try to overcome the tendency. This can be done by exercising and working in the open air when possible and by using water freely on both the inside and outside of the body. Fresh air sleeping rooms are a wonderful help. Do not overload the body with clothing, but wear enough to keep warm.

VARIEGATED POPPIES.

There is a new variegated California poppy on the market now that makes a most beautiful flower bed. The foliage is just the same as the yellow poppy and the flowers are shaped the same, but range in color from cream and the palest pinks to a deep rose and occasionally a deep bronze one appears. The flowers open in the bright sunshine and make a wonderfully attractive bed. The seeds can be planted any time now and the plants live on through the winter, so that another year, you have flowers very early.

The Name that Fitted.—Little Johnny—"Dad, there's a girl at our school whom we call Postscript." Dad—"Postscript? What do you call her Postscript for?" Little Johnny—"'Cos her name is Adeline Moore."

SMALLPOX VS. CHICKENPOX.

A new and conclusive method for distinguishing between smallpox and chickenpox has been discovered by Dr. Force, who is a member of the medical faculty at the State University.

Dr. Force's method is to take rabbits that have been vaccinated and rendered thoroughly immune to smallpox and inocluate them with material from the doubtful case, and at the same time inoculate with the vaccine for smallpox. If in twenty-four hours a definite reaction of immunity shows on the skin where the vaccine has been applied and no reaction whatever where the material from the suspected case was applied, it proves without a doubt that the suspected case was chickenpox, not smallpox.

This new method has now for the first time been used in public health work and will be of great value to communities and a great blessing to persons who might be subjected to long quarantine, if the nature of the ailment had to be ascertained by the ordinary methods.

SCARLET VERBENAS.

In a ride through the Santa Clara Valley last Sunday, at one of the country homes, I saw a most wonderful bed of scarlet verbena. The flowers occupied a triangular plot of ground adjoining the house and I was told, bloom practically the year round. I was so charmed with them that I want to recommend them to all of you as a very satisfactory flower, doing pretty well under all conditions, but responding wonderfully well to good soil, warm exposure and water. Plants are readily grown from cuttings, from running stems which surface root themselves and from seed. There are many color creations offered, light purple being one of the most popular.

F. A. H.

CONTRIBUTED DATE JAM RECIPE.

By Mrs. P. H. Ralph, Edison, Calif.

Take a pound and a half of dates, one pound of brown sugar, one to two cupfuls of nut meats. Wash and stone the dates, cook in plenty of water till soft and mushy. Add sugar and stir often. When thick enough, remove from fire and add nuts. This is easily and quickly made and is fine for sandwiches.

KEEPING PEOPLE WELL.

Keeping people well is a new profession for women. All who are interested in that line of work will be glad to know that the State University is going to have courses in the next summer session at Berkeley, from June 26 to August 5, along those lines.

There will be training for visiting nurses in school departments, neighborhood nurses whose help can be procured by young mothers, professional nurses, teachers of hygiene and physical education, or social service workers who follow hospital cases and aid the family in removing the cause of illness.

Six well-known California experts are to lecture on "The Social Aspects of Public Health," and Dr. Adelaide Brown (a member of the State Board of Health) is to lecture twice a week on various applications of personal hygiene and public health to the welfare of women and children.

A "first aid" course to teach how to handle emergencies, how to bandage, apply splints, or start artificial respiration and home care of the sick will be given by Dr. Kate Gompertz.

How to prevent the spread of communicable diseases will be taught in a course by Professor John N. Force.

WHITE SKIRTS.

If you want the newest thing in separate white skirts, get a good quality of china silk, using about four widths of 36 in. silk and after turning a deep hem, either pleat it yourself or have it done at a pleating shop in small box pleats. It adds to the appearance to have two deep tucks above the hem, but of course that necessitates more material.

Do not get too thin a silk as the pleats will not stay in. With this skirt, you can wear any dainty crepe de chine or lingerie blouse, and be daintily dressed for almost any occasion. For a wrap over this costume, nothing is prettier nor more appropriate than the Italian silk sport coats made of solid colors, rose, blue, yellow and lavender, with white silk collar, cuffs and sash.

By the way, this material can be bought by the yard and anyone clever with the needle could make a coat at half the price of the ready made ones.

SILK SHADES.

If you have a lamp you want to improve the appearance of, make a new shade for it. You can buy the wire frames and use for a covering any material that appeals to you. A great many are made of China silk, either gathered or pleated and finished with a fancy guimpe or fringe. There are also some styles in petal effect, produced by cutting the silk in form of petals and sewing to a foundation. There are also some made of flowered cretonne and in one very attractive room of a Colonial house the lamp and candle shades were of a figured voile, of the same pattern as the ruffled curtains at the windows.

BY AND BY.

By Mary Bartlett Smith.

ere's a white, white cloud in the blue summer sky,
d it floats very high and far away;
d a boy cannot study, for he's busy all the time
nning what he's going to do by and by.

ere's a white, white sail out across the shining sea,
inging slowly o'er the waves to far-off shores;
d a boy cannot work where the ocean sands lie warm,
r he's dreaming where he'd best like to be.

ere's a white, white road leading over hill and vale,
d a traveller riding swiftly on and on;
d a boy cannot loiter, for the future's far away,
d he's running with the strong who never fail.

ere are white, white thoughts, ever sweet and brave and true,
dden deep where the secrets bud and grow;
d a boy cannot tell you all the Father whispers low,
r he's busy with the task he means to do.

WISDOM OF A DOG.

Senator was a magnificent black-d-white pointer, whose great in-lligence and long years of service d greatly endeared him to his mas-r—who was an officer in the army -and his mistress. They had no ildren, and lavished their great fection on him. Being full of ars, and a greatly privileged char-ter, Senator had pre-empted a rug fore the grate fire as his sleeping ace, and always in the evening he as to be seen taking his ease in that ace.

One evening there was a card party the house, and one of the tables ppened to be placed over Senator's sting place. Senator did not like at, and after trying several places, ne of which just suited him, he gan to yawn and stretch, and com-g to the obstructing table, tried to ush it out of the way. He was of urse reproved by the lady of the use, and it was evident that he as very unhappy. He wandered und disconsolately, quite upset be-use he could not get back to his vorite resting place.

All at once he made up his mind; e ran over to a divan on which the fficers had thrown their caps; he ized one in his mouth, came over the officer sitting nearest the fire-lace, and shoved the cap into the of-cer's lap, with a whine as much as say, "Please go, I am past my leepy time!"

It is unnecessary to add that his ppeal was heeded, and that Senator t once got his place.—Youth's Com-anion.

She was a little girl, and very po-te. It was the first time she had een on a visit alone, and she had een carefully instructed how to be-ave. "If they ask you to dine with hem," father had said, "you must ay, 'No, thank you; I have already ined.'" "Come along, Mildred," aid her little friend's father. "You nust have a bite with us." "No, hank you," said the little girl, with lignity, "I have already bitten."—Exchange.

The flavor and quality of eggs are reatly affected by the food eaten by he fowls.

BANKING BY MAIL.

[Written for Pacific Rural Press by T. E. Ivey, Los Angeles.]

By looking backward a few years, we are able to comprehend and appreciate the wonderful advancement and achievement of man in every line of endeavor. From the pine torch and tallow candle to the incandescent light, and from the two wheel Spanish cart that carried the padres from mission to mission in this beautiful land of sunshine not so many years ago, to the limousine which glides along the boulevards so noiselessly and quickly, are striking examples of progress and the inventive genius of man.

Probably there has been no greater progress in any line of business than that of banking; a business which affects everyone, whether they be rich or poor. The value of every article of wearing apparel, all or at least nearly all that we eat, every tool we use, the home that shelters us, at some time finds its way into the banks to be divided up among the laborers, the manufacturers, the mechanics, the farmers and those whose genius has created a demand for newer and better articles, and has made it possible for us to use and make use of the thousands of things which bring comfort and contribute to our well being.

Not so many years ago a very large percentage of the money in the United States was buried or hidden by its owners for safe keeping. This money was thus taken out of circulation, out of the channels of commerce, and placed where it did no one any good, and many times the owners,—fathers and mothers of children dependent upon them,—were robbed or death claimed them, and the hiding place of their treasures never discovered. The principal reason for thus hiding the money of course was the scarcity and inaccessibility of the banks and the question of their solvency.

There is scarcely any comparison between the old private bank of the early days and the modern bank of today, surrounded as it is by every safeguard that man can devise for the protection of the depositor. California is particularly fortunate in having banking laws which almost entirely eliminate the possibility of failures. For the different departments, i. e.: Savings, Commercial and Trust Departments, separate reserves are kept. The law provides on what kinds of property loans can be made,—thus out of, the Savings Department loans can only be made on first mortgages at not more than 60 per cent of the appraised valuations. Thoroughly competent and experienced examiners make periodical examination of the bank, and the Superintendent of Banks is empowered to take charge of any institution which fails to live up to the laws that have been enacted by our State.

A fact which hardly seems possible but which is nevertheless true, is that comparatively few of the people living in the suburbs of cities, on farms and in the more remote places, take advantage of the accommodations offered by the large city banks. They seem to forget that the same mail carrier who brings them a letter from "back East," and leaves their weekly newspaper, can just as easily make their deposits for them, cash their checks, buy their drafts, and in fact, do all their banking business without the least danger of loss and with no expenditure of time or carfare.

There are many other advantages in doing business with a bank in the city.

In the first place, by having a bank account with a city bank, you have a place to go to, a friend to call upon, someone to direct you to any place you might care to visit, who will unselfishly advise you on any subject on which you need advice. The city banker's time is devoted entirely to the banking business,—he doesn't try to sell you something or ask of you any favors. He prospers as you prosper, and the more successful you become, the better it pleases him.

The ease and simplicity with which one can open an account is of much value to those living outside the city. All that is necessary is to buy a postoffice order, or send a draft, check or the money, enclosing it in a letter addressed to the bank with the information that you desire to open an account,—or if you desire to write a letter for information before making your deposit, you will receive a courteous reply with all the particulars you desire. The withdrawing of funds is just as simple,—mail your book to the bank with a letter requesting the amount of money you wish and the book will be returned to you together with the money desired, by registered insured mail, the charge being merely postage and the cost of insurance, which will be small when the time saved is considered.

A man, in justice to himself, should have a savings account. There comes a time in every man's life, even though he be honest and hard working, and having the respect and confidence of everyone, when he must give way to a younger man. He cannot always keep up the standard of work which perhaps he himself, in his earlier days, has set; or sickness may come, or accident. How many of your friends are able, even though they be ready, to help you in times like these?

There is nothing which gives a man more confidence, makes him better able to meet conditions as they come, or to take advantage of any opportunity for his betterment, than to have, at his instant demand, a substantial savings account. If a man teaches his children to save while they are young, it will be a great blessing to them in later years.

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HOW TO PICKLE LIMES.

To the Editor: Would you kindly give me through your paper a receipt for pickling limes.—A constant reader, Nordhoff.

[Who will kindly send a tested recipe?—Editor.]

FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS.

San Francisco, March 29, 1916.

WHEAT.

With reports of a crop damage in the East. the larger markets have shown an upward tendency, which is to some extent reflected on the Coast. There appears to be very little on hand here, and buyers look for higher prices in the north. Local quotations, however, stand about as before.

Cal. Club, ctl	$1.65@1.70
Northern Bluestem	1.85@1.90
Northern Red	1.85@1.95

BARLEY.

The local barley market again shows a firmer tone this week. Buyers are taking a little more interest, and offerings have been light, with indications that the local supply is getting down to small proportions.

Shipping, ctl	$1.40 @1.42½
Choice Feed, ctl.	1.35 @1.37½

OATS.

White oats are quoted a little lower, with plenty of stock and no large demand, other grades standing as before.

Red Feed	$1.35@1.37½
Red Seed	1.45@1.65
White	1.45@1.50

CORN.

The Eastern corn market shows a little firmer tendency, but there has been no definite upward movement. Good white Egyptian is a little stronger here, but holders of inferior stock are anxious to sell at lower prices.

Eastern Yellow, ctl.	$1.80@1.85
Milo Maize	1.40@1.45
Kaffir	1.60@1.65
Egyptian	1.50@1.57½

BEANS.

This week has brought the first sign of revival in beans that has been observed in a long time, and there is still no assurance of improvement. The Eastern market on large whites has advanced a little, and some inquiries are coming in, causing a slight advance here; and Stockton interests report a better movement in several lines, though this is now borne out by the San Francisco trade. Limas are quoted a little higher, but the market is in poor shape, with little demand and unusually large stocks for this time of year. Bayos and Blackeyes are both lower.

(On wharf, San Francisco.)

Bayos, per ctl.	$4.50@4.60
Blackeyes	3.00@3.10
Cranberry Beans	4.75@4.85
Horse Beans	3.00@3.25
Small Whites (south)	5.75@5.80
Large Whites	5.75@5.90
Pinks	4.30@4.40
Limas (south)	4.35@4.45
Red Kidney	6.50@6.75
Mexican Reds	4.50@4.65
Tepary Beans	4.00

SEEDS.

The seed market is quieting down all round, as the planting season in the lines quoted is over. Values are steadily held.

Melilotus Alba, lb.	23 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	5 c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Alfalfa, per lb.	22 @24 c
Sudan Grass	40 c

HAY.

Arrivals are still decreasing, but the local market has been sluggish and easy, with frequent concessions in price, as most buyers have loaded up during the last few weeks. The country market is stronger, with stocks very light in most quarters, and a continuation of present shipments would soon clean them up. There is still considerable buying in the interior, but the demand is dropping off now, and while there is a good deal of shipping up and down the coast there is no export inquiry. Crop conditions are very encouraging. Alfalfa is lower, with new hay expected shortly.

No. 1 Wheat	$13.00@16.50
No. 2	12.00@14.50
Tame Oats	12.00@18.00
Wild Oats	12.00@14.00
Alfalfa	12.00@15.00
Stock Hay	10.00@12.00
Straw, per bale	25@ .40

PRUNE AND 'COT GROWERS SHOULD SIT TIGHT.

THE Prune and Apricot Growers' Information Bureau has issued this advice: Sell no prunes or apricots at present prices—3½ to 4c for prunes and 8 to 9c for apricots. Very few 1915 apricots on hand and indications of a light crop in 1916. The canned apricot market is practically bare and offers of $28 to $30 do not find many sellers. Canners expected to pack a fair quantity.

The latest estimates show that not more than 6000 tons of spot prunes are available and that these are mostly in growers' hands. Comparatively few futures have been sold and growers are advised against selling before something more definite is known of the coming crop. Prune bloom was heavy but damage from winds and frost cannot yet be estimated Futures advanced in New York from 3½ to 4c, but should not sell for less than 4½c. Hold.

[Word just received from J. G. Bernecke, M. D., of Orange county says: "Complete crop failure of apricots in Orange county. Worse even than 1907. Not enough left for the birds. We'll not ship a pound to the British for love or money."—Eds.]

FEEDSTUFFS.

There has not been much change in prices for some time. With green feed quite plentiful in most quarters, the demand has been greatly curtailed.

(Wholesale prices per ton, carload lots, San Francisco.)

Beet pulp, per ton	$22.50@23.50
Alfalfa Meal, per ton.	20.00@21.00
Alfalfa Molasses Meal per ton	21.00@22.00
Bran, per ton	25.50@26.50
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00@25.00
Cracked Corn	40.50@41.50
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Tankage	45.00
Rolled Oats	29.50@31.00

VEGETABLES.

Arrivals of asparagus exceeded 7,000 boxes the first of the week, and though lighter since, prices continue to decline. The canners are now taking the surplus at the inside prices, while large shipments are going East. String beans are still pretty firmly held, and peppers are higher, with few offered. Rhubarb is easier, with abundant supplies. Peas are plentiful and cheap. Celery is scarce and high, with little of good quality offered, and lettuce also is higher. Some southern tomatoes have appeared, but Mexican stock still predominates.

Cabbage, ctl.	50@60 c
Cauliflower, doz	50@60 c
String Beans	10@15 c
Peppers, bell, lb.	15@20 c
Rhubarb, box, Bay	50@90 c
Peas	3@ 5 c
Tomatoes, Mex., box	1.50
Eggplant, lb.	10@15 c
Celery, crate	2.50@3.25
Artichokes, doz	20@50 c
Lettuce, small, crate	.75@1.25
Asparagus, box	1.50@2.00

POTATOES AND ONIONS.

Supplies of potatoes in the Delta district are getting down to very narrow compass, and prices have been advanced on both local and Oregon stock, with reports of a general shortage in sight. Delta onions are practically cleaned up, but Oregon stock is lower, with plenty offered. Some Australian have arrived, but values have not yet been established.

Oregon Burbanks	$1.75@2.10
Salinas Burbanks	2.10@2.25
Delta Burbanks	1.25@1.85
Sweet Potatoes, ctl.	2.30@2.50
Onions, Delta, ctl.	1.85@2.25
Onions, Oregon	1.30@1.50
Garlic, per lb.	8@10 c

POULTRY.

Young stock is still held at rather high prices, broilers still bringing 40 cents, and fryers as high as 35 cents, but the prices have curtailed the demand and the market is weak. Hens, however, are fairly firm at the old figure, and smooth young roosters are higher. Belgian hares are also doing better.

Turkeys, dressed	27@30c
Live Turkeys, lb	20@22c
Broilers, 15 lbs. to doz. and less, lb.	38@40c
do, over 15 lbs. to doz.	35@38c
Fryers	30@35c
Hens, extra, per lb	20c
Small	20c
Smooth Young Roosters, per lb.	23@24c
Squabs, per doz.	3.00@4.00
Geese, per pair	2.25@3.00
Ducks, young, lb.	18@19c
Old	17@18c
Belgian Hares	10@11½

Special Live Stock Market Report.

Everything in the livestock market is on a skyrocket basis. Cattle are hard to buy in the country, holders not being easily tempted to part with their stock, now that feed conditions are more certain. From all districts reports come that feed is good and the cattle doing well, but local packers are not expecting any grass cattle before May 1, and no large runs till after June 1. It looks like cattle will be worth at least a half dollar more per cwt. this year than last.

Packers were killing on spring lambs all of last week, but do not expect any strong supply before the middle of April. There is a continued scarcity of wethers and sheep and the market is strong at prices quoted.

Because of the fact that Idaho and Utah hogs were costing in excess of what local conditions would warrant, packers have quit shipping in from those sections. This places the market in the hands of California producers again, who seem possessed to force lightweights on the packer, even at a sacrifice in price. At least one large packer has turned a deaf ear to this supply the last week, absolutely declining to buy them at any price. Future prospects are bright enough to warrant everybody putting these fellows on the grain route for a time.

WOOL.

Wool is decidedly quieter, especially on six month and fall grades. This applies to the local situation as well as to conditions in the East. A local buyer states that a trip to Fresno last week failed to reveal any buying in that district and a similar trip in the lower end of the Sacramento Valley by the writer showed the same condition prevailing there. There is a fair volume of wool being moved in the Eastern markets, but it is strictly a buyers' market. Eastern prices remain about the same.

BUTTER.

The continued shipping mov... has caused another advance he... though arrivals are excepti... heavy at present. Large E... shipments continued to last ... day, and there are still Chicago ... ers in the market picking up any ... they can at suitable prices. W... large export demand, Eastern ... duction has scarcely kept pace ... consuming needs; and prices ... kept up enough to give a pro... even the last delayed shipment ... though the shippers realized ... were taking a great risk. Just ... there is a strong shipping move... to Seattle, as well as a demand ... the Alaska packers. Reports ... Australia are unfavorable for ... newal of shipments to that ma...

	Thu.	Fri.	Sat.	Mon.	Tu...
Extras	28½	28½	28½	29	29
Prime Firsts	27½	28	28	28½	28½
Firsts	27½	27½	27½	28	28

EGGS.

A heavy demand, both for ord... stock and storage pack eggs, has ... prices up a little, though sup... are coming forward in good s... The current demand includes co... erable northern business, part... which is for storage.

	Thu.	Fri.	Sat.	Mon.	Tu...
Extras	21½	21½	21½	21½	22
Sel. Pullets	18½	18½	18½	18½	18
Firsts	18½	19	19½	19½	19½

CHEESE.

Most varieties are coming in ... freely, and declines are noted in ... flats and Monterey cheese, th... Y. S.'s hold fairly steady und... brisk demand.

Y. A.'s, fancy	1...
Fancy Calif. Flats, per @	1...
Monterey Cheese	.16...

LOS ANGELES DAIRY PRICE...

	Wed.	Thu.	Fri.	Sat.	Mon...
Butter	28	28½	28	28	28
Eggs	21	21	21	21	21

DECIDUOUS FRUITS.

The first lot of strawberries ... Watsonville appeared a few days ... but they were too green to ... readily, and nothing further ... that section has yet been seen. ... Angeles stock is still in limited ... ply, but the prices are lower. A ... southern loquats have come in, ... sell readily at $2 to $2.50 per c... There has been some talk of ship... Australian apples to this market, ... with liberal stocks of storage ap... still on hand there is apparently ... tle inducement for such shipment...

Strawberries, S'n, crate	$1.50@...
Apples:	
Pearmain	.85@...
Baldwin	.75@...
Oregon Spitzenbergs	1.50@...
Jonathan	1.25@...
Loquats, crate	2.00@...

DRIED FRUITS.

Fig prices are entirely nominal ... the last crop is entirely cleaned ... and unless important condit... change the outlook is favorable ... good values for the coming ... In other lines the market is dull ... weak, as the local packers are tak... practically no interest in either ... or future goods. There is really ... tle use in quoting prices, as the ... ues are practically arbitrary, ... growers being willing to sell at w... the packers would pay. There is ... quite a lot of apples on hand, and ... view of Eastern conditions there ... little expectation of an advance ... the near future. Otherwise, ther... not enough old stock left to ca... anxiety in any line except prunes, ... which there is now a firmer feeli... Little has been done in the cour... on futures, though offers of 5 c... are reported for future peaches, ... apricots are said to have been of... ed in New York at 9½ cents. C... siderable anxiety is felt by grow... in canning districts, but it is ... early to make predictions as to ... amount that the canneries will ta... The New York Journal of Comme... says:

"Coast prunes are inclined to ... held with a firmer feeling in the ... mary markets, though prices c... tinue to be quoted on a low ba... and buying is done only for ...

quantities. The California s and growers seem to be confi- at conditions will improve af- first influences of the British o have worn off. Prices which eing shaded a week ago are held on a much firmer basis, om present indications prices be forced to a much lower

DRIED FRUITS.

.....5	@5½c
ts, per lb 6	@10 c
White	Nominal
k	Nominal
myrna	Nominal
, 4-size basis ...3½	@4 c
s 3	@3½c
.....4	@7 c

ssociated Raisin Co. Prices.)

Seeded, 16 oz. 7	c
Seeded, 16 oz. 6¾	c
n Layers, 3-crown, b. box 1.25	
l Clusters, 6-crown, b. box 2.50	
layers, 50-lb. box 2.75	

CITRUS FRUITS.

Eastern fruit markets are in uch better shape and the pros- are for good prices for the bal- f the California navel orange Shipments are going East at te of nearly 200 cars daily, under ice, and the fruit is g in good shape.

New York Monday, March 27th, s averaged on auction from to $2.85 per box. Lemons av- $2.45 to $2.65. At Cleveland me day the average prices rang- om $2.35 to $3.20 per box, mons averaged $2.50 to $2.75. icago navels averaged $2.50 to and lemons brought $2.25 to per box.

this time there have been ship- r the season over 11,500 cars Southern California, as com- with over 13,000 cars to same last year.

e San Francisco market is still supplied with oranges, but the ming demand has been a little for the last few days, and val- ave held fairly steady. Fancy s are a little stronger, and fruit is moving off well at the gures.

ges, Navels $1.75	@2.75
erines 1.50	@2.00
efruit 1.25	@2.50
ns, box 1.75	@3.50
nettes, box 1.25	@1.75

HONEY.

ports from some producing dis- indicate prospects of a large t, though it is a little early t reliable data on the matter. r prices are expected, as there een no export inquiry for some and the local requirements are rge, though present supplies are However, the high price of r may aid greatly in moving the at profitable prices.

r White, comb 13	@15 c
er 8	@12 c
er White, extracted .. 7	@ 8 c
t Amber 3	@ 4 c
..... 2	@ 2½c

NUTS.

monds are fairly well cleaned up, a few independent growers still some stock left, which they are ous to sell. The market at pres- is very quiet, and it is hard to a buyer even at easy prices. It ther early to get a line on crop pects but reports from some hern districts indicate favorable itions so far. Some damage has done by frost in the Capay Val- but how extensive is not known.

Prices f. o. b. San Francisco.)

onds (1915) .....Nominal	
nuts (1915):	
udded, per lb. 17½c	
o. 1 14	c
o. 2 11	c
umbo 17	c

LIVE STOCK.

Prices, paid for stock, live weight, cars, without feed or water, at k Yards, South S. F.)

rs, No. 1 7½	@8 c
o. 2... .....7¼	@7½c
s and Heifers, No. 1. 6½	@7 c
o. 2 .....5¾	@6 c
ls and stags 4	@5½c
ves, light 8½	@9 c
Medium 7½	@8 c
Heavy 6½	@7½c
Hogs, grain-fed:	
100 to 160 lbs.	8½c
160 to 175 lbs.	8¾c
175 to 250 lbs.	9 c
250 to 325 lbs. 8	¾c
Prime Wethers 7½	@7¾c
Full Wool Lambs 9	@9½c

DRESSED MEATS.

Steers 11¼	@11¾c
Veals, large 12½	@13 c
Small 13	@14 c
Prime Wethers 13½	@14 c
Lambs 15½	@16 c
Spring Lambs 17½	@18 c
Hogs 11½	@12 c

HORSES.

The past week has brought very few new offerings into the local market, and while there have been a good many buyers around the retail stables, there is not much life to the market.

(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs and up	$250@300
Drafters, 1550 to 1650 ..	150@225
Chunks, 1350 to 1500 lbs.	150@175
Wagon horses, 1050 to 1350 lbs. 110	@150
Green Mountain range horses, 950 to 1200 lbs.	20@ 75
Farm Workers	50@100

WOOL.

Southern, year's staple 18	@20 c
Six months 14	@16 c

HIDES.

Dry, 15 lbs. and over ..30	@31 c
Kip, 10 to 15 lbs. ...31	@32 c
Veal, 7 to 10 lbs. ..33	@34 c
Calf, under 7 lbs. ..34	@35 c
Wet Salted, Steers 17	@18 c
Cows 17	@18 c
Kip 19	@20 c
Calf and Veal 22	@23 c
Bulls and Stags 13	@14 c
Horses, dry, large $1.25	@2.25
Sheep, long wool 1.25	@1.40
Medium 1.00	@1.25
Shearlings ..... .45	@ .55

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	28.60	28.00		28.20
" 9	25.33	26.66	26.00	28.10
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	28.66	36.33	28.00	36.66
Feb. 6	26.68	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25
" 20	29.00	32.00	27.16	32.00
" 27	29.10	30.90	27.00	35.25
March 6	27.00	24.08	25.25	24.16
" 13	24.66	29.91	24.00	28.83
" 20	23.00	28.33	22.50	27.16
" 27	22.91	28.50	23.00	28.08

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 30	28.16	36.33	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50
" 13	23.00	28.90	25.10	28.00
" 20	23.60	28.66	23.58	20.33
" 27	21.40	20.30	20.80	18.50
March 6	20.50	18.33	19.00	18.00
" 13	20.66	19.50	19.00	18.91
" 20	21.00	20.00	19.66	19.08
" 27	20.83	21.41	18.50	20.83

Pub'isher's Department

Our columns this week look pretty good to us. For the past three weeks we have been offered more advertising than we could well care for. From now until fall we will carry more reading than advertising, and from the articles in hand we can promise our readers some very interesting issues of the Rural Press during that time.

One hundred and sixty-six new subscribers were added to our list last week. We are still gaining.

Many ranchers are intending to install pumping plants this spring, is the report of the Luitwieler Pumping Engine Company. H. L. Miller, manager of the Los Angeles concern, states that business is in a prosperous condition. "Carload shipments of pumps have this month been made to San Francisco and Tucson, Arizona, for use in irrigation work."

SWINDLING AGENTS.

During the past week we have had called to our attention two forms of obtaining money under false pretenses under the name of the Pacific Rural Press by fakirs in the country. One was from near Stockton where the man represented that he was furnishing rugs at a very low price to those who would renew their subscriptions to the Rural Press; another man was out taking photographs, charging $1 per dozen, 25 cents in advance, and stating that the Rural Press would print the pictures in its columns. Both these schemes were not authorized. We have no premium or special scheme offers. Our field men have a letter of credentials direct from this office and they will make no subscription offer other than the regular price—nor have they anything to sell other than the books we publish or advertising space in our columns. Before paying money to a stranger who makes any offer in our name other than the above, demand his letter of credentials. If he can not show one let us know at once, please, and we will attend to the matter.

CALIFORNIA HOG BOOK GUIDE FOR BEGINNER AND AID TO VETERAN.

(From Sacramento Bee.)

"The California Hog Book," by W. S. Guilford, President of the Glenn County Berkshire Breeders' Association, is written in such a style that the reader is convinced he could take the book with him onto a ranch and, with proper application, become a successful swine raiser.

Such a book could be written only by one who is thoroughly familiar with the hog, personally as well as theoretically. To turn out such an intimate dissertation on the profitable meat producer, the writer must have spent much time actually working with swine and getting a close understanding of their needs and troubles.

The text is strikingly in contrast with the many books turned out by some college professors who view the animal from a distance, leaving the disagreeable work of care to the herdsman and thus failing to gain experience which would enable them to write more intelligently.

Though the book ranks with the best in the land on raising of the swine, it was written for Californians who are in the hog-raising business or who may become hog raisers. In addition to containing a complete story of the origin of the modern hog, the different breeds of swine and the care of the animal, much information is given concerning successful California breeders and their methods.

At this time, the book is particularly valuable, because California has a rapidly-developing swine industry. Most of the information heretofore available was written for snow countries, where different housing methods are needed, but "The California Hog Book" deals with methods applicable to this State. It should prove a sure guide to the beginner.

Guilford comes to the defense of the hog in his book, pointing out that the animal will seek a clean wallow if given the chance. Much space is given to the computing of rations.

In his preface the author points out that California now does not raise sufficient pork to supply the home demand. He shows that there is no need for such a situation—California has ideal conditions for the raising of hogs even more economically than in the corn belt.

The book contains about 80,000 words and is published by the Pacific Rural Press of San Francisco at $2 per copy.

At the age of four weeks squabs are usually ready to be marketed.

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If you want **ONE** plow for all kinds of work, investigate this one.

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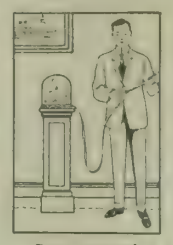
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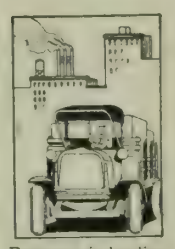
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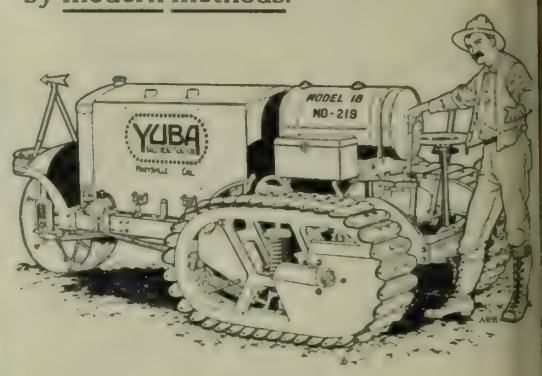
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You have 24 hours—it's the use you make of them that counts.

The business farmer, like the business man of the city, is learning to economize time.

To get the work done quicker and better is now the aim, and at the same time to do it at less cost.

There are improved methods in everything else. The business farmer is alert to the advantages to be gained by modern methods.



The Yuba Ball Tread Tractor is the economizer of time and money.

It replaces all the horses on the farm all the time. With the Yuba Ball Tread you can plow, harrow, cultivate, haul, thresh, quicker and at less expense than with horses.

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Vol. XCI—No. 15 Forty-sixth Year

THE PACIFIC RURAL PRESS

AN FRANCISCO APRIL 8, 1916. ...ELES

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The Control of Crown Gall, or Root Knot.

An outline of results from long observation and experimentation with specific suggestions for treatment.

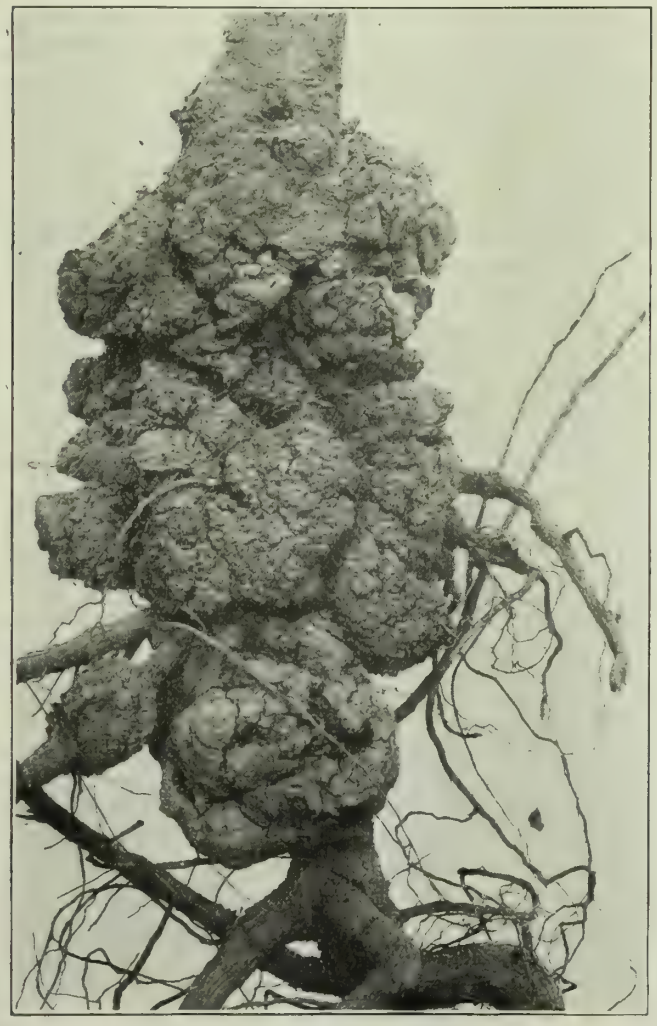
[Written for Pacific Rural Press by Clayton O. Smith, University of California.]

CONSIDERABLE interest is being shown by orchardists, nurserymen and tree inspectors, in the disease known as crown gall. This is common on the stone fruits and almonds.

This disease is now known to be caused by a definite parasitic species of bacteria which live in the cells of the affected plant, causing their abnormal multiplication, thus developing a more or less semispherical enlargement or gall on the underground part of of the trunks and roots of the tree.

Considerable study has been given to this particular disease in an attempt to find practical methods of control. This will be briefly considered under: (1) resistant stock as shown by experimental work; (2) sterilization of root by chemicals; (3) use of clean stock and planting in uninfected soil; (4) tree surgery.

A stock resistant to crown gall is desirable, providing it also has the other favorable characteristics, such as vigorous growth and adaptability for a considerable number of the varieties to be propagated. Experiment has shown a considerable variation of the different species and varieties of prunus in respect to their susceptibility and resistance to artificial inoculations with crown gall. The preliminary method of testing out the different member of the genus prunus has been to make artificial puncture inoculations at short intervals during the growing season. This method is a rapid and easily applied test of resistance. At the close of the year's growth the final data were secured, although it was often necessary to make observations a year later to secure the final results. Those secured the first year, however, are sufficiently accurate to give an indication of the actual resistance of the stock to this disease. Pure cultures of the causal organism are always used.



Natural infection of crown gall on four-year-old peach tree.

Degrees of Resistance.—The following tables summarize this work and show the percentage of successful infections on the different species and varieties:

Apricots: Prunus Armeniaca (Mikado), 27 per cent; P. dasycarpa (Purple), 40; P. Mandschurica (Chinese), 42; P. Mume (Japanese), 91; P. Armeniaca (Royal), 97; Miscellaneous (California varieties), 60 to 90.

Peaches: Prunus Mira (Wild Chinese), 10 per cent; P. Persica—(Muir), 85; (Salway), 90; (Elberta), 94.

Almonds: Amygdalus communis (Bitter), 85 per cent; A. davidiana (Chinese), 88; A. communis (Sweet), 95; Miscellaneous (Sweet varieties), 80 to 90.

Plums: Prunus pumila (Sand Plum), 0 per ce...; P. domestica (Italian Prune), 7; P. insititia (Purple Duane Stock), 7; P. domestica (German Prune), 10; P. insititia (Damson), 10; P. domestica (Green Gage), 25; P. cerasifera (hybrid) (Mariana), 85; P. triflora (Burbank), 90; P. munsoniana (Wild Goose), 92; P. cerasifera (Myrobolan), 95; P. triflora (hybrid) (Wickson), 98; P. Simonii (Simon), 99.

Comments.—Further tests in growing the pits or small trees in infected soil, show that the stocks showing stronger resistance to artificial inoculations are practially entirely resistant to the disease when growing in infected soil. The above table, while not exhaustive in the number and different kinds of trees tested, yet suggests certain varieties that can be further considered experimentally. In general, the varieties belonging to Prunus domestica are resistant, although some are very susceptible. What should cause this variation is uncertain. A stock of the domestica or possibly of the Damson type is now being used in a some what limited way for plums, apricots and nectarines. This is called at the present time Purple Duane stock, or simply P. D. stock. This is not the true Duane plum, but a small blue plum having the flavor of the Damson. It shows resistance and has given satisfactory results as a stock, and should be further tested in commercial plantings. The Italian and German prunes may be good stock for the prunes and other of the domestica plums. The Sand plum has been used to a limited extent as a dwarf stock in the Middle West. It probably will not be a popular stock for California, because of its dwarfing characteristic. It also does not grow well in the heavier soils. The apricot, plum and peach unite well with the Sand plum. It is interesting because of the entire resistance to artificial inoculations of the species known as P. pumila.

Apricots.—Among the apricots are several of Asiatic origin that are promising from the standpoint of gall resistance. These will be tested out as soon as pits can be secured. There is every reason, however, to believe that stock of these apricots will be as good as those in general use with the additional characteristic of crown gall resistance.

Germicides.—The use of germicides in treating peach roots have given discouraging results. Two-year-old peach roots were treated with different germicides to determine their injury to the roots, or their beneficial effects, if any, in preventing the growth of gall when the tree was planted in infected soil. The following preparations were used: Bordeaux paste, same formula as is used for the citrus gummosis; Bordeaux mixture, 4-6-50 and 12-15 50; concentrated Ortho lime sulphur, 1-10 and 1-20. The roots were dipped in the solution used and planted after it had slightly dried on the roots. The

(Continued on page 458.)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., April 4, 1916.

STATIONS	Rainfall Data: Past Week	Rainfall Data: Seasonal To Date	Rainfall Data: Normal To Date	Temperature Data: Max'm	Temperature Data: Min'm
Eureka	0	34.76	39.20	64	42
Red Bluff	0	19.59	21.70	80	40
Sacramento	0	18.04	17.27	76	44
San Francisco	0	27.05	19.76	76	50
San Jose	0	16.17	14.84	78	40
Fresno	0	11.55	8.34	80	48
Independence	0	7.16	8.25	74	..
San Luis Obispo	0	26.52	18.24	78	44
Los Angeles	0	19.61	14.15	80	50
San Diego	0	12.47	8.93	72	50

THE WEEK

PROBABLY the most important and wide-reaching incidents of the week have been the efforts of the prune growers to measure their desire and capacity for organization, and these incidents will culminate in a great assembly in San Jose on April 14, as set forth in detail in the entablature on another page of this issue. It is the business duty of every prune grower to get to this assembly if he can without too great sacrifice. As we are told, it is the intention of the directors of the "Information Bureau of Prune and Apricot Growers" recently organized, to put up to the people a proposition for immediate entry upon an effort to secure a competent control organization to handle the crop of 1917. We believe the effort is wise, because it is none too soon to begin an undertaking which, in the nature of things, will require much preparatory work. In all our writing on the subject of organization for prune handling during the last four months or more, we have steadily held in view an ultimate arrival of a strong organization, as an outgrowth of simpler ventures in that direction which would protect growers from stampeding and incidentally make them wiser about production and marketing and teach them to know each other better. We did not consider them aligned and munitioned for a great drive upon the center of the great problem confronting their industry. We thought it would be safer to wait for reports from the air-craft and submarine commanders which the Information Bureau would naturally bring into action. However, the war-council of the industry orders an immediate advance and so we say with the rest: "Go to it, boys; see how far you can get!"

Therefore, we are anxious that the meeting in San Jose on April 14 shall be large and intelligible. It will not do much good to have a mass-convention roar under spell-binding oratory. You never can tell by the size of the roar whether the roarers have any prunes in their pockets, or whether they are only carrying shriveled spuds for rheumatism. If the actual producers of prunes will go to the assembly sternly resolved to put the clackers through a lye-dip and force an opportunity to declare just what they themselves are ready to do, in a business way, toward the support of an efficient control-organization, then the effort may make a fair start from some sort of a real foundation. Every grower should go to the convention firmly resolved that he will not permit the assembly to merely make a record as a windstorm!

SHIPS OF ESTATE.

THINKING of prunes and the British embargo, one comes irresistibly to ships, for there is plenty of talk going that George does not like prunes less but ships for bomb-shells more; also, perhaps, he does not like to waste gold on prunes while he needs to feed the interior allies with explosives. However that may all be, California's surplus farm products are dependent on ships to get abroad, either from this coast, or the other—because the cross-country railways only get as far as the wharves, either of the Pacific or Atlantic, as the case may be. And so it becomes very desirable that the war should close—not alone that food may be available to hungry Europeans, but because we shall have empty ships to carry it to them. We have read many declarations of how scarce ships are, but nothing has impressed us so vividly as the gossip about how hard people are trying to buy ships. Take two, from a number of specific instances, given by a writer in the Oakland Tribune:

Mayor Rolph had a contract out for the building of the steamer Annette Rolph when the sensational boom in freights started. The price was some $600,000. He sold the vessel on the ways at what was considered a big advance; that purchaser sold to another, and that purchaser resold to Rolph, for nearly double the original price, who sold again at another nice profit. The difference between the contract price and the final price was $1,150,000.

The Republic, formerly the German cruiser Walkeire, recently arrived from Papeete, where she was lying in ten fathoms of water. She cost Sudden & Christenson $29,000 as she lay. They expended $100,000 in righting her. She came home under her own steam, bringing a valuable vargo, and they now have a steamer for which they have already refused $1,250,000.

"Howl, ye ships of Tarsish," lest all the phantom craft of antiquity be raised to mock ye and even the ark of Noah sail in to seize your charters!

SHIPS OF STATE.

ALTHOUGH there may be present and immediate hardships to shippers of California's surplus products, the outlook has dark dangers only to such reckless gamblers in ships as those who pay the prices indicated above. So far as future availability of ships is concerned, the best possible promise of it is found in the present demand for any floating thing which can hold most of the water on the outside of it. The eagerness for ships will generate more ships as nothing else can do and that will be the surety of reasonable freight rates when there is no more war-stuff to go. Besides, assurance toward the same end will be found in the increasing American interest in ships and a popular demand that the Stars and Stripes return to its old sovereignty of the seas. This will result in a public attitude in this country toward fairness to those who put money in ships. The same public feeling will carry the administration propositions that the government shall build plenty of dual-purpose ships. Thus, in both private and public ways, this country will be growing speedily toward a maritime greatness and ocean-carrying power commensurate with our position in manufacturing and surplus food production, the canal will realize the prophesies of its prospectuses and "Sail on, O Ship of State!" will be an order capable of execution. Therefore, the greater pinch in ships now the greater the freedom anon, and the greater force for development will be the sitting of California by the sea.

MY COUNTRY, 'TIS OF THEE.

IT IS probable that Europe may emerge from the present war thoroughly sobered and possibly repentant for her crimes against humanity. There are many indications that internal revolutions will follow external conflicts. In some cases there may be changes in forms of government which are anti-humanistic and thoroughly hateful in this era of the age of man. In other cases there may be little change in outward form, but notable changes in standards and measurements of human classifications. In all cases there promises to be striking change in spiritual ideals and in the conceptions of human rights. In all these ways coming generations must realize whatever compensation it can derive from the sufferings of this generation. It is not reasonable to expect warring nations to see that for this alone they are murdering each other; they must have visions of empires saved or extended to keep their ruling classes and their financiers at their job of leading and supporting the wretched business and to develop patriotic fervor in their subject masses. Therefore, it is not wise for neutral nations, which will still have to live upon the world, to take too seriously the declarations which belligerent nations make of what they will do in event of their victories—for they all still talk of winning. Great Britain has published a plan for solidifying her empire and inter-trading between the parts of her dominion on five continents, discriminating against the rest of the world. Italy has declared that she will make it "possible for Italian children in America to have an Italian as well as an American education. Professors are to be sent from Italy and specialists in all kinds of Italian culture are to be employed to live in Italian settlements in America. Italy has no intention of rendering her emigrant's disloyal to the United States. She proposes through Italian culture to enable them to attain the same degree of material prosperity that German kultur has given to the German-American." But it seems that kultur is not all the German-American would like to give us. A prima donna, whose husband was recently arrested on suspicion of bomb-plotting, said this: "Yes, I would myself blow up munition factories. I would give up everything else and go from one place to another, carrying ruin with me, if I only could warn the workers in time to save themselves. That I would do gladly and more—for Germany." And this is the lady to whom Americans have paid a million dollars, perhaps, in gate money for musical

kultur during the last decade! Surely culture with a "k" is a hard proposition.

FOREIGN COLONIES IN UNITED STATES.

ALL this seems to mean that the European empires will look upon the United States, not as a nation, but as a great raw country, on which to plant colonies, where people shall be made to learn, not loyalty to the country of their adoption, but allegiance to the countries whence they came; to gather up money for the enrichment of these countries, and to grow men for the European armies of the future—which, by the way, we hope will never exist. However, the principle is the same, whether there is prevention of armament or not. Obviously, the United States must protect herself against such exploitation. We have room in this country for many more good people, but we should make it very sure that American opportunity is given only to those who are willing to aspire to American citizenship by renunciation of foreign allegiance at the port of arrival, by all who come for settlement. We have now plenty of British-Americans, German-Americans, Italian-Americans, and all other hyphenates, not en route to citizenship, to last us for a century. There are enough of them to declare our national admiration of all those countries, and we can live in love with them so long as they keep the peace. Henceforward we should require declaration of intention for citizenship, with all that such declaration implies. To have a lot of ostensible Americans, wearing togs to foreign thrones under their shirt-collars, is not only a menace to American solidarity and patriotism, but a potential disturbance of the peace, which should not be longer tolerated. We have not taken hitherto much interest in so-called "American" organizations or policies because they seem to be at enmity with the attitude of the United States, as maintained by our ancestors, but now, with all the world inclined to look upon this country as a place to pick up things to send home or a place to blow up when any alien thinks he has made all he can out of it, we are gaining conviction that the old political outcry, "America for Americans," may be getting to be rather a good and necessary thing.

NOT CRUEL BUT SILLY.

THE prima donnas seem to be getting on our nerves this week. We have already quoted one who is apparently steeped in anarchism, and now comes another with words to the public which are not cruel but silly. These ladies should stick to song; they make us saddest when they speak. If, however, they will allow reporters to speak them in public they must be chided for what they say. Here is a prima donna's advice for young men who contemplate marrying: "Take your bride to a ranch and keep her there for at least a year. You will have a far greater chance of keeping her affections than if you coop her up in a small city apartment, where she is apt to become dissatisfied with seeing so many about her who enjoy greater advantages."

While we do not believe that a young husband should yank his bride around for entertainment as he would an old maid aunt, and while a certain brief retirement may be grateful to a bride after having been rebuilt by her dressmaker, and made a holy show of for months by all her girl friends, we are quite sure that if you try to make her tolerate your own solitary society for a year you will have to lock her up. And this will happen just the same, either on a ranch or in a city apartment. If your bride is any good she will need to get busy, either socially or domestically, or both. If she belongs to the countryside and has a love for it, or if she is a rare one who acquires such a love because you are a part of it, the ranch-home will delight her. If she belongs to the city, or acquires love for it because you are a part of it, exactly the same thing will happen in a city apartment. In either case do not think for a moment that your shadow will cover all she desires, or that either city or country has anything to do with it. And then, how is a young man, who can only provide "a small city apartment" for his bride, to take her to a ranch "for a year at least." One cannot get onto and away from a ranch like that, and what is his job to be during this Edenic period? How can he get it and how can he chuck it and get the extra money he is apt to need in about a year? No; all such advice as we have quoted above is punk. Young people should plan to enter real life at their marriage and to pursue it seriously but joyfully forthwith in whatever place bread-winning is assured by what the young man has already accomplished, for this is the only basis upon which marriage is justifiable. There will be slips enough without starting with one.

But the reporter informs us that this prima donna lady owns several ranches and is an advocate of the "back-to-the-land movement." There is no real, reasonable farming in that movement, and that probably accounts for the advice, but there is a contradiction in it even from that point of view. If the young man has money enough to buy or hire a country villa, with an outfit of motors and servants, for a year, he may get comfort from such rural life, but if he is as well fixed as that he will not take his bride to a small apartment from which she could see so many other people better fixed, for he could buy or hire a town house as good as they enjoy. The question is, then, whether a young swell and his bride should live in town or country, and that is a matter beyond our knowledge. The trouble is that such questions are put forth as of agricultural importance when they are of no agricultural concern whatever. From the point of real, way-winning activity, either in city or country, the prima donna's advice is simply silly—and yet careless writers put forth such statements as though they were tributes to the desirability of farming life. They have nothing to do with it.

Queries and Replies.

Querists must give name and address.

What Are Non-Bearing Trees Worth?

To the Editor: What would be the relative value of trees, say apricots and almonds, in the course of their development, planting one-year-old trees from the nursery. To illustrate more clearly, trees I bought at the nursery this year, supposed to be two years old from the seed, properly cultivated, what would be their increased value in the spring of 1917, and every following spring up to the period of time when they would commence to produce sufficient crop to be self-supporting?—W. M., San Francisco.

Their increment of value must be a matter of opinion, because until they bear a crop there is no income upon which a capitalization estimate can be based, and beyond that there is a chance that they will never bear anything profitable. On the other hand, they do have a potential value because they may be very profitable at some future time, or they may, before that time, make the land sell at a higher price, or they may make the landscape look and smell better. As all such considerations, pro and con, are matters of opinion, you and the buyer must haggle over them and usually the better talker will get away with the bargain. Concretely, they may be said to be worth just what any one will pay for them.

Now as your question implies that you may be the seller, we will give you this basis for setting up your side. Charge against the orchard the cost, or a fair estimate, of the value of the land; the cost of preparing for planting, the cost of the trees and whatever labor is used in planting, pruning, cultivating, protecting, irrigating, etc. When you have the total add a year's interest at your local bank interest rate. That gives you the net value at the end of the first year (when the trees are two years old from the bud). For the next year add all the charges for maintenance of the orchard during the second year—including interest on the net value at the end of the preceding year; and so on year by year, adding cost, taxes and interest on all preceding values or expenditures. For although the earth would burn itself up every ten or fifteen years if interest were charged on unproductive land, in the case of orchard it is different, for the land is at work upon a long-distance crop and is entitled to wages calculated as interest. All these things enter into calculation of net value at any time during the non-earning period.

But you may say: "Where do my earnings as promoter come in?" To the net value as above you may add a reward for your insight and enterprise in making the improvement, your share of the benefit from the building of a new school house in the next section, or from the prospect of a new trolley line coming up the valley, or from the fact that the previous spring's frost line passed half a mile below your place. Add therefore to the net value, as above, whatever you wish the buyer to recognize as the unearned increment to which you are entitled. Some have been known to add 100 per cent for this, but probably 10 per cent would be fairer. Whatever you decide to add in this way, whisper it to the buyer, for the assessor is sometimes bothered about the value of improvements and may take the seller's idea and soak him accordingly. And having made your figure to the prospective buyer, it's up to you to decide, in the discussion of it, which is to be the hammer and which the anvil. The value of your trees which have earned nothing will be what you can get someone to pay for them.

Pith-darkening in Young Trees.

To the Editor: In setting out some young trees I find that when I top them some of them are white throughout while the pith in others will be a very dark color—brown, almost black. Is this a sign of anything seriously wrong with the stock, or what does it indicate?—Planter, Gilroy.

We never saw any full demonstration of the cause of it. Our observation is that it is negligible if the wood around the pith and especially the inner bark is not discolored.

Reasonable Expectations from Walnuts.

[By Prof. Leon D. Batchelor, Citrus Experiment Station, Riverside.]

It is amusing to read, from time to time, the expected walnut yields figured by some enthusiast who has based his calculations on the production of a certain door-yard tree, multiplied by most any given number per acre. This would be harmless pastime if such little examples were to be read only by persons familiar with commercial walnut growing or by those not likely to invest in it, but if beginners in this industry base their expectations on any such figuring, disappointment is likely to result. In a recent article in a well-known nut journal, the writer asks the reader to "figure for himself" 250 pounds per tree at 15c per pound and 27 trees to the acre, at 40 feet apart, etc.

The 250 pounds per tree is thought by the writer of the above quotation to be the average production of a small number of solitary trees. Thus far the little example in plain arithmetic sounds reasonable, though above the average. The 15c per pound, however, is far more than commercial nut growers have averaged for their entire crops for the past five or ten years. This is merely mentioned in passing, however.

The real place where pencil and paper results will differ from actual realization is in figuring an average of 250 pounds per tree with the trees crowded to the rate of 27 trees per acre (40 ft. x 40 ft.). It is a matter of common observation that the walnut tree will not thrive when crowded in grove form as well as many other fruit trees. On almost every hand one finds the border trees of a mature grove more productive than center trees. California groves on good walnut soils are in many cases too crowded with trees planted 50 ft. x 50 ft. (17 trees per acre). Some of the older growers feel that 60 ft. x 60 ft. is close enough for mature walnut trees (12 per acre). Again, the average production of the bearing walnut groves in California is less than 1000 lbs. per acre (although there are numerous door-yard trees, with ample room for development, which are producing 250 pounds or more). A grove which produces 1500 pounds per acre is better than the average, and one which will average to annually produce 2000 pounds per acre is very rare; an occasional production of 3000 pounds is sometimes heard of, but such cases are "hard to find."

This discussion may enlighten anyone who starts to "figure for himself" the little example which reads 250 pounds per tree × 27 trees per acre, equals 7750 pounds per acre (not to speak of the 15c per pound).

Of course the newer walnut regions may far excel the California groves in production, and for the sake of owners it is hoped they will. On the other hand, if prospective walnut planters in the newer sections merely anticipate such yields as have been realized in one of the largest and most successful tried sections of the world, possibly there will be less disappointment in store when the pencil and paper give way to walnut sacks.

Walnut growing is a very stable, conservative branch of the fruit industry, but the trees have not literally "rained" gold dollars except in theory.

Growing Fruit Wood Instead of Suckers.

[Written for Pacific Rural Press.]

"The June drop of oranges comes from the inside. They drop because the branches have been shaded so that while they set fruit buds, the latter are so weak that they can't mature the fruit. A tree left to itself will produce branches and fruit. After about three crops on a branch, it bears scarcely enough to pay for its keep. Weight of fruit pulls the branch downward and new shoots come out along its upper side. After two or three crops it might as well be cut back to the most promising new shoot, for it would be shaded too much and is then declining in vigor anyway." Thus spoke A. H. Nelson, who owns and works the Canyon Vista ranch, including 85 acres of oranges on Mentone Bench, San Bernardino county.

The thing to do is to renew the trees, according to Mr. Nelson. Take off the undergrowth which is an expensive boarder, and thus lighten up the tree for the rest.

"One man said he could throw a cat through my trees without touching a branch, after I have pruned them." Such heavy cutting does not damage orange trees as it would deciduous fruits.

"When I started this system eight years ago, people said I wouldn't get a good crop for three years, but next year it was as good as before, and it has trebled since. There must be a general slaughter to actually renew the top."

Mr. Nelson aims to prune 1-3 of the orchard every third year, simply suckering during the two years. This is because the crop is not so heavy after the pruning, but two big crops follow that lighter one.

Few Suckers.—It might be expected that much suckerous growth would follow such heavy pruning. However, only a few suckers come. Mr. Nelson accounts for this by saying that a sucker is simply a branch striving for light. In such open trees that same growth makes fruit wood instead. Suckers make but little fruit, and that grades choice to bad, while the abundant growth on the trunk and main limbs of this orchard is affirmed to average a box per tree. And contrary to the experience of many in the Redlands district, this fruit is as fine in all good qualities as the best. It does not sunburn, is not threshed about in the wind, has finer skin and better flavor, but is later in ripening. After the big freeze such inside growth was abundant and many cut it off, but Mr. Nelson thinks this a mistake. The summer after the freeze, he pruned the Valencias very severely. The crop in 1914 averaged 3½ boxes; in 1915, seven boxes; and is set as heavily this year.

One block of 20 acres near the bank of the river was pruned right after the freeze and produced lots of such growth. This block was not suckered since June, 1915, yet early in February, 1916, scarcely a sucker was to be seen.

To encourage the inside growth, the triennial pruning includes the making of an inverted cone into the tops of the trees. One reason for the lack of suckers is that at this time the ground is disk plowed 10 to 12 inches deep in two directions, giving a root pruning also.

Prunes in Spring.—April pruning is preferred, especially if the fruit can be picked first, since that leaves the "June growth" on which fruit buds may form for the next crop. The shock to the tree is much less in April than in June, because the leaves have mostly been on nearly all their allotted year, and would shed in May or June anyway. At all events, nothing is cut from a tree after August.

AVOCADOS TO PLANT.

[Written for Pacific Rural Press.]

"There is so much misinformation regarding avocado varieties," says T. U. Barber of the Hart and Barber Avocado Nurseries, that the California Avocado Growers' Ass'n is trying to get a committee of competent disinterested men to undertake classification and description of varieties which have already fruited in California and shown themselves worthy of planting.

There are many varieties whose propagators claim are the best and only ones, often before they have fruited at all in this country. There are also many varieties whose good points are exploited, ignoring disabling characteristics such as poor bearing or shipping quality.

Commercial plantings up to 10 acres are being made this year by people who last year wanted only a few trees. The commercial varieties, according to Mr. Barber, are the thick-skinned or "hard shelled" type which have the reputation of standing shipment better than thin-skinned varieties. The two types, howver, are not competitors, as varieties of the one ripen through nearly nine months while the others ripen during the fall three months. The former are destined for distant markets, while the latter are primarily for California consumption. Plantings ought to be made with the purpose of ripening fruit the year around, and only those varieties which have proved good should be planted in a large way.

For commercial orchards, the Taft is Hart and Barber's best seller, with many Maserves, Challenge, and Solano being ordered. The last named is less oily but is favored; on account of its great edible proportion, flavor and season. Judging by orders already in, their stock of this variety will be all sold. Of thin-skinned varieties Harmon and Northrop are in strongest demand, but are not recommended for commercial planting. The Val de Flor, an imported variety which is fruiting here this year, is also being planted quite heavily to fill the fall market. It has a leathery skin which will make it more valuable as a shipping fruit than others of thin-skin type.

One man bought avocado trees Mar. 13 from the Hart & Barber nurseries to plant 10 acres.

Is there a question you'd like to ask about fertilizer, its effect when applied to soils of varying kinds—or for the benefit of crop sof varying kinds?

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Why Not Everybody Push Prunes?

[Written for Pacific Rural Press.]

To the Editor: I have read a good many valuable articles in your paper in regard to the handling of prunes. There seem to be no two of the same opinion in regard to it.

I do not belong to anything and am only looking from a distance, but in my opinion there is nothing the matter with the Farmers' Educational and Co-operative Union of America. They seem to be organized in most every State in America. What are they for if not to help one another? Why can't the prune growers of California ship their prunes to each state camp at cost, say a four-cent base. We can grow them for that and in that way the toiler of America could get a prune to eat and get it at a right price.

Did you ever stop to consider how many prunes per capita could be consumed right here in America? It looks to me that if we could cut out the grafters we couldn't supply our own demand. I raised a family of eight children and when I was living back East I had 200 pounds shipped me for my year's supply and then I would run out before the next crop came in. There are hundreds of families in Nebraska that would take 100 to 200 pounds if they could get them at the right price. Last year I shipped over 2500 pounds to my home town by local freight, which costs $2.20 per cwt.

Why do not the prune growers of this State join hands with the rest of the United States and co-operate, one with another, for their mutual benefit? Then we will not need any information bureau, for each State head camp or local camp can make their wants known. But if we charge them two prices they won't have any wants.

There is another queer phase of this prune question. I lived nearly 40 years in Nebraska and I never saw a California prune but once, with the exception of those I shipped there. They all came from Oregon, artificially dried and often burnt at that.

I fear lest our two colonels have come to some mutual agreement and both have got hold of the ends of two strings and gone to chewing so fast that neither can speak.

But still I see Col. Weinstock has done 70 cents' worth of business. Hurrah! But say, those gentlemen he has put in at the head of his advisory committee? Do they hold high offices in other concerns? If so, why not so? Of course there are all kinds of rumors afloat and I am asking this for information.

Gilroy. **J. W. Richman.**

[There is certainly nothing the matter with the Farmers' Union so far as we know. They are doing a splendid work, no doubt, but they can no more handle a crop of 200,000,000 lbs. of prunes (which we are likely to have any good year) by their methods, than they could handle all the hogs grown in this country. There are not farmers enough in this country to eat all our prunes if they tackle them three times a day. But they are doing well and you are doing well in industrial shipments, but most of the prunes must be eaten in great centers of population. Every capable means of distribution must be employed. It is our business to use them in such a way that producers get their fair share of what the consumer pays.

We do not know anything more about Col. Weinstock's advisers than you do. We presume he is hiving bees which know how to gather honey with the idea of pulling out their stings. You need not worry over the colonel's advisers. If he wanted to crack a safe he would not send for a Sunday school superintendent.—Eds.]

GET READY FOR RED SPIDER.

To the Editor: I have a young almond orchard badly infested with red spider. Will it be possible to reduce them by the dry sulphur method, or will I have to spray for them? Have you ever heard of anyone doing much good with dry sulphur? Red spider seems to be pretty tough, and it appears to me it would be hard to kill by just blowing a little dry sulphur over it. I suppose the commercial lime-sulphur solution would be the thing to use, in case I have to spray.—F. N., Livermore.

[The time to hit the red spider is when the young spiders are hatching out. This varies according to local climate, but is usually about May 1. They can then be killed by fine dry sulphuring, using a good blower,—when no strong wind is blowing. This does not kill by contact but by generating sulphur fumes as the heat increases. This is the most common remedy. It has to be used several times during the summer. Lime-sulphur spray is also good if diluted to summer strength, according to directions by the manufacturers, but there is danger of spotting the fruit—but this would not matter with the almond.—Eds.]

PLANTS TREES DEEP.

[Written for Pacific Rural Press.]

It is all right to transplant trees deeper than they were before, if the soil is sandy, and most of the water is deeper, according to M. Rusznak of Ontario. He transplanted a four-year apricot tree three years ago 15 inches deeper than before and it is doing as well as a transplant could. The bark is not rotted underground but has sent out roots. On one strip, the ground is dry and the trees small. They could not be planted deeper.

This orchard is dry farmed, and even after a wet winter dry ground can be found in the spring two or three feet under the surface.

One of Mr. Rusznak's neighbors transplanted trees six or seven years ago, four inches deeper than they had stood a year or two in orchard form too close together. They are doing fine now.

A very interesting meeting was held at the Sylvan club house, Modesto, on April 13. E. Millard, the State Secretary of the Farmers' Union, was present, and organized a Farmers' Union local. Locals are to be established all through Stanislaus county, with the Modesto local as the unit. A membership of 30 was secured at the opening meeting, and Mr. Millard stated that it was his first experience in organizing so large a local as a result of one meeting.

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Olives Need Plenty of Care.

[Written for Pacific Rural Press.]

Olive growers in the Hemet district seem to be afflicted with alternate heavy and light crops which they have not yet managed to equalize.

Yet, when one gets 9 tons of salable Missions from 70 trees about 23 years old, he can stand it to get only two tons next year. This is the record of M. B. Moulton of Hemet year before last and last year. The present season is yielding about 12 tons, including the first crop from 30 grafted trees.

"You can get a heavy crop of olives if you give the trees good care," says Mr. Moulton. "I ought to have pruned out some of the wood before the big crops were half grown, so the fruit would have been larger and would not have prevented bud formation for the next crop."

Barnyard manure at the rate of 15 four-horse loads per acre has been applied, and Mr. Moulton hopes to manure heavily in alternate years.

The soil is deep granite loam, sloping enough for easy irrigation by furrows once per month.

"I think it would pay to thin the fruit. One man can thin a tree in half a day and a box of fruit would pay for it."

Large olives sell at Hemet for $200 to $250 per ton, while small ones go at $60 or $70, according to Mr. Moulton. They vary between those prices according to which of half a dozen grades they belong in.

PRUNE GROWERS WILL TRY FOR STRONG ORGANIZATION.

The State Central Committee of the California Prune and Apricot Growers' Information Bureau met on March 30th in San Francisco. Mr. David Felsenthal of Fillmore, California, was made the accredited Committeeman for District 5, which comprises San Luis Obispo, Santa Barbara and Ventura Counties.

Besides acting on routine matters, the Committee, following a conference with Col. Weinstock, voted to call a mass meeting of growers for April 14th at San Jose, California. At this meeting the Information Bureau will present for the consideration of the growers assembled, a plan for the establishment of a State-wide marketing organization. This plan will be based, in a general way, on the scheme followed by the raisin growers in their organization. The Committee was led to promote the formation of a selling association by the State-wide increase in the sentiment among the growers for such an organization. This feeling has been particularly strong since the news of the embargo reached the growers. Although the embargo as a market factor is perhaps not so important in itself as the high ocean freight rates are, it and Col. Weinstock are the agencies that have caused and are now causing the California prune and apricot growers to think of their marketing problems more seriously than ever before.

The State Central Committee was also much impressed with the prune and apricot production, export, and domestic consumption statistics for the five-year period ending 1902 as compared with similar figures for the five-year period ending 1914. These figures showed that the production of California prunes had remained practically stationary, that the domestic consumption of prunes was less than half what it had been, and that the quantities exported were five times greater; they also showed that the present production of apricots was materially larger, that the domestic consumption was not more than half what it had been and that the apricot export trade in 1914 was many times larger than it was in 1902.

This sad showing, as regards domestic consumption, is doubtless due in a large measure to a lack of centralized control of the industry. Without such control the proper exploitation of the home market has been impossible, and until such control is developed the consumption of prunes and apricots will fall off in the domestic market in proportion to the increase in the use of other fruits by the same markets.

The Growers' Information Bureau desires the largest possible attendance at the mass meeting on April 14th and extends a cordial invitation to all growers and those interested in their problems to be present at the Garden Theater, 2:00 p. m.

Grape Mildew Prevention Begins Now.

[Written for Pacific Rural Press.]

"Prevent grape mildew—don't try to cure it, the watchful waiting policy won't work," say the De Lano Bros. of Fresno county, who claim not to have had any mildew on their grapes for years; and had none on their vines last year, though vineyards all around them were affected. One adjoining vineyard lost half of its Malaga crop from mildew last year.

"Mildew first attacks grapes while they are in bloom." The first sulphuring comes when the leaves are just well opened. Even at this stage mildew has been observed on Thompsons. The second sulphuring comes before blooming if bad weather follows the first; and they are sure to sulphur while the grapes are in bloom. Another dose comes when they are the size of peas. The vineyard is then irrigated; and another sulphuring follows this, especially if weather has been favorable for mildew. After each rain, some more is applied.

Such repeated sulphurings are not so expensive as they might seem, nor are they so expensive as the cultiva-

(406)

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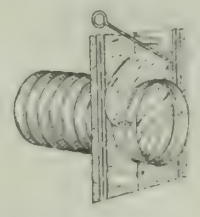
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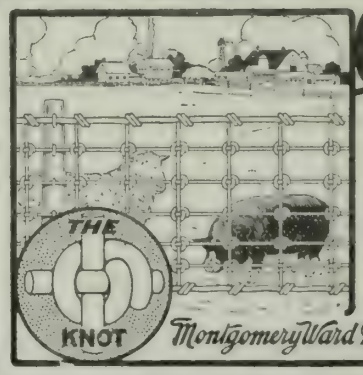


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tion and care of a vineyard which produces mildewed grapes. Half of a 110-pound sack of sulphur is enough for six acres the first time; one sack the second; 1½ sacks for each of the rest.

It is rapidly and thoroughly applied from machines carried on the shoulders and worked with bellows. A hose from the machine ends in a stiff pipe with the end spread out so that the sulphur is shot through the vine in a thin sheet. By working this pipe up and down while the bellows is worked, the under sides of the leaves are coated—a very important but oft-neglected part of the work. Its best effect is when held far enough away to allow the cloud of sulphur to settle uniformly on the leaves, unaffected by the force of the blast.

Only resublimed sulphur is used. Sublimed sulphur, according to De Lano Bros., won't fog from the machine or stick smoothly on the leaves, and is actually worth less than half the price of the resublimed article.

DECIDUOUS FRUIT PROSPECTS IN U. S.

[Written for Pacific Rural Press by J. L. Nagle, General Manager California Fruit Exchange, Sacramento.]

The following reports have been compiled to date of the fruit crop prospects in the heavy producing states of the United States:

Georgia.—A severe freeze March 16th at Fort Valley unquestionably affected from 50 per cent to 60 per cent of the crop of Early Belle and Georgia Belle Peaches. Reports from Marshallville and Byron indicate like damage also. Up to the present writing the Elbertas have not been damaged.

Colorado. — Temperatures in the fruit districts have been unusually high for this season of the year, causing the trees to swell to a point where they are just about to blossom and bud. Freezing weather generally prevails in April and May and there is some likelihood of damage to the Colorado crop on account of the trees being advanced over several previous years'.

Michigan.—There was a very open winter, especially in the month of January, but since then all the streams have been frozen to 15 deg. or more. Trees are still dormant and it is too early to predict crop conditions.

Missouri. — On account of the heavy crop in this state last year, growers and shippers are of the belief that the crop will be considerably lighter this season. It is also reported that the Ozark peach crop from Arkansas, which is a keen competitor of California, will be much lighter. More reliable information regarding the above will be furnished as soon as there is a change in the Eastern situation.

Texas.—There has been nothing to date to interfere with the Texas peach crop. This state always experiences a late freeze and as the crop is well advanced and as there has been an extreme drought, this latter condition may cause the peaches to drop before harvesting. We expect further information on this very shortly.

Ohio.—The fruit districts of this state have never experienced such cold weather so late in the season and although this has retarded the flowing of sap, it may have been a protection to the trees, though the temperature has ranged from ten degrees or lower several nights during this month. This may mean a good crop but a late one unless there is a frost during the blossoming season.

Virgini .—It is reported that from present indications this state will have a small crop.

Oklahoma.—The only fruit crop of any consequence to this state is peaches. There are no figures showing exact shipments in cars or bushels for any past season. However it is estimated that the state shipped about 6500 cars last year.

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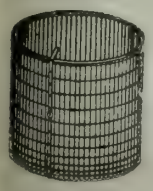
Auction Sale
of Real and Personal Property

The undersigned will sell at public auction on
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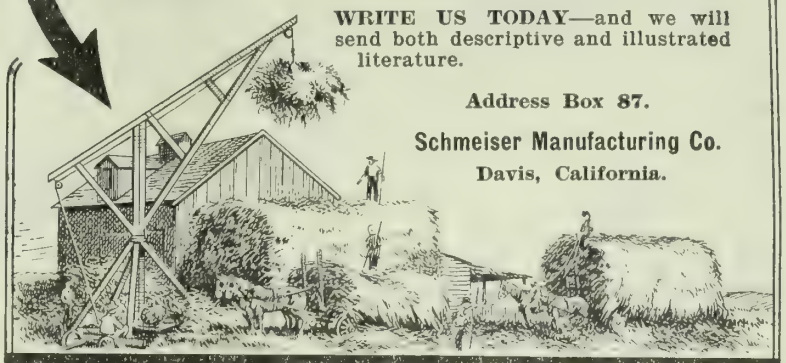
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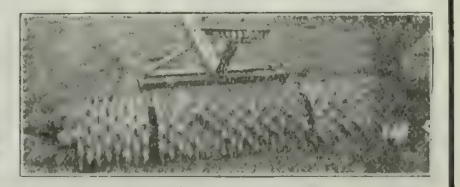
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Root Knot on Berries.

Root knots on berries are made by the same botanical beast which makes knots on the roots of fruit trees. The planter should run away from it.

To the Editor: In cultivating a small patch of blackberries this winter I noticed that one of the vines had a large lump or knot on its roots. The knot has a very rough and uneven surface, resembling a large wart somewhat. Is there any method by which this growth can be stopped or will the destruction of the vine be necessary? Some of my friends have secured cuttings from me; will there be any danger of their plants developing this same ailment? —H. C. H., Nicolaus.

[Answered by Prof. W. T. Horne, University of California.]

Replying to the inquiry of H. L. H., of Nicolaus, Sutter county, California, I think there can be no doubt that the lump or knot on blackberry is crown gall. This disease occurs on a considerable number of plants and is said to be more severe on the blackberries and loganberries than on almost any other kind of tree or shrub. One very curious feature of this disease is that very large swellings may form on the roots of a plant without appearing to do very great harm, so that the plant may live for a number of years with reasonably good vigor while it has extraordinary growths on the roots. However, I think that in time these growths will multiply on the roots so that the vitality of the plant will be weakened and its productiveness impaired. I am told that in berry patches the galls spread rapidly enough so that the infected patch becomes unprofitable after some years.

I do not believe that there is any measure which is liable to be effective for checking the growth of these galls, nor their spread from plant to plant. It might be a good idea when a plant is found to have a gall to remove it as completely as possible and burn it, but I am not sure that this procedure will be very successful in preventing the appearance of new galls. I think that practically the only thing that can be done is to keep the field as long as it is profitable and then destroy it and plant in other land where it is believed that affected plants have not been growing.

If cuttings are taken from a diseased plant at a distance from where the gall is found I do not believe there can be very serious danger of transferring the disease. However, if it is one of the blackberries which is propagated by taking up suckers or if it is one of the Himalaya or Mammoth type in which tips are rooted, if these are near the diseased plant I should think there would be considerable danger of transferring the disease. It is my idea that it is a soil trouble mainly, and will only rarely affect plants above the surface of the ground. I have made inquiry occasionally of berry growers in the commercial districts, but they have not usually reported serious losses in their own experience from this trouble.

An old vineyard or an old peach or almond orchard is very liable to be infested with crown gall, and such places should be avoided, especially for nursery or planting of susceptible kinds of fruit.

Berkeley.

MAKING A NEW VINE-STUMP.

To the Editor: My muscat vines eight years old are full of black knots all over the stumps. Is there any remedy?—A. L., Dinuba.

[When the vine stump becomes so gnarly that it does not make good canes and crop, a new stump can be made by training up a sucker from near or below the ground, tying it to a good stake and pinching the end when it is three or four feet long. This will induce branching below and from this the arms for a head can be selected at the following winter pruning. The old stump, if it is still bearing, can be left until the second winter pruning after the sucker was staked and then sawn off smoothly just above the starting place of the new stem or stump.—Eds.]

FREEZE KILLS PEARS WORTH $25,000.

[Written for Pacific Rural Press.]

"I lost $25,000 on my 80 acres of pears last night," said a well-known fruit grower of the Tehachapi district following the cold night of Mar. 23. He lost the rest of it the next night, for the snow slush began to freeze before sundown, and was frozen hard in the morning.

This cold snap, according to the gentleman, was to be expected at this season, and would have done no damage had there not been unseasonably warm weather since Feb. 10. This had brought many of the pears into full bloom, though most of the buds had not yet opened. Apples were better protected by leaves, and many of them were not opened yet.

"Here are two pear trees 25 years old, that never lost a crop till they were frozen last year, and again this year," said he.

Here is an illustration of the need of frost fighting outfits as urged last fall and again recently in Pacific Rural Press. The $25,000 would have bought several outfits and the supplies for this orchard; and there is little doubt that they would have saved the crops of both years.

IRRIGATING PEACH SOIL.

[Written for Pacific Rural Press.]

The peach soil about Cucamonga is generally a light sandy loam in which the water sinks downward, normally, faster than it goes sidewise. This would result in the trees nearest the furrow-heads getting too much water.

To get even distribution from one end to the other, probably the best system is that practiced by V. G. Lucas, who handles about 250 acres of peaches for the Lucas Ranching Co.

About three miner's inches are run into each furrow for an hour, by which time the water has reached the other end 40 rods away. This gives a sort of moist layer in the furrows through which water does not seep so readily as through the dry dirt.

On the same day about an inch of water is turned into each of these furrows and watched for perhaps an hour, gauging the stream so it will just reach the other end without overflowing. This time the smaller head also takes only an hour to go through.

Then it can run all night without attention. It seems to seep equally all along constantly.

CANADIAN FIELD PEAS.

To the Editor: I would like information about Canadian field peas; when to plant them; whether affected by frost; and their feeding value, especially to sheep. Can oats be profitably planted with them?—E. G., Modesto.

[They should be sown in the fall to make plenty of growth during rainy season, for they are hardy against our ordinary valley frosts. They can be grown with oats or rye very successfully for winter feeding, though probably the common vetch is better for that purpose.—Eds.]



Garden and Farming Book

—tells what to plant, and how to plant it. Contains everything you want to know about citrus and deciduous fruits, ornamental trees, plants and shrubs, flowers, vegetables, etc. Also contains list of garden tools, fertilizers, poultry foods and remedies. For free catalog and special literature, address Mr. Peck.

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12 in.	long,	7 in. wide	11.00
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MUNITIONS FOR COL. WEINSTOCK.

To the Editor: At a meeting of the Contra Costa County Fruit Growers' Association held at Concord, Contra Costa Co., Cal., on March 11th, 1916, the following resolution was unanimously adopted:

"Whereas, owing to conditions in Europe and to the recent British embargo, our producers of canned and dried fruits are confronted with entirely unprecedented conditions—increasing production, and curtailing of our markets; and

"Whereas, we, the Contra Costa County Fruit Growers' Association, believe that by strong state-wide organization of producers of prunes, apricots and pears, and through suitable advertising and selling campaigns similar to the raisin producers, and only through such organizations, can conditions be ameliorated and our entire product be successfully and profitably marketed in North and South America; therefore, we pledge our support to the State Market Commissioner in his efforts to organize our producers of prunes and apricots in order that we may place our industry on a sound basis. We suggest the advisability of pear growers taking steps toward organization.

T. H. Hook, Secretary.

Concord.

SOAKING EUCALYPTUS LOGS.

To the Editor: In your issue of the 25th inst., I noticed a question asking the editor how to season eucalyptus wood to avoid checking. There is but one way to accomplish this perfectly—to season the log under water before it is cut into lumber. By doing this all of the sap will be dissolved and the water, taking its place, will evaporate from the wood as soon as it is exposed to the air, without checking. Lumber sawn from green logs can be treated in the same manner with a much shorter time required before the product can be seasoned.

Brentwood. F. E. Slutman.

[Our recollection is that this experiment was carefully tried some years ago without demonstration such as our correspondent anticipates. In the report on Eucalyptus Timber by H. D. Tiemann of the Forest Products Laboratory, Madison, Wisconsin, to the U. S. Forest Service it is shown that checking and warping of blue is due to internal tissue-stress and not to any sap content which can be soaked or boiled out, and he worked for months on the problem in the eucalyptus forests near Berkeley, which in default of timber production have been felled for firewood.—Eds.]

CHERRY IRRIGATION.

[Written for Pacific Rural Press.]

At the Highland Home ranch near Beaumont cherries are the pioneers of several hundred acres in that district. They are irrigated every four weeks after dry weather comes until just before the fruit begins to color at ⅔ of full size. This makes the cherries fill out; but no more water is given until after picking, as that would make the fruit keep poorly. Late irrigation helps strengthen fruit buds.

The water is run down the gravelly southern slope through four furrows per row, keeping it away from the trunks.

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Washington Navel and Valencia Orange, Lemon and Grapefruit; two-year-old budded stock. Trees in perfect condition—grown in exposed positions. Best citrus stock scientific culture can produce.

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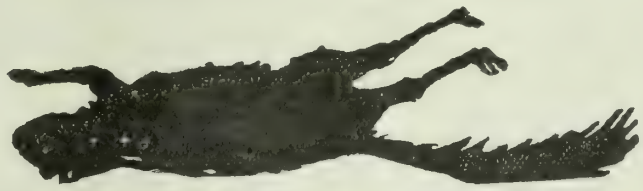
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Pacific Rural Press

Ridding the Farm of Weeds.

[Editor's Note.—This is the last of a series of five articles on weed eradication that have been prepared by Mr. O. W. Newman, Ass't Sec'y State Commission of Horticulture.]

MORNING GLORY CONTROL.

There are three methods employed against morning glory, all of which are effective and of value in their place.

Smothering has been practiced on small patches of morning glory, Canada thistle, creeping malva, and others with considerable success. It has been tried especially where the pest had not become scattered, and found to be efficient. It must be remembered that a much larger area than that immediately occupied by the plants must be covered, otherwise sprouts will be found springing up beyond the covering. Straw, manure, boards, tar paper, and old sacks have been used. The object is to exclude the light as much as possible.

Morning glory can also be absolutely eradicated by constant cutting. Experiments by the University of California and the State Commission of Horticulture have demonstrated this beyond a doubt. Plowing is not the best method of cutting this weed. Use an Acme weed cutter and set the knife to pass about six inches below the surface of the ground. Repeat the cutting every six or ten days, according to the rapidity of growth. Do not let green leaves appear. If the green leaves are allowed to appear they begin to manufacture more food for the underground rootstocks, and the work expended is wasted. Irrigate the land where possible, as this stimulates the dormant roots to send up shoots and hastens their final exhaustion by the cutting off of these shoots with the weed cutter.

Under this method if the morning glory is in the field it is possible to grow a crop before the weed cutting begins. Plow in the spring and sow to grain. After harvest plow again and then commence to use the weed cutter.

Chemicals. — Experiments with chemical weed killers have demonstrated that morning glory and many other weeds can be controlled. We hope before long to complete experiments which will prove that morning glory and Johnson grass can be completely eradicated by the use of chemical sprays. It is possible that a chemical spray may also be found to control yellow star thistle.

Spray with iron sulphate, 100 pounds to 52 gallons of water, or use arsenite of soda, 1½ pounds to 52 gallons of water. Copper sulphate can also be used, 15 pounds to 52 gallons of water. Caution: Where arsenite of soda is used care should be taken not to inhale the fumes or the dust, or get the spray in the face while operating, as it is poisonous. The time to spray morning glory to get the most effective results is in the dry season, when the plants will absorb the spray readily.

SHOULD NOT CO-OPERATIVE ORGANIZATIONS BE COMPELLED?

To the Editor: May I express myself in regard to the personal equation and to the banking suggestions of Col. Irish in your issue of March 4?

Do I owe Col. Irish an apology for spotting him as a politician? If so I hasten to do what is right. Personally I appreciate him too much, both as an institution and a man, to wish to say anything offensive. However, who but a politician would think of placing so many officers as he does in a $25,000 bank, which he asks us to contemplate in the Press of March 4th? And again: let it be noted that I did not insinuate that the gentleman is a statesman either. For it is the prerogative of a statesman to spend his time making laws to take effect several years hence (as our congressmen have been doing with the Philippine Bill), consequently these statesmen have not time to be thinking what to do with rural credits and other pressing questions of the present time, while Col. Irish evidently believes in raising some easy (?) money pretty quick.

But I wish in this letter to call the attention of Col. Irish to several compulsory co-operative schemes, existing and organized under the laws of California, and also to point out that the personal equation gets knocked into the most beautiful cocked hat therein that one might wish to see. What is an "irrigation district" but a co-operative association organized and run as a political subdivision. And why should the State not have laws permitting the raisin growers to organize a similar association into which every raisin grower must associate or an orange growers' association or any other of our important fruit-growing industries? If an irrigation district is

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formed and my lands are included in the district boundaries, I have no recourse but to pay my taxes and secure what benefits I may, though I may be raising crops which do not need irrigation and I might not derive five cents' worth of benefit. On the other hand, it is an easy matter to demonstrate that every raisin grower in the State is helped by the association and hence all should be compelled to help the association in return.

You see we not only need some cheaper money, and State aid in marketing. We need even more. We need laws to enable the fruit growers to form "compulsory co-operative associations" or "fruit growers' community of interest associations," and these would enable the fruit growers of this state to add as much more wealth to the State as the great and rich irrigation districts have done.

Merced. E. W. Doane.

A NEW CORN FOR DRY CLIMATES.

To the Editor: I have not seen a notice in your paper regarding Papago sweet corn. This was introduced by the University of Arizona. It makes more fodder than any green stuff I have planted, as one kernel will make six or eight stalks and each stalk makes an ear. I got better results than with Sudan grass, pie melons or feterita and I think it worthy of trial for silage purposes as the stalks are small in circumference but grow tall. The plant was first brought to light by Prof. G. F. Freeman, of the Arizona Experimental Station in the summer of 1910 while visiting the Papago Indian villages in the desert valleys of southern Arizona. Several strains were found and later crossed in the hope of combining the good qualities of each. Regarding the plant Prof. Freeman says: "The first year after the cross was made the average weight of the ripe ears was about 31 grams. Some, of course, were larger, weighing as much as 100 grams or more. Even these were small when compared with the larger varieties of eastern sweet corn. It was therefore planned to breed this corn for a few years in order to increase somewhat, if possible, the size of the ear and grain before giving it to the public for general planting. After four years of breeding, the average weight of the ear has been more than doubled, and the size and depth of grain has been materially increased. There are no indications that limits for these characters have as yet been reached, but as the variety now stands its superiority over eastern sorts for planting in the Southwest is so marked that it would be unjust to withhold it longer from public use."

I have no seed to sell.

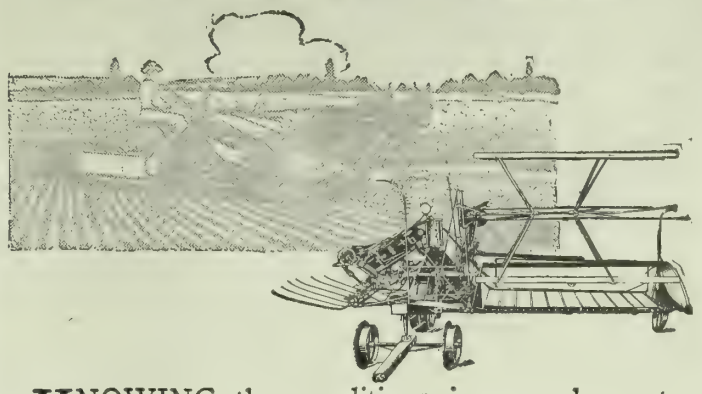
Raymond, Cal. A. O. Nelson.

WHO HAS A GOOD WAY WITH REDWOOD SPROUTS?

To the Editor: Do you know of any effectual, permanent method of killing or preventing second growth redwood that sprouts from both stump and roots of logged off redwood trees? I am interested in some of this land and am unable to utilize it for pasture on account of this second growth which continues to sprout even after brush has been burnt over the stump. Any information you can give will be greatly appreciated.—F. L. L., Bethany.

[We know nothing but burning, bark chopping and grubbing. Will some one answer from redwood experience? Success with other trees may not fit.—Eds.]

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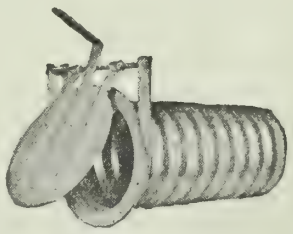
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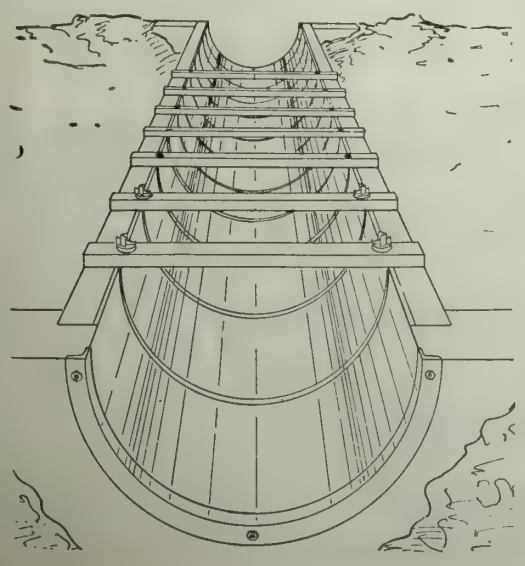
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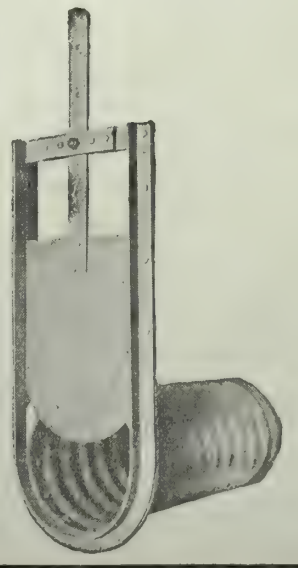


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Efficiency in Labor on the Farm.

To the Editor: In your issue of February 19, Harry F. Stone gives some figures and opinion based thereon in regard to working six or seven days in a week, professing to show that more could be accomplished in six days' work than in seven.

If the figures show anything at all they show that Mr. Stone's brother was doing more in the start than he was capable of carrying out, and that in the second week's work he was getting accustomed to the kind of work. A competent picker, when accustomed to the work, makes the same stunt every day, irrespective of resting on the seventh day, and when it is necessary to work on the seventh there is no diminution in the output, nor is there any increase in the output by virtue of a day's rest.

A case in point came under the writer's knowledge recently, when orange pickers were crowded on account of wet weather and worked overtime to catch up with shipments. The women packers worked away into the night, making probably fifty per cent more time with just as much packed per hour as when shorter hours were worked. At the end of a week or ten days the packers lost in weight but not in efficiency. Working by the box they were up to full capacity all the time.

Where jobs are continuous there is no discrimination in the output, day by day. Shorter hours do undoubtedly increase the efficiency as was proved in Australia on the adoption of the eight-hour law day among mechanics, as about as much was done in eight hours as had been customary in ten.

In the Province of Canterbury, New Zealand, where an eight-hour day was always the custom among farmers as well, they got along just as well as where a 10 hour day prevailed.

As an equivalent to the shorter hours there were perhaps fewer breathing spells. Not so very long ago and before the advent of modern labor-saving devices, in harvest especially, the day's work was from sunrise to sunset and the earlier pioneers were at work, both men and women, about all of their working time. Today, where the eight hour prevails in farm work in busy times, pay by the hour is customary.

Every small farmer that does his own work knows that in the generality of cases where the ordinary hand is hired that his own time is oftentimes worth two of the hired hand, not only from his own increased diligence, but from using his brain to take advantage of every situation.

Riverside. James Boyd.

HONEY PLANTS AND BEE MOTHS.

To the Editor: I have a number of swarms of bees, but the honey we get here is quite dark and not very salable. I can move them up towards the foothills. There is plenty of manzanita and chaparral. Would that make a good quality of white honey? Also, is there any known remedy to keep moths out of the hives?—Enquirer, Lodi.

[Manzanita yields good honey: from white to amber—according to different regions, apparently. Chaparral is credited with amber honey, but the name "chaparral" covers various shrubs which may differ considerably in honey characters. There is no royal way to free hives from moths. They have to be watched for and the frames and hives cleared of them. Strong colonies protect themselves largely, but should be watched also.—Eds.]

COW PEAS IN CORN.

To the Editor: Referring to a query which appeared in your issue of March 18, about the desirability of growing cow peas in corn, I have been experimenting with cow peas and different kinds of corn for the last seven years and find I have the best results by mixing the two together; using one quart of cow peas to two quarts of corn and planted in drills three and a half feet apart, thinning the corn to one stalk every 18 to 24 inches apart. I find I can get more corn per acre by planting cow peas with the corn than I can without and the peas will produce well in the corn, the vines running to the top of the corn and setting so many beans that they often break the stalks over. This applies to Whip-poor-will cow peas, as they will make four times the vine and I think more peas than the Blackeyes.

Snelling. G. T. Allen.

A GOVERNMENT BONE MINE.

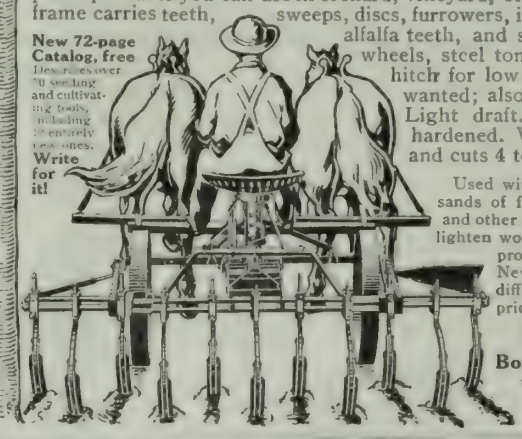
Millions of dollars' worth of seal and seal-bone deposits on the shores of the Pribilof islands, in Alaskan waters, a vast store of Government-owned fertilizer available for practical use! Secretary Redfield transmitted a report of the Bureau of Fisheries, telling of the Pribilof deposits, representing the accumulations of a century or more and constituting probably the largest deposits of bone in the world. Although they have not been fully surveyed, the report says, one of the deposits is a mile long by half a mile wide and fully six feet deep. Mr. Redfield directs attention to the fact that raw ground bone was bringing $35 a ton in December.

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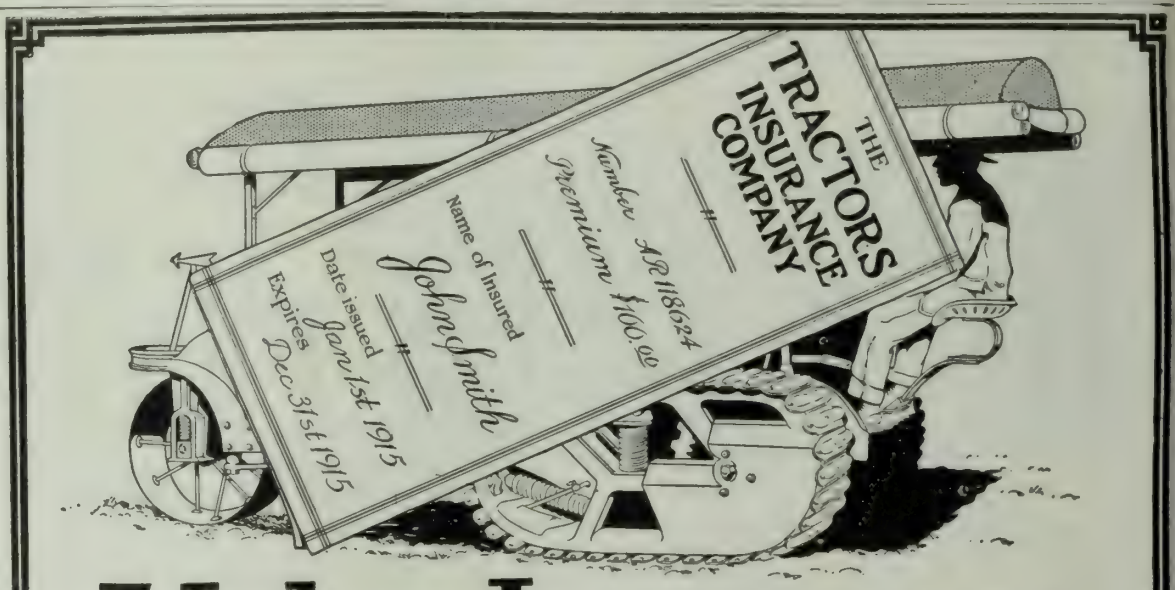
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WHAT ABOUT SPINELESS CACTUS?

To the Editor: John Fox, horticultural commissioner of Napa Co., in the March 25th issue of the Press, wrote of the spineless cactus in a not very complimentary vein.

Actual experience with the spineless cactus I have had none, but from what I have seen, heard and read about it, I believe that there is a great future before it in countries which have tens of thousands of acres so poor that they will grow nothing but cactus.

I believe that cactus has a very low feeding value, so has such vegetables as white and yellow turnips, yet they are grown in immense quantities in the east and in Europe for stock-feeding purposes.

We have millions of acres in the state that will grow cactus and nothing else. Once planted, it is there forever. If it has any feeding value at all, the lands would play an important part in keeping dry-fed stock in condition.

One would naturally think from the length of time the cactus has been before the farmer that it would be thoroughly tried out before this. A couple of years ago I was passing by a place where there was what looked to me a nice patch of cactus. I went in to inquire about it. The owner said it was a fake and swindle; that the men selling it ought to be in jail, etc. I inquired the age of it. He said it had been planted 15 months. To me it had made a marvelous growth. The biggest plant had increased 14 fold, and yet the owner was displeased with it. He had heard tell of it producing 100 tons per acre: nothing short of that amount would satisfy him. The land on which it was growing was volcanic ash. Corn planted on this land would grow one foot in height, tassel out and die. Alfalfa might germinate, but the first day would cook it.

A few weeks ago a neighbor sold me a cow for chicken feed. She was down to skin and bone. She had been having all the dry hay that she wanted, but no green stuff. She was pretty ancient, but had my neighbor had a patch of spineless to draw upon to feed with the dry hay, I don't believe that I would have got her for chicken feed.

No doubt thousands of head of stock have died for lack of green feed this winter. I hope that some of your readers who have had actual experience in growing and feeding cactus, and have no plants for sale, will give their experience, stating quality of land where grown, and what it would do if planted to other crops etc. **Chas Blom.**

[We have frequently asked for such testimony. Who feels it practically worth having, for actual use, not for sale to others? Mr. Blom has the common error that cactus will grow everywhere. It does not do that naturally. It picks its own places in the desert, and the better the land the more cactus you see. But we will not quarrel about that. Who has it and is glad of it?—Ed.]



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WHAT CITIES PAY FOR MONEY.

"Of the 238 incorporated cities of California," says State Controller Chambers, "198 have bonded debts, running from comparatively small sums to large totals. I find that previous to 1900 nearly all the bond issues were upon a 6 per cent basis; from 1900 to 1907, the rate ran 4, 4½ and 5 per cent, and from that year to date the rate has been from 4½ to 5 per cent. The highest rate I find was for a levee bond issue by the city of Marysville, in 1876, at 8 per cent. The amount originally authorized was $58,000, and of this sum $3500 still remains unpaid."

MARKETING AND FARM CREDITS.

"Marketing and Farm Credits," for 1915, contains the addresses given at the third annual sessions of the National Conference on Marketing and Farm Credits in joint program with the National Council of Farmers' Co-operative Associations. It contains 544 pages and is full of interesting facts about the two great business problems that farmers must solve for themselves. The price is $1 (postage 15 cents extra), from Secretary Charles W. Holman, Madison, Wisconsin.

SUMMER-SOWING ALFALFA.

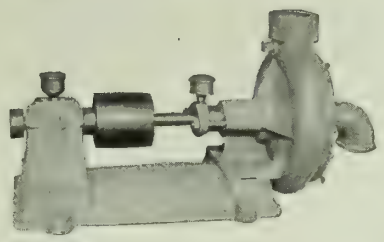
To the Editor: Alfalfa may be sowed in mid-summer with fair success. The system I use works fairly well; however, I believe early spring is the best time for alfalfa planting.

First I irrigate the ground, then work it up well as soon as possible after wetting. Then I sow milo or some other head corn and harrow in after. After the corn has started and needs water again, sow the alfalfa and irrigate. **Frank Hasper.**

Seeley, Imperial county.

THE WINSBY PUMP

Our New 1915 Type Pump



Best Model for Low Lift Pumping

Size	1 in.	1¼ in.	1½ in.	2 in.	
Price	$16.00	$20.00	$25.00	$30.00	F. O. B. CARS OAKLAND

Larger Sizes at Proportionate Prices.
Complete Pumping Plants of Any Size or Type Furnished and Installed.
WE MANUFACTURE
Pumping Machinery of All Kinds and for All Purposes.
Mining, Milling, Concentrating and Rock Crushing Machinery.
Ice Refrigerating Machinery, Cold Storage, Rooms and Counters.
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WE CARRY IN STOCK

Pipe	Belting	Pulleys	Shafting	Boilers
Casing	Leather	Wood	Hangers	Steam
Valves	Rubber	Steel	Collars	Engines
and	and	and	and	and
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GENERAL OFFICES AND WORKS: OAKLAND, CALIFORNIA.
We are the largest manufacturers of pumping machinery on the Pacific Coast.

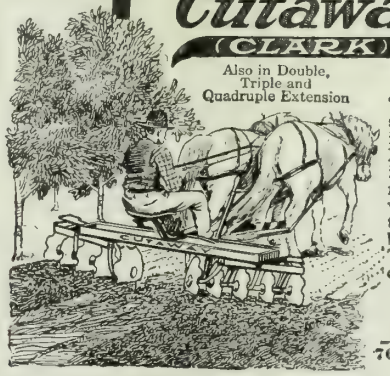
Get in Close!

Use an extension head disk harrow and liven up every tree.

Orchard tillage pays as big as field tillage—especially where it is carried close. Note the illustrations below—see how the cultivation extends beyond the team and under the low limbs. Here you have the orchard tool of unsurpassed efficiency — the

Cutaway (CLARK) Extension Head Orchard Harrows

Both Single and Double Action

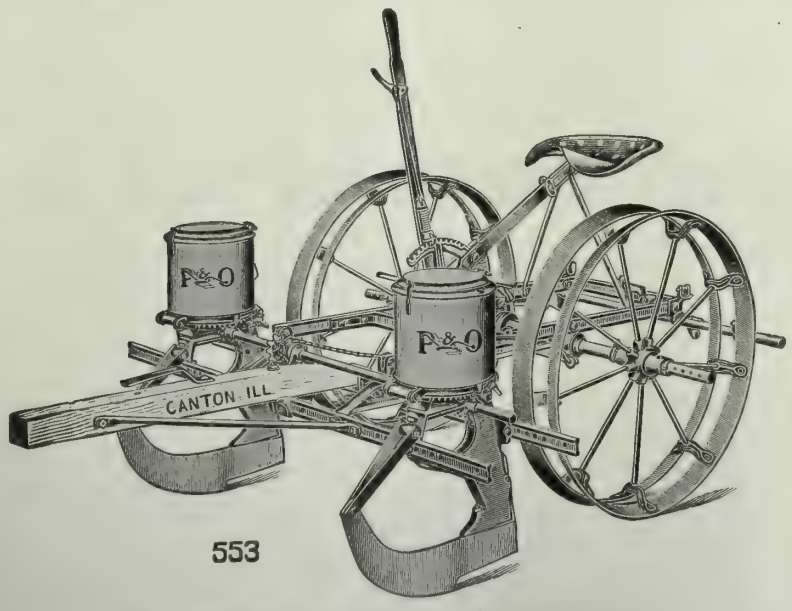


Also in Double, Triple and Quadruple Extension

They have CUTAWAY (CLARK) cutlery steel disks, *forged sharp*. Close up into a regular harrow for field work. Light in draft. The single action is reversible. If your dealer has not the *genuine* CUTAWAY write to us direct. Be sure to write for our new free book, "The Soil and Its Tillage." Get *your* copy *now*.

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Maker of the original CLARK disk harrows and plows
7610 Main Street - - Higganum, Conn.

P. & O. No. 40 Combined Corn and Bean Planter



Furnished with open center or solid concave tires.

The Combined Corn and Bean Planter here illustrated is a machine built by one of the largest manufacturers of planters in the world, particularly to meet the requirements of the Pacific coast trade.

It is not a made-over machine, but is built from the ground up for Coast needs. This fact, together with the reputation of the P. & O. Company for building tools right in every detail, insures absolute satisfaction to every user of this planter.

It's the Way They are Built

FEATURES:

Equipped with a full set of plates for planting any of the different kinds of corn or beans commonly planted in California, including Egyptian and Kaffir corn.

Adjustable to any width rows from 28 to 44 inch. The check-rower machine is adjustable for checking rows 3 ft. 4 in., 3 ft. 6 in., and 3 ft. 8 in.

Accurate planting insured by the sight feed. Sight feed has a large opening, and the seed is visible at all times to the operator as it drops from the hopper to the upper valve.

Quick, detachable runners held on the shank by one bolt. Easily removed for sharpening.

Write for descriptive circular and address of nearest agent.

Baker & Hamilton
San Francisco, - Cal.

General Agricultural Review.

DECIDUOUS FRUITS.

Apricots will go less than 45 per cent of a crop in Kings county this year.

Unless a late frost is encountered apple growers of the Pajaro valley expect to have a large crop this year.

Late pruned peach trees on the C. F. Walker ranch in Fresno county are showing better leaf growth than early pruned trees.

"What will control red spider on prune trees better than dry sulphur?" inquires J. E. Hester of Visalia.

According to fruit buyers in Alameda county the apricot crop there will not be more than one-third of a normal one. Cherries are also reported to have been damaged.

Cherries are estimated at 50 per cent of a full crop in Santa Cruz county. Apple growers are spraying the first time for the codling moth, cankerworm and mildew.

Fruit crop prospects around Beaumont are unusually good at this time, according to reports from there, the only likelihood of damage now being from late frosts.

Peach blight around Selma does not seem to have been prevented by fall spraying with Bordeaux and spring spraying with lime sulphur, according to L. T. McKnight.

One of the largest orchards set out this year in the vicinity of Vacaville is that of the Hartley Orchard Co., who are planting 350 acres to prunes, apricots, shipping plums and early peaches.

M. Rusznak of Ontario delivered 47 tons of prime Tuscans to the canneries from 390 trees 8 years old, instead of 9 tons from 5 acres as stated in issue of April 1 under "Dry Farming Peaches."

Almond growers in Sutter county state that there is no truth in the published statement that there was likelihood of the Sutter association withdrawing from the State Almond Ass'n.

Because a number of trees in Sutter county are dying from some unknown disease Ralph E. Smith has been called into consultation by County Horticultural Commissioner H. P. Stabler.

A small orchard of almonds has been planted by Glenn Hall of Greenfield, Monterey county, this spring. The trees will be interplanted with gooseberries, which do well in the district.

According to S. Scurich of Watsonville there have been apples shipped to Los Angeles from Oregon which were badly affected with scab and in other ways unfit for consumption. He suggests that the Apple Distributors look into the matter.

Almonds, prunes and pears have led in this year's orchard plantings in Lake county according to Horticultural Commissioner F. G. Stokes. A few walnuts of the Mayette and Franquette varieties have been planted.

Steps have been taken toward the organization of a pear growers' organization by a number of pear growers in the Delta district. Efforts will be made to control the sale of pears to canneries through a Statewide association.

After a careful survey of the peach orchards around Gridley, made by a committee from the Farmers' Union, the statement was issued that owing to frost damage the peach crop of that district will not be more than 50 per cent normal.

According to Horticultural Commissioner Beers of Santa Barbara county, the apricot crop will be short all over the county because of a cold rain that prevented fertilization. The size of fruit will be much improved from the small setting, however.

There is some objection among dried peach growers to the clause in the new Peach Association contract which makes it optional with the association whether it will allow withdrawal of members' crops to sell to canneries, according to E. E. Ford of Kings county.

According to the El Centro Progress some of the most experienced apricot growers in the State have purchased land in Imperial Valley and will make large plantings of that fruit, thus dispelling the feeling that Imperial Valley is not a good district for deciduous fruit growing.

The first attempt at frost fighting with orchard heaters in the Napa valley was successfully made recently by Fred Groeneveld and E. A. Price, who were able to keep the temperature in their prune orchards above 32 degrees, although it was down to 28 degrees on adjacent land.

Prof. F. T. Bioletti of the University of California, in co-operation with the California Associated Raisin Co., has been carrying on demonstrations in Fresno county as to the proper way of applying sulphur. Prof. Bioletti advises sulphuring early in the season before there are any signs of mildew.

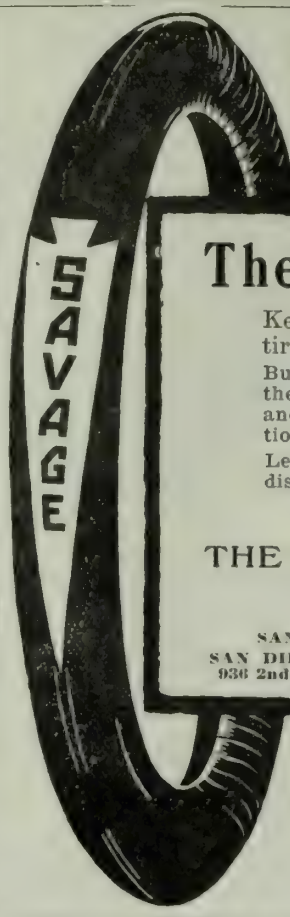
While on a recent trip among the fig orchards of Merced county, Prof. A. J. Condit of the University of California suggested that Smyrna fig growers organize to have Capri fig trees planted in the foothills to insure a supply each year at a reasonable price. Capri fig trees in both Merced and Fresno counties were generally frozen last winter.

While apricot blossoming was heavier in Monterey county than usual, according to J. B. Hickman of Aromas, the recent change in weather reduced the crop to fully 50 per cent of a normal one. This may be still further reduced later by the brown rot. Apple trees in that district are blooming freely, but it is too early to predict the size of the crop.

Contrary to reports of 60 per cent of an apricot crop in Tulare county, Horticultural Commissioner Chas. Collins writes us that the crop is exceedingly spotted, some orchards being good but very many having practically nothing. He believes 30 per cent of a normal crop to be a fair estimate. He says peaches are heavy but that varieties subject to curl leaf are sustaining considerable damage. It is too early yet to tell what the result will be. Prunes promise a heavy crop. Citrus trees are blooming very full and vineyards are looking well with no frost injury to speak of.

CITRUS AND SEMI-TROPICAL.

About 10,000 avocado trees have been sold in Southern California for planting this season and there are as many more that will be sold, ac-



The Black Wrapper

Keeps light and moisture away from the tire—prevents deterioration.

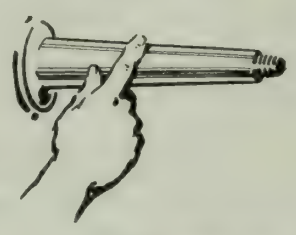
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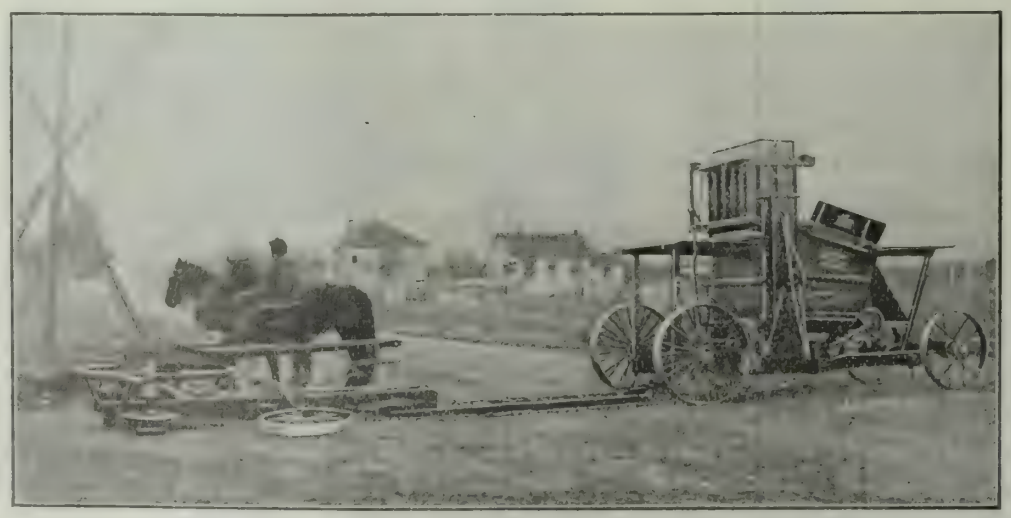
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Thirty-five years in this Business in Stockton.—A 500-gallon tank, $8.00. A tank 6 ft. x 2½ ft., $7.50. Other tanks equally cheap. I deal direct with the consumer. You will save 10% to 25% by dealing with me. All sizes in stock. Clear dry redwood direct from the mill by vessel. Write for prices today. Latest improved machinery. Doors, Windows, Frames, Mouldings.



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Write for particulars regarding our 1916 Portable Horse Power and Gas Balers, guaranteed to excel all others in workmanship, durability and capacity. We make both 3 and 5 Wire Bale Presses.

cording to T. U. Barber of Los Angeles.

May 16 will be Ripe Olive Day and growers, packers and State officials are all working toward a State-wide festival in recognition of the advances made in the olive industry.

Not over 40 per cent of avocado seeds planted for nursery purposes result in trees which are successfully budded and sold, according to a nurseryman who has been in the game practically from the start.

Exhibitions of fruit are desired at the California Avocado Growers' Ass'n meetings, so it is planned to hold them in spring and fall. The next one is scheduled for April 29. It will include a good program and the interested public is invited to attend.

One of the largest citrus land deals ever made in the northern part of California was the purchasing recently of the J. M. Howell ranch of 5,000 acres near Corning by Seattle capitalists who have secured the services of W. B. Ames of San Dimas to superintend the planting of over 600 acres of Washington navels this spring.

A report from Dinuba says that Valencia orange growers in that district are expecting a maximum yield of fine fruit this year. As many of the trees are just coming into bearing the crop will be much larger than ever before and growers are receiving advance offers of over $1 a box. Most of the crop will be shipped through the Northern Tulare County Citrus Ass'n.

VINES AND VINEYARDS.

Ramsey Bros. of Woodland have planted 30 acres of Sultana grape vines this spring.

Fresno county grapes, especially those pruned early, were pretty badly frosted late in March.

J. W. Jeffrey, who is making a survey of the grape vines in the State Department of Viticulture, has found 10,350,000 vines in Napa and Contra Costa counties.

Don't irrigate grapes till after the fruit is set. Dry them out temporarily by plowing the dirt away from them, says Frank Henry of Fresno county.

When you plant vines where rabbits, etc., are likely to hurt them, tear a hole in the bottom of a paper bag, slip it down over the cutting, throw a little dirt into it, and the animals will not bother it, says Frank Henry.

As a result of the campaign started the first of January by the directors of the California Associated Raisin Ass'n, 45,533 acres have been signed up, giving the company control of 90 per cent of the raisin crop,, according to a published statement in the daily papers. The association now has a total membership of 7500 members, an increase of 1500 since the first of the year.

FIELD CROPS.

Indications are that both the barley and bean acreage in Monterey county will be larger this year than last.

A dispatch from Yolo county says that the report which has been circulated to the effect that a large number of hop vines in that county are to be pulled up is not true.

B. Graves, who owns a mountain ranch near the Newhall ranch in Monterey county, has succeeded in growing good crops of alfalfa on rolling hills without any irrigation water. He is now putting in several hundred acres at an elevation of 1500 feet above sea level.

Rice growers in San Joaquin county have formed an organization to be known as the San Joaquin County Rice Growers' Ass'n. The association was organized for protection against the weed pest but it is announced that later in the year it may co-operate with the Sacramento Valley Rice Growers' Ass'n in selling the crop of its members.

Rice shipments have again been started from Butte county to Porto Rico after a delay of three days, pending an order received by the railroads not to accept any more rice for shipment by way of New Orleans as ships were not available from there to Porto Rican ports. The new order allows shipments by Virginia. About two-thirds of the California crop is being marketed in that country.

MISCELLANEOUS.

The California Vegetable Union will ship 100 cars of cabbage from Garden Grove, Orange county, this spring.

Pump irrigating 15,000 acres near Terra Bella is to be the work of a co-operative organization of farmers already organized. Offers have been made to buy the bonds.

As a result of success so far encountered in the manufacture of potato flour at the recently equipped mill in San Joaquin county, the mill is to be doubled in size.

An Oregon apiary company has shipped two carloads of bees into the Porterville district where they will be distributed among the orange groves to make orange honey.

A petition is being circulated in the Atwater district of Merced county for the construction of a drainage district to handle the surplus water of the district in the winter months.

AVOCADO SEED LIMITED.

Only 40,000 to 50,000 avocado seeds are now available per year for nursery purposes, according to Hart and Barber of Los Angeles, whereas when the Federal quarantine was put onto seeds from Mexico, some 250,000 had been imported, were held in cold storage several months, and most of them finally burned. A large part of the present avocado nursery stock is from seeds imported before the quarantine was applied in 1914, therefore the supply of fruitless budded stock for orchard planting is bound to be limited for some years to come or until local seed production fills demand.





John Deere Disc Plows for Tractors

For Field or Orchard

MADE especially for use in the West. Work successfully in every soil where a disc plow should be used.

Plow anywhere from five to twelve inches deep.

One-man outfits—controlled by man on the tractor. Work with any standard tractor.

Can be used either for field or orchard work simply by changing the land axle.

All levers down close to plow when at work—plow can be operated close to trees and under limbs without injuring them.

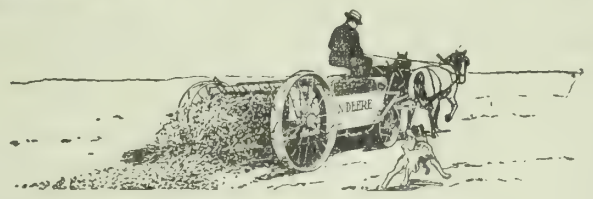
Easily transported—special lever at the rear for lifting discs high and level.

Over fifteen inches clearance under beam; twenty inches between discs.

Twenty-four or twenty-six-inch discs with chilled metal bearings—constructed so that bearings do not drag along wall of furrow when plowing deep.

Can be reduced to four discs by taking off one intermediate section and telescoping connecting rods.

Write for free booklets describing the John Deere Tractor Disc Plow No. 10 for field work and No. 11 for orchard and vineyard.



John Deere Spreader

The Spreader with the Beater on the Axle

ONLY hip high to the top. Wheels out of way when loading. Mounting the beater on the axle is patented. Write for Spreader booklet.

Three exclusive John Deere Spreader features:

[1] Beater on the axle—nothing else like it. [1]

[2] Revolving Rake—load moving back to beater revolves the rake. Draft actually less. Even spread certain—no bunching. [2]

[3] Ball Bearing Eccentric Apron Drive—requires no attention. Performs wonders in the working of the spreader. [3]



John Deere Plows for Light Tractors

For Orchards and Vineyards

PRACTICAL—one-man outfits. Work with any standard tractor. Controlled by man on the tractor.

High and Level Lift—Pull the rope and all bottoms raise high and level. Another pull lets them down. Plows do not clog or gather trash on the turn.

No levers—plows leveled and depth regulated by screw device. Can be run close to trees and vines without injuring branches.

Regular with three or four 12-inch bottoms. Quick Detachable Shares—save 80% time changing shares. Write for free booklet describing light tractor plows for orchard and vineyard, or regular field work.



Van Brunt Drills

With Adjustable Gate Force Feed

THEY plant any small seed, alfalfa to bearded oats, peas or beans.

Amount sown per acre easily regulated merely by shifting feed gauge levers.

All the ground sown, because the Van Brunt adjustable gate force feed and special agitator in the hopper compel seed to leave hopper in even, continuous streams—no bunching or choking up—and an equal amount goes into each furrow.

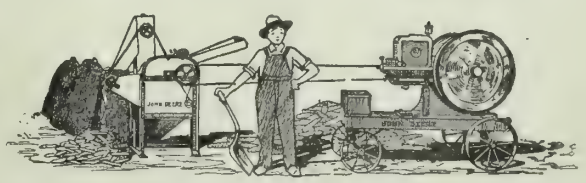
An even stand of grain is secured, because pressure springs compel all the discs to cut furrows of even depth, and the closed delivery places seed at bottom of these furrows.

Van Brunt Drills do not clog up. Scrapers keep discs absolutely clean.

Smooth running—each wheel drives half the feeds, equally distributing the work. A direct, double, gear drive from the continuous axle.

High grade discs with bearings that are guaranteed to last lifetime of drill. Either single or double discs.

Grass seeder attachment can be furnished which will drill or sow broadcast as desired. Write us for free booklets.



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Dependable Farm Power

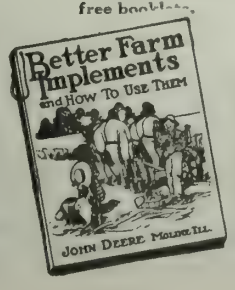
"R & V" Triumph—always develops rated horse power—made in 1, 1½, 2½, 4, 6, 8,10, 12, 16 and 20 H. P. sizes, stationary and portable.

Easily started; perfect speed control (speed can be varied 40 per cent without stopping engine). Complies with insurance regulations. Hopper cooled—a simple, efficient system that does not require long pipes and numerous fittings.

High grade throughout. Inspect the extra guard ring over piston pin to prevent possibility of scoring cylinder. Ask about the "R & V" oscillating magneto. Write for free booklet.

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Better Farm Implements and How to Use Them



BOOK FREE—168 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars. Describes and illustrates: Plows for Light Tractors; Steel and Chilled Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Lister Plows and Cultivators; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain Wagons; Teaming Gears; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders, Stackers, Sweep Rakes, Mowers, Self-Dump Sulky and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills and Seeders; Grain Binders; Corn Binders; Gasoline Engines. This book sent free to every one who states what special implements he is interested in and asks for Package No. L-152.



John Deere, Moline, Illinois

Mechanical Power on the Farm.

ORCHARD TRACTOR RUSHES WORK.

[Written for Pacific Rural Press.]

"Here is the handiest tractor I know of. We worked in and out of the trees with this double-disk all day yesterday without breaking a branch." So spoke Mr. Brabrook of Edwards and Brabrook, who have a lemon orchard set on the quintuple system near La Habra. "She is guided by regulating the speed of each track independently of the other."

He was, at the time following the disk with a big stick to clean out the adobe mud which stuck it up even while the little Bullock Creeping Grip tractor of 16-8 h.p. skimmed along on top of the soft dirt on its tracks, five feet of which were always resting on the ground. The disks, unweighted, tipped the scales at 1460 pounds.

"The only objection to this tractor is that it spoils Scott's complexion," said Mr. Edwards. "It does the work," and a heavier engine would only weight down the ground more."

"It pulled these 24 disks the other day, with three men and 400 pounds on them," said Mr. Scott, the driver. "It pulled out 40 boxes of lemons on a sled through the soft ground and across a muddy ditch about two feet deep and three feet wide. If there had been a front weel on the tractor we would sure have been stuck. It burned 12 gallons of distillate yesterday on the disks. Fifteen gallons would do a hard day's work. We can disk 20 acres both ways twice between each two rows in 18 hours."

"Why don't you weight the disk down today?" asked Mr. Edwards.

"Because we want to get over the orchard as soon as we can, just scratching the top, breaking the crust, and cutting the clods to pieces. Anyhow it clogs up enough in the wet ground running light. We will save moisture by getting over the ground lightly and soon. Then we can really cultivate deep at our leisure."

PROBABLY CARBURETER TROUBLE.

To the Editor: I have a 4 h.p. jump spark engine which is giving me a great deal of trouble. It sometimes misses fire two or three times and then emits a dense black smoke, then picks up gasoline and uses it for five or six revolutions steady without cutting out. Then it may run steady for a short time, but again repeats the process. I wrote the makers about it and they suggested that I get a magneto. I did so but it acts the same way running a pump. I used it last summer running a 10-inch Smalley cutter and thought possibly I was giving it too much to do. But as it is acting the same way on the pump, that could not be the reason. The thought occurred to me that it might be the spark coil and that it missed sometimes. I started the engine up to see if I could tell if the buzzer missed, but could not notice it move at all. Kindly advise me what to do.—A Subscriber, Denair.

[Answered by Prof. J. B. Davidson, University Farm, Davis.]

[It is not possible to make a definite diagnosis of the trouble from the symptoms described, but the indications are that the trouble is with the fuel supply rather than the spark, although ignition troubles might give some symptoms similar to those described.

An engine provided with a fuel pump which is not working perfectly will often act in the way described, the fuel becoming so low in the carbureter that an explosive mixture has not formed, resulting in a missed-cycle, which is followed by continued action of the pump and an excess of fuel for the engine. The fact that black smoke is thrown down following the missed explosion would indicate that there is something wrong with the carbureter.

We advise the owner to look into the matter of fuel supply carefully and see whether or not the pump keeps the fuel at a uniform height in the carbureter overflow cup all the time. The trouble is more apt to happen on light loads than heavy loads, and is confined to engines with pumps which operate only when there is a working stroke.

Referring to the spark coil, some jump spark coils will not work well with magnetos. This trouble is due to the action of the magneto coils. But we take it that the trouble is not due to the magneto inasmuch as it has been described as being the same when batteries were used.]

POWER HORSE-CLIPPER.

[Written for Pacific Rural Press.]

Clipping fifteen horses or mules in nine hours is the rate claimed by C. J. Eckles and his partner of Santa Ana with their power-clipping machine. Mr. Eckles said they had clipped over 700 head during the season beginning about Oct. 5 and ending Mar. 1. Later clipping is inadvisable on account of sunburn.

The outfit consists of a 2 h.p. gas engine set on the front end of a wagon-bed frame which supports a 6-foot tall framework over the back wheels. The frame consists of vertical pieces connected at the top by a crosspiece which projects perhaps a foot. The verticals are supported by braces down to the center of the wagon bed. Across these braces rests a shaft run by a belt from the engine.

The shaft has a belt wheel on each end which runs a belt wheel hung under each of the projecting ends of the crosspiece on top. A loose wheel on the same axis takes the belt when the clipper on that side is not to be run. Another tight wheel on the same axis runs a belt rope out to a pulley on the end of a gaspipe which projects 4 feet beyond the wagon end and hangs pivoted on the projecting top piece with a counter weight at the other end, so its projecting end may be raised or lowered at will.

The projecting pulley runs a "rolling chain" inside a flexible tube eight feet down to the clippers, which are thus handy to reach every part of the animal. One man works on each side, and with good luck they get through in 30 minutes.

TRACTOR TURNS AROUND IN BOX CAR.

[Written for Pacific Rural Press.]

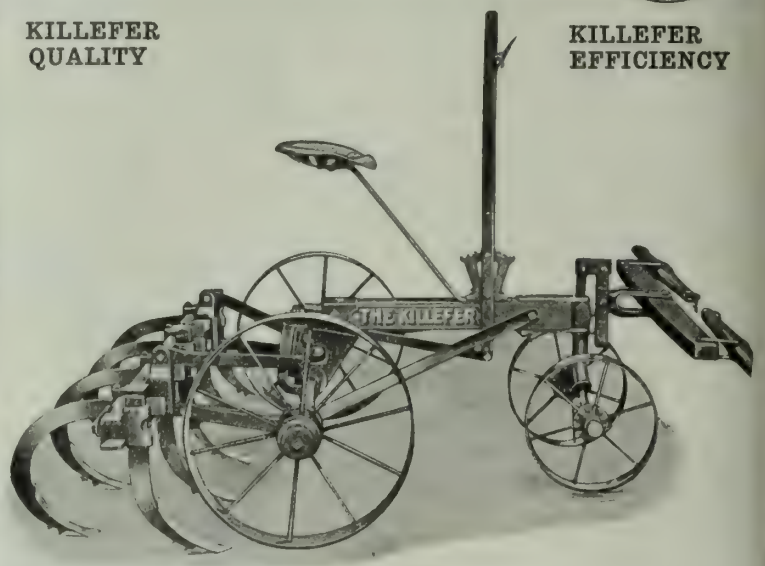
"I saw an orchard tractor climb onto an auto truck and turn around on it this morning," said F. A. Tutt, Pacific Rural Press representative at Los Angeles.

"The truck was six feet wide. It backed up to the curb and two 3x16

Our Standard Cultivator (K)

KILLEFER QUALITY

KILLEFER EFFICIENCY



This Cultivator is constructed on the same lines as our Heavy Duty Tractor Cultivator, but of lighter material for team use. The lifting device is connected directly with the axle and in raising and lowering the frame the axle turns in large bearings. This makes a powerful lift, doing away with the many joints required in parallel lift machines, and makes the frame bar doubly rigid and without any tendency to dip or run deep at the ends. Placing the standards between the bars gives a much stronger frame bar and more clearance between the standards which allow us to work trashy ground successfully.

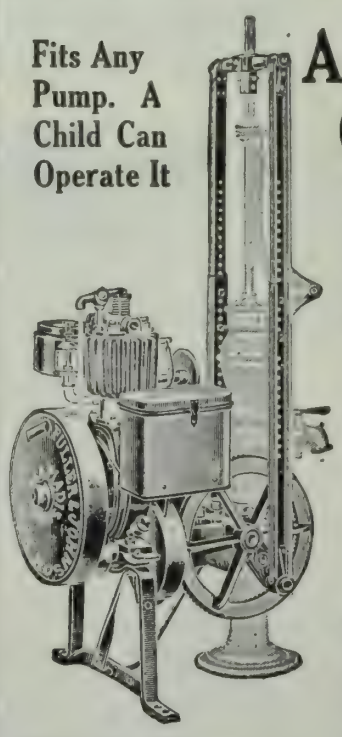
The axles are not rough iron, but are made of steel with turned bearings. The wheels are the most perfect dust proof ever put on the market with hubs that can be easily and cheaply replaced when worn. These hubs are not rough cast, but are turned to fit the axles and supplied with Safety Compression Grease Cups.

This cultivator was built for a two-horse machine, but the use of extremely high carbon steel for frame bars and standards has given us a cultivator that is being used successfully for four-horse work.

The Killefer Manufacturing Co.

2209-21 Santa Fe Ave. Los Angeles, Cal.

Fits Any Pump. A Child Can Operate It



A Vital Necessity On Every Farm

This Farm Pump Engine should be on every farm, not because of the time, work and money it saves but because of its great adaptability for all kinds of farm labor. This engine will supply from 270 to 2450 gallons of water per hour on the hottest, coldest and calmest days. It will enable you to have all the water you want for your stock, household use and for washing your wagons, farm implements, etc, And in addition, the

Fuller & Johnson Farm Pump Engine

will run your cream separator, washing machine, churn, grinder or any other mechanism that is run by hand power. This Farm Pump Engine runs steadily, easily, without watching and without vibration. It comes to you ready for instant use, there are no extra parts to buy and it can be attached to any pump without extra fittings, special platform or foundation.

Write Now for Interesting Literature

The literature on the Farm Pump Engine describes in detail just what it will do. It shows clearly and briefly how it can save its owner work and money, and the many testimonials we have prove conclusively that the claims of the makers as to what it can do are not only truthful but very conservative.

The Fuller & Johnson Farm Pump Engine is the lowest priced machine of its kind on the market. It is also the only one of its kind made which will give such a variety of long, dependable service.

Write for Literature NOW while this is before you,

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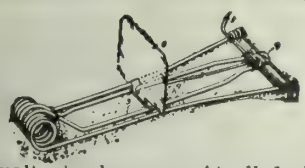
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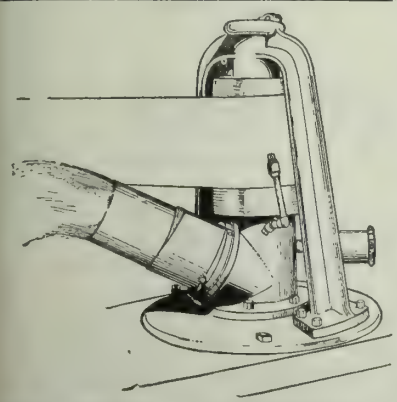
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It saves you money in initial cost of pumping plant.
It pumps more water with less horse power.
It pumps 250 gallons per minute from a seven-inch well.
It pumps 1000 gallons per minute from a ten-inch well.
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Correct in every detail. No trouble. Cheaper water. Perfect satisfaction. 2 Irrigation Booklets free. Luitwieler Pump Eng. Co., 713 N. Main St., Los Angeles.

inch planks about 15 feet long were laid from the sidewalk to the truck bed, making a four-foot rise. That Bullock Creeping Grip tractor ran up the planks with its own power and turned around. It weighs 6600 pounds—still it didn't break the plank. They say it can run into a box car, turn around and come out, or it can turn around on the scales that weigh it. The engine develops 16 horsepower, and they claim 10 horsepower at the drawbar."

CITRUS SPRAYING REQUIRES POWER.

[Written for Pacific Rural Press.]

How to spray citrus trees thoroughly was shown to all interested by the Shure-kil spray people under direction of President L. A. Pratt during the Orange Show at San Bernardino.

The automobile carried several parties daily to an orchard near Rialto, where the demonstration was at work. The latter had fixed up a 2 h.p. Fairbanks-Morse engine and pump on the back of an automobile, so it could be moved about very readily. It maintained 225 pounds pressure. The trees averaged about 12 feet in diameter and the same height.

Two Imperial 45 degree nozzles were fixed side by side about four inches apart at the end of a cane spray rod some dozen feet long. This made part of the spray come out at about right angles to the rod and part straight endwise from it, filling all the intermediate space with spray. This was its own protection for the operator. The nozzles were smooth knobs without any projections to catch in the brush.

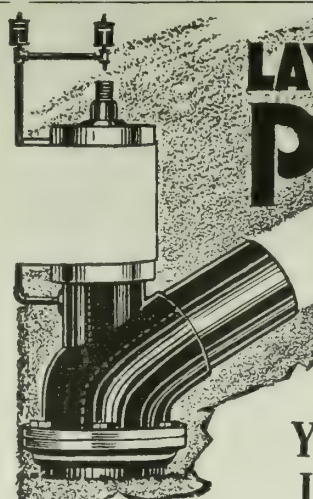
Scale are more often found on the under sides of leaves, so that the principal attention is directed to them. The first motion is to shove the spray rod through a convenient opening and to drench the trunk and main limbs, always working from the ground upward; but turning the nozzles downward to soak the top sides of the limbs. Then the nozzles were worked slowly outward through the leaves and small branches, almost always shooting the spray upward. The tops of the leaves would catch settling spray and drippings, so did not need as much attention as the under sides. The process was repeated at every convenient opening, probably six or eight entries in the circumference of some trees. Then the next stage above was treated similarly, and still another stage in some trees. Then the nozzle rod would be held nearly vertical to get spray on every spot in the top of the tree.

The good effects of such thorough spraying were seen on a number of trees that had been sprayed some weeks before. Scarcely a live scale could be found, though there were plenty of them on the unsprayed trees.

PICTURE FRAMES.

The stationers' and other shops where picture framing is done are showing some very attractive hand-modeled frames for photographs. These are made with a pedestal so that the picture can be placed on a mantel or dressing table and are in dull gold and bronze colorings.

LAYNE & BOWLER PUMPS



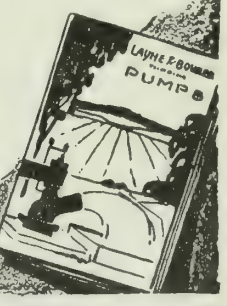
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Install the Layne & Bowler Pump and be absolutely assured of the very cheapest water at all times. Let the world's largest water developers solve your pumping problems. Our free advisory service is maintained for the benefit of the thousands of prospective irrigators.

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Reg. U. S. Pat Off. and Foreign Countries

The angular Sieve-Grips act as clod-breakers and soil agitators. They crush the large, hard lumps and prepare the way for the cultivator.

One round with a Sieve-Grip Tractor and harrow gives a perfect mulch where two are usually needed.

Sieve-Grip Tractors are adapted to orchard and vineyard work because of their low, compact structure and dust-proof features:

"Six-Twelve" $725 f. o. b. Stockton "Ten-Twentyfive" $1250

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Stockton, California.

Second Hand PIPE Screw Casing

ALEXANDER PIPE COMPANY
OFFICE—250 North Point Street, San Francisco, Cal.—WORKS

The Control of Crown Gall, or Root Knot.

(Continued from page 441.)

concentrated lime sulfur and the two stronger solutions of Bordeaux (Bordeaux paste and 12-15-50) killed or injured many of the small trees, so that a number failed to start. The prevention of gall development on the treated trees was so slight as to be of no practical importance, although there was a slight reduction in amount of gall as compared with the untreated trees. It was not sufficient, however, to be of any economic importance. The weaker strength, 4-6-50 Bordeaux mixture, showed no decrease of gall infection as compared with untreated check trees. Concentrated Ortho lime sulfur killed all the treated trees. From the experiments thus far conducted, the treatment of peach roots with germicides is not to be encouraged.

Use Clean Ground. — The importance of growing nursery stock in soil free from infection of the crown gall organism cannot be too strongly emphasized. Most nurserymen make an effort to grow their stock in clean soil, but this is not an easy matter, for there is no way of absolutely knowing such soil, aside from the actual test by growing a crop of nursery stock. If the infected trees could with certainty all be eliminated from the stock to be planted, the problem would not be as important. The small galls are difficult to detect and many of them may be in an incipient condition where detection is impossible. In certain parts of the State, special efforts are being made by planters to secure clean stock.

The nurseries themselves are often visited by interested parties about tree-digging time, and only the ones showing a reasonable freedom from infection are considered when the trees are purchased.

Almost as important as clean stock, is soil free from infection. This will be less important as the more resistant stock comes into general use. Soil is often naturally infected, either because recently cleared from the native trees and shrubs, or because diseased orchards or vineyards have just been removed. Nurseries have come to our attention that were badly infected with crown gall where they were planted in virgin soil recently cleared from the natural trees and shrubs.

It would be safer to wait two or three years before replanting stone fruit trees in soil recently cleared from diseased trees. In the meantime, some annual crop could be grown. Citrus and olive are resistant and could be planted at once, as could also resistant stock of Prunus. For the stone fruits, and possibly also for walnuts, a longer time (two or three years) should be given between plantings, especially where the trees taken out were known to be infected with crown gall.

Surgery. — Tree surgery is occasionally employed in removing the galls from large orchard trees. It is a mistake to wait and allow trees to grow three or four years in the orchard before they are examined for evidence of this disease. Trees should be dug around and examined the winter or spring following planting. Some may be found very seriously affected. These should be marked, either for treatment or to be dug up and replaced if seriously affected. Do not try to treat small trees if badly galled. It is a waste of time, and nursery stock is too cheap to chance keeping a diseased tree.

The method of tree surgery can only be used on the part of the tree near the surface of the soil; that is, on the crown and upper roots. This fortunately is the part of the tree most seriously affected. The work should be carefully done to be efficient. All the diseased tissue should be removed with a chisel. A sharp knife is also useful, as well as a hatchet.

After treatment, a good germicide must be used. A Bordeaux



Artificial gall in hard shell almond. Puncture inoculated July, 1911, to January 23, 1912, with pure cultures of gall organism.

paste solution, similar to that used for citrus gummosis, is possibly as good as any preparation. This as recommended by Professor H. S. Fawcett, is made as follows: 12 pounds of bluestone (copper sulphate) dissolved in 8 gallons of water in a wooden, earthen or glass vessel; and 24 pounds of quick-lime slaked in 8 gallons of water. When the lime is cool, stir together about equal parts by volume of each for making enough mixture to last for one day only. The bluestone is easiest dissolved by suspending it in a sack at the top of the water over night. If the bluestone is pulverized and suspended in warm water it dissolves rapidly. Good lime that is not air-slaked should be used, and after slaking it with the water it should be cooled before used in making paste. If covered to avoid evaporation each ingredient will keep indefinitely, but after mixing, the paste slowly deteriorates. Where it is being used over a number of days or weeks, just enough of the wet slaked lime and the bluestone solution should be mixed to make paste enough to last for one day, leaving the remainder unmixed in separate vessels. It may be applied with large brushes, as is whitewash.

Conclusions. — Resistant stock is the most satisfactory way in which this disease will be controlled. In

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VACUUM CUP TIRES 6,000 MILES

You pay for the Quality – the Safety costs you nothing

You Farmers Who Want MOST MILES

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Until your car is shod with these longest-lasting casings, you will not know the full, true meaning of tire-buying economy.

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PIPE For irrigation water, supply-power. Cheaper than any other pipe of equal size, capacity and endurance.

TANKS For all uses, in all sizes from 500 gallons to 500,000 gallons, and with towers if wanted.

SILOS For dairymen, stockmen, farmers. In sizes from 25 tons to 300 tons. The best silo made today.

All Remco products are built to your order. Only clear, air-dried redwood is used. Write us your needs and we will send you full information.

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1604 Hobart Building San Francisco, Calif.

a short time, several of these may be available. Treatment of roots with disinfectants can not be recommended. Clean stock in clean soil is the only plan that can now be suggested. Tree surgery will never be generally used, as it requires too much time and work and may need to be done over again the next season, as the gall is very likely to reappear on the margin of the treated area. The place where the dirt has been dug away preceding treatment, does not need to be refilled.

Foundation Jerseys at Auction.

[Written for Pacific Rural Press.]

We are advised by R. A. Watson, manager of the Rancho Dos Rios herd of registered Jerseys, that with the exception of four or five high-class herd sires, their offering at public auction May 6 will be foundation females.

As these will comprise practically their entire milking herd of over 100 head, their sale will offer both prospective breeders and dairymen an unequaled opportunity of securing foundation herds at public auction, for it has been a common practice of consignors to offer a large percentage of bulls.

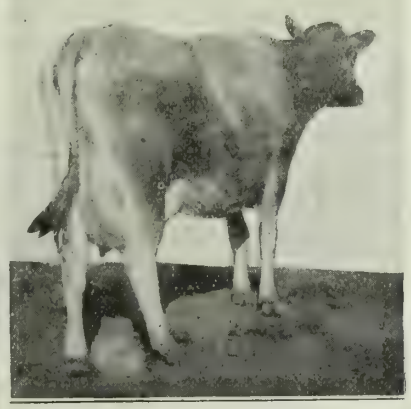


Dos Rios Pogis, 89008 A. J. C. C. To be sold at auction, May 6.

As indicating the relatively high quality of the animals to be sold Mr. Watson points out that because of the size of their herd, which is the largest in the State, they have been able to select their milking herd with more than usual care, and as a result the animals in this sale are equally as good if not better than most of the dispersal sales have to offer, and much better than the ordinary consignment sale where the breeder is compelled to reserve most of his choicest stock for future breeding operations. The only reason they are being sold is to make room for an unusual number of heifers about to freshen and a scarcity of feed on the ranch for so many cattle.

For the dairyman wishing high-class grades the sale is an exceptional opportunity, as practically all of the cows offered are of pure breeding but cannot be registered in the American Jersey Cattle Club. This is due to the fact that their dams and grandams were registered in the Pacific Coast association before that association went out of business, and as the American club did not recognize the coast club, the animals automatically became grades in name although they are as purely bred as the A. J. C. C. animals in the herd.

The breeding of these animals is practically the same on the sires' side as the A. J. C. C. cows, registered A. J. C. C. bulls, having been used ever since the herd was established and great care has been exercised in choosing herd sires from the greatest producing strains of the breed.



One of the registered cows to be offered in Rancho Dos Rios sale.

Altogether this sale offers the buyer many advantages superior to any dairy cattle sale of late years on the Coast and buyers from all parts of the Coast will doubtless make it a point to be in attendance.

MUST HORSE BE LICENSED?

To the Editor: Is it necessary for anyone who has a horse colt and breeds his own mares and a few others in the neighborhood, but not at a public stand, to obtain a license? —N. B. W., Thalheim.

[Answered by Dr. Chas. Keane, State Veterinarian.]

[In my opinion, the stallion registration law clearly contemplates that the only instance when a stallion or jack is not required to have a license is when such animal is used entirely in the service of the owner.

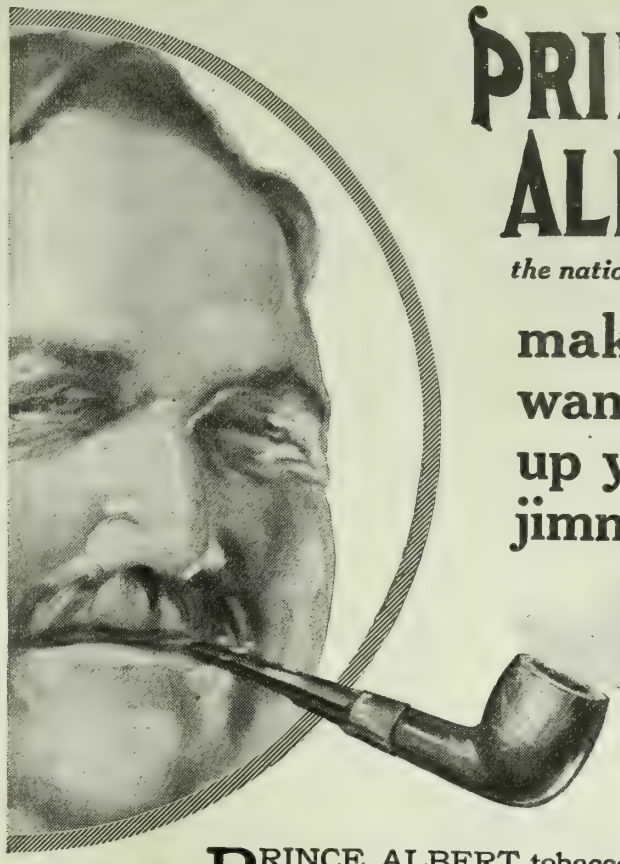
The fact that your subscriber breeds his stallion to mares of neighbors undoubtedly places the animal in the position of "standing publicly."]

WILL SUDAN POISON CATTLE?

To the Editor: Can you pasture cattle and sheep on Sudan grass without danger of poisoning them? K. C., Lodi.

[Inasmuch as Sudan grass has most of the characteristics of Johnson grass there might be danger from prussic acid poisoning if the growth has become rank. This danger exists with Johnson grass, but we do not know for certain about the condition holding true with Sudan grass. Perhaps some subscriber will tell us his experience in this respect.—Eds.]

W. W. Phillips of Fresno will soon have a purebred herd of Holsteins.



PRINCE ALBERT

the national joy smoke

makes you want to fire up your old jimmy pipe!

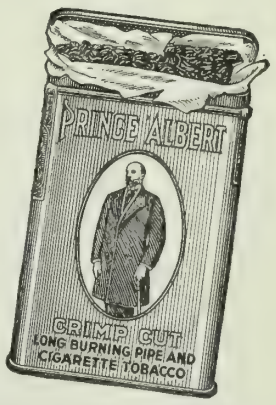
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PRINCE ALBERT tobacco throws open the gates to *every* man fond of a pipe or a makin's cigarette—*it's so friendly!* Just makes smoke joy possible for all degrees of tender tongues and tastes! The patented process cuts out bite and parch! And you can't get better proof than the fact that Prince Albert is today smoked not only throughout the United States, *but all over the world!*

First thing you do next, locate that old jimmy pipe or the makin's papers; invest 5c or 10c for a supply of P. A. And fall to like you are on the right track. For Prince Albert is better than the kindest word we ever have said about it. And you'll find that's a fact!

You can buy Prince Albert everywhere in the toppy red bag, 5c; or the tidy red tin, 10c; in pound or half-pound tin humidors or in the handsome crystal-glass pound humidor with sponge-moistener top that keeps P. A. fit-as-a-thoroughbred!

R. J. REYNOLDS TOBACCO CO., Winston-Salem, N. C.



On the reverse side of this tidy red tin you will read: "Process Patented July 30th, 1907," which has made *three* men smoke pipes where *one* smoked before!

Anthony Fence

Under stress of action each wire within a considerable radius is brought into play, affording, to an extraordinary degree, the resistance of a flexible wall of steel—due to the perfectly balanced woven fabric, in which each wire is drawn under equal tension with machinery of special design. Thoroughly galvanized.

AWARDED PANAMA PACIFIC GRAND PRIZE INTERNATIONAL EXPOSITION

American Steel Fence Posts

Cheaper than wood and more durable. Last a lifetime. *Sent Free*—write for booklet on how to set posts and erect fence. Every farmer should have it.

DEALERS EVERYWHERE

AMERICAN STEEL & WIRE COMPANY

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Baby Beeves Successful.

[Written for Pacific Rural Press.]

One hundred and thirty baby beeves weighing 800 pounds each at 12 to 14 months have been sold by the Tehachapi Land and Cattle Co. to be delivered in Los Angeles Apr. 10, according to Roland Hill. They were put into the feed lot last October as weanlings.

Alfalfa hay has been kept before them all the time. At the start, each calf received, besides hay, 10 pounds red kafir silage and ½ pound cottonseed meal. This was gradually increased until on full feed they cleaned up promptly 22 to 25 pounds silage and 2½ pounds cottonseed meal per day, besides about 20 pounds alfalfa hay.

During the last 75 days of feeding, they received corn, starting with a pound and increasing to five pounds 20 days later.

The red kafir was cut when the kernels were hard but the stalks green. It would have made poor silage if cut before the kernels hardened, according to Mr. Hill. Enough water was added so that it would drip out when a handful was squeezed, but not enough so there would be standing water in the bottom of the silo. That would make it sour.

Shelter Provided.—The feeding stock has the run of a corral 175x250 feet in which the alfalfa racks are filled from cars run out on tracks between them. Open-fronted sheds kept dry, provide comfortable places to lie down in. Old railroad ties make a cheap but effective floor in front of the mangers.

"The big thing is to get them onto full feed gradually and be careful never to get them off feed, and provide dry places for them to lie down," says Mr. Hill.

"We have about 100 purebred Hereford bulls, using them to improve our range cattle. That helps account for the good babies. We prefer Herefords for range cattle if we can keep up the bone and size, because we think they are the best rangers and the earliest maturing cattle.

"We will fatten several hundred babies next year. They put on the gain more economically than the two and three year olds, and slightly better than the yearlings."

ARE BLACK-WOOLED SHEEP DESIRABLE?

To the Editor: A number of people in this community who have splendid flocks of purebred Shropshire sheep are getting from one to three or four coal black lambs. This is not at all unusual with Merinos, but is an uncommon occurrence with Shropshires. These people have all been careful to breed to the best registered bucks. I would like to know if the original Shropshires were black or whether unfortunately for the breeder, some foreign blood has been introduced into these flocks by some of the imported rams. I would like to know also if you can advise me whether you think it would be profitable for me to buy up these purebred blacks and start a black flock. Of course if there is no advantage in the black fleece there would probably be nothing gained.—Subscriber, Solano county.

[Mr. T. Ballard, shepherd of the San Ramon Rancho flock of Shropshires, states that when the Shropshire was made a breed, one of the crosses was a horned black sheep, and that no matter how careful one is, purebred Shrops throw a black lamb once in a while.

Prof. Miller of the University Farm at Davis advises us that even were black fleeces desirable, it would entail a great deal of expense to try to maintain a flock of black sheep as they would not breed true to color.

A large wool dealer in San Francisco states that at the present time black wool is worth some more than white wool on account of the war, but that usually it is quoted about 10 per cent less than other wool. The probabilities are that it would not be a paying venture.—Eds.]

INTER-STATE SHIPPING OF FRESH MEAT.

To the Editor: Kindly advise me whether I can send dressed hogs or veal from here to San Francisco without the interstate stamp on it. I would have to ship by way of Nevada to make rail connections.—H. A., Standish.

[The U. S. Bureau of Animal Industry allows interstate shipments of fresh meats without inspection when the shipper makes out a printed certificate, a copy of which is sent to the Chief of the Bureau of Animal Industry, Washington, D. C., by the railroad or carrier. In your case, however, it would not be possible to ship to San Francisco, because the local board of health would not allow the meat to enter the city.—Eds.]

FETERITA POOR SILAGE.

[Written for Pacific Rural Press.]

Feterita made poorer silage than kafir or Indian corn on the Ontario Dairy ranch according to Chas. O. Johnson, who has charge. Indian corn was put four feet deep in the bottom of the silo, then three feet of feterita, then 10 feet of kafir corn, then Indian corn to the top of a 30-foot silo.

"The kafir and Indian corn were quite ripe; the stalks were drying and ears hard on Indian corn, but the silage was fine. The Kafir should have been cut 10 days earlier so the grains would have been a little softer. When too ripe they pass through the cattle whole, to some extent. The feterita was in just the right condition, but cattle did not like it and lost in their flow of milk," says Mr. Johnson. "The cattle liked corn silage best, though they did as well on the kafir, which was rich and good. The feterita stalks were dry, light, fibrous; there was nothing to it, and the kernels were poorer. We had to feed nearly double the quantity.

"To our 26 cows and a dozen calves we fed four bales of hay per day besides 3 scoops each of corn silage, or two scoops of kafir, or about five of feterita. For six weeks we fed only silage and barley straw on account of the high price of hay. Silage was the only thing that would have carried us through the winter. We commenced to feed it on Thanksgiving, and it lasted till the middle of March."

REG. JERSEYS AT AUCTION

—95 PER CENT FEMALES—

at the

Rancho Dos Rios, Modesto, Cal., May 6, '16

125 HEAD

With the exception of a very few outstanding sires, **THIS WILL BE A STRICTLY FOUNDATION SALE.**

To make room for a large number of registered heifers that will soon freshen, this offering comprises practically **ALL OF OUR MILKING HERD OF REGISTERED AND UNREGISTERED JERSEYS.**

THESE WERE SELECTED FOR OUR OWN DAIRY AND REPRESENT YEARS OF CULLING FOR PRODUCTION.

For 48 years we have bred Jerseys for utility and now we offer you, **AT YOUR OWN PRICE THE RESULT OF THIS WORK.**

40 HEAD OF REGISTERED ANIMALS will be included in the sale, among them being **OUR GREAT PROVEN HERD SIRE DOS RIOS POGIS**, a grandson of **HOOD FARM TORONO AND A NUMBER OF HIS DAUGHTERS** as well as **DAUGHTERS AND GRANDDAUGHTERS OF LAURA LEE'S ISIDRO, DORINDA DARLING'S VOLCO, RIOTER CUBA EXILE, BROWN BESSIE'S GOLDEN GATE AND A SON OF RECORDER.**

EVERY ANIMAL TUBERCULIN TESTED.

Address

RANCHO DOS RIOS, MODESTO, CAL.

Auctioneer: COL. BEN A. RHOADES of Los Angeles, Assisted by M. P. Keppford of Modesto.

AUCTION SALE

At 1:30 p. m., Tuesday, April 11

On premises, corner King and Mabury Road, San Jose.

On account of ill health, I will sell my entire herd of

REGISTERED BERKSHIRE HOGS AND WEANLINGS.

Sows and Boars out of Superbus, Rivals, Matchless Baron Longfellow, Belle Champion 11th, Artful Masterpiece and other strains.

Date: April 11th. Time: 1:30 P. M. Place: Corner King and Mabury Road, San Jose.

Auctioneer: DE SELMS. **G. A. CASEY, Proprietor.**

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Thornton S. Glide, Prop.

Davis, Cal.

SHORTHORN CATTLE

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FOR SALE, SINGLE OR CARLOAD LOTS



KING LANCASTER,

Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.

THEY HAVE GRAND CHAMPIONS BEHIND THEM.



Grand Champion Sow, P. P. I. E.

Medium Type POLAND-CHINAS

Choice breeding stock, both sexes, from Panama-Pacific International Exposition prize-winning strain. 12 firsts. Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows. $2145 cash awards. Write to

M. BASSETT,

Box P,

Hanford, Cal.

Clarifying Dairy Legislation Situation.

To the Editor: I notice in your issue of Mch. 25, in answer to A Subscriber, Mr. Andreason says that "Milk that is sold at wholesale to creameries, or distributing plants, is not affected by this law," etc.

1st. I believe he is mistaken in making this assertion so broad in as far as distributing plants are concerned. If the delivery is not affected directly by the law it certainly will be indirectly. How can a dealer get certified milk, guaranteed milk, grade A milk or even grade B milk, out of milk that has not been produced under rules, regulations and temperatures established by an inspection department, approved by the State Dairy Bureau, which in turn have been approved by the pure food and drug laboratory?

2nd. Does the exemption in section one, which reads, "except in bulk to the wholesale trade," apply to the whole act, or does it only apply to tuberculin tests and pasteurization? If so, all milk and cream that go to the creamery, as well as to the distributing plant, will also have to come under the rules and regulations of the inspection department.

3rd. As the title of this act says it is "An act to prevent the sale of impure and unwholesome milk," and as section three of the act declares that all milk, except certified milk, guaranteed milk, grade A milk and grade B milk is impure and unwholesome—is the exemption of any force, or is it unconstitutional under Sec. 24 of the Constitution?

4th. Does the exemption only apply before an inspection department has been appointed, or rather "put in, to sell any milk otherwise than as hereinafter provided in this act?"

Will you submit these questions to Mr. Andreason? The last three are interpreted differently and it would be a great favor to the dairymen of this district if he would get an opinion from the Attorney-General upon them.—Geo. W. Ashley, Stockton.

[Comments by F. W. Andreason, Sect'y State Dairy Bureau.]

1st. While producers of milk can sell it in bulk to the wholesale trade without having their cows tested and without pasteurizing it, it is true, as Mr. Ashley writes, that the new law (Chapter 742, Statutes 1915) will affect them in that they will have to sell to the distributors according to grade. Certified milk must be from tuberculin tested cows and must bear the certification of a milk commission appointed by a county medical society, organized under, and chartered by, the medical society of the State of California.

Guaranteed milk must be from tuberculin,tested cows, from a dairy that scores more than 70 per cent on the score card adopted by the Bureau of Animal Industry, U. S. Department of Agriculture, and a permit or approval in writing to sell guaranteed milk must be obtained from the inspecting department.

Grade A milk, if sold at wholesale to a distributing plant where the pasteurizing is done, must come from dairies that score not less than 60 per cent on the score card mentioned above and must contain less than two hundred thousand bacteria per cubic centimeter before pasteurization. The maximum temperature at which the milk must be delivered at the pasteurizing plant must be determined by the inspecting department.

Dairies that score less than 60 per cent on the said score card, or whose milk contains more than two hundred thousand bacteria per cubic centimeter, must sell same as Grade B milk.

Milk containing one million, or more, bacteria per cubic centimeter must be marked "Not suitable for human consumption" in letters not less than one-quarter inch in length and one-twelfth inch stroke.

Milk and cream sold to creameries and cheese factories must come under the same rule as market milk sold to milk distributing plants.

2nd. I have asked the Attorney General for his opinion as to whether all milk and cream sold in the State must be graded, or whether it is only milk and cream sold in a city, county, or city and county in which a milk inspection service, approved by the State Dairy Bureau, has been established, that must be graded. The clause "except in bulk to the wholesale trade" was undoubtedly intended to apply to all milk and cream which is to be shipped into a city to be pasteurized at the distributing plant, or at the creamery

Cities can assume control of all milk and cream that comes within its limits, but much of the cream is produced a hundred miles or more from such city and the inspection of the dairy producing this cream is usually done by the State Dairy Bureau. For the purpose of this act milk shall be construed to include cream.

3rd. The constitutionality of the act, or part of the act, can only be determined by the courts.

4th. There is no doubt but that it was intended that producers of milk and cream could sell their product to creameries and milk distributing plants, without pasteurizing it and without causing their cows to be tuberculin tested, provided that the dairy from which it came was in a sanitary condition Section 7, of the said chapter, has this provision in it:

"Milk for pasteurization must be kept at a temperature established by the inspecting department up to the time of delivery to the pasteurization plant and rapidly cooled after pasteurization to a temperature of fifty degrees Fahrenheit or below and so maintained to the time of delivery of the same. Pasteurization shall be by the holding method at a temperature not less than one hundred forty degrees Fahrenheit; provided, that milk for drinking purposes shall not be heated to above one hundred forty-five degrees Fahrenheit."

Further on it has the following provision:

"If milk is re-pasteurized it must not be sold except as not suitable for human consumption."

I think this shows that Grade A and Grade B milk may be delivered in a raw state at the pasteurizing plant. Definitions of these grades of milk in sections 6 and 7 also show that where the milk is pasteurized it need not be from tuberculin tested cows.

The Brainard ranch near Corcoran received last week a carload of registered dairy stock from Los Angeles; and having disposed of their former herd, will keep only registered stock.

Good-by, Guess Work

THE New Sharples "Suction-Feed" is the only cream separator which eliminates guess work from cream production. All other separators have to be turned at exactly the speed indicated on the crank or they will lose from 7 to 13 pounds of butterfat per cow per year. The Purdue Experiment Station and other scientific investigators have proven these figures (see Bulletin No. 116, Vol. 13.)

This "guess" speed is used by 19 operators out of 20, because it is impossible to turn the crank at exactly the right speed.—It is much easier to turn it slower—and, whenever you do, you lose cream. Even a speed indicator will help but very little, as you won't and can't watch it every minute.

So we say to you dairymen: Quit guessing about your separator speed and your separator profits. Use

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Separator and know that you get *all the cream all the time.*

Whether you turn faster or slower, the bowl of the Suction-Feed *drinks in just the right quantity of milk.* The feature is entirely automatic; if you are tired, you turn slower (which is easier) and, if in a hurry, you turn faster and finish so much sooner. No matter how you turn, the New Sharples always skims clean.



The Sharples cream is always of *even thickness,* whether you turn fast or slow. The Supply can is but knee high so you can fill it without any back breaking effort. The three-piece Sharples bowl is lighter and simpler than any other—*no discs to wash.*

All these money-saving and trouble-preventing features are described in a handsome catalogue; ***"Velvet" for Dairymen.*** Send for a copy, now, while you think of it. Address Dept. **31**.

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With the Live Stock Men.

DAIRYING.

The Chowchilla Colonization Co. recently sent R. A. March to select five cows from the T. J. Gilkerson herd at Hanford.

The contractor who was recently arrested in Imperial county for serving oleomargarine to boarders without proper notices being posted was fined $50.

Over 400 Hinman milking machines have recently been sent to England, supposedly to take the place of hand milkers who can be used to advantage in the army.

Mr. N. Alberteni of Holtville has just started into the cheese industry. His first shipment to the Los Angeles exchange amounted to 578 lbs. of cream cheese. He expects to ship about the same amount every week.

Two 150-ton Ideal silos are being constructed on the ranch of Mrs. W. N. Lester near Denair, Stanislaus county. Indian corn will be grown for silage.

Dairying in the Chowchilla section of Merced county is rapidly forging ahead, a report from there saying that M. J. Schoonderwoerd will soon make a trip to the southern part of the State where he hopes to purchase 600 head of dairy cows.

The Henderson Co. of Sacramento report that Precia Crane Hengerveld, a four-year-old Holstein, made 18.6 pounds of butter in seven days, after dropping two calves in 10 months. Constance Mechthilda Aaggie, a two-year-old, made 50 pounds in 30 days.

At a meeting recently held at Woodland by dairymen of Yolo, Solano and Colusa counties a joint cow-testing association for the three counties was organized. Over 950 cows have been signed up, divided as follows: 530 in Yolo county, 270 in Solano and 154 in Colusa.

H. P. Hatfield, an experienced dairy farmer, will establish a dairy calf-raising farm in California in the near future. His object is to take the best heifer calves from the dairymen, mark and record them and when matured return them to dairymen at a contract price to be mutually agreed upon.

H. H. Sisson, manager of the Sunnybrook Ranch at Willits, reports the sale of a young Holstein bull sired by De Kol Fobes Homestead 6th and out of Maggie of Highland Netherland Paul, to Frank Willlams of Willits; also a young bull sired by Ruby Gem Canary Lad and out of Miss Piebe De Kol Colantha, to Mrs. Chris Hansen of Willits.

The N. H. Locke Co. report the sale of Biddy's King of L., a grandson of King's Valet and Empress Lass to T. B. Roy of San Geronimo. He is a son of Valet's Golden Biddy of L., 1912 grand champion at Sacramento. They have also sold Rhymes Fox of L. to W. H. McKittrick of Bakersfield and Squirrels Fox of L to C. L. Flanders of Lockeford.

A. M. Bibens of Modesto has sold to Mrs. Ida McClure a yearling heifer and a very choice three-year-old cow from his herd of registered Holsteins. He recently purchased from H. L. Benedict of East Syracuse, New York, the young bull Aggie Cornucopia Pauline Count 40th, whose grand dam held the world's record for butterfat for nine years.

According to J. R. Downs, of the Southern Pacific railroad, the new plant of the Imperial Valley Creamery at El Centro will do more toward putting the dairy industry of Imperial county on a sound basis than anything that has ever happened, as equipment is being installed which will permit of eastern shipments of butter when the quotations in this State are low.

The average score of contestants in the University Butter Scoring Contest, held in San Francisco, March 28, was 92.27, which was higher than any single entry average during the entire year of 1915. This is encouraging inasmuch as it indicates a disposition on the part of dairymen and creamerymen to produce a quality of butter that will sell on any market.

There were 10 cows in the Gridley Cow Testing Ass'n that produced more than 50 pounds of butterfat during the month of March, according to S. F. Bonner, secretary of the association. The highest producer for the month was a Holstein owned by J. H. Guill of Chico with 63.5 pounds fat. Other high cows were owned by J. Troncatly of Tudor, S. O. Mealy of Gridley and F. Vincent of Chico.

From six acres of land near Turlock Mr. F. Bennet cut 18 tons of oat hay last ear. Afterward the land was planted to Egyptian corn, which was headed and later the stalks were put into the silo. When he started to feed the silage he found the cows would not eat it till after he had poured diluted molasses water over it, in proportions of five gallons of water to one of molasses. Mr. Bennet figures that it did not cost much more to blow the stalks into the silo than it would have been to haul the stalks off, and as it was, they helped to supply a large amount of fairly good roughage for the cows' ration.

SWINE.

The Browning Stock Farm of Woodland has purchased a choice six-month-old Poland China boar from Hale Marsh of Modesto.

The Davis ranch near Holtville, of which Mr. Scott is manager, vaccinated 450 Poland China hogs last winter with $210 worth of serum, according to Dr. R. W. Ritter.

A meeting of the directors of the California Swine Breeders' Ass'n was held April 7, at which time plans for the furthering of the swine-breeding industry of the State were discussed.

Purebred Berkshires are being used by the Gardena Agricultural High School. Their boar, Gardena Master, is of Masterpiece blood and was bought from Mr. Hall of Perris, who got him from Kansas.

A registered Duroc Jersey sow belonging to Frank Sorter of Hughson had a litter of 15 pigs and is raising them all. For the first couple of weeks they were fed by hand, as the sow had but 12 teats.

According to C. B. Cunningham of Mills, Sacramento county, the demand for registered Chester Whites has been good all winter and spring and as a result he has been pretty well cleaned out of gilts and service boars.

Stephen S. Day of Sacramento has just sold 65 head of grain-fed Berkshires, culls from his breeding herd, for nine cents a pound. It is prices like this that makes the farmer take a more optimistic view of hog raising than he did a few months ago.

Chas. R. Hanna of Riverside has three sows bred to Superba, the grand champion Panama-Pacific Poland China boar. He recently sold a boar pig to Uncle Sam for the Indian School at Valentine, Ariz. Its mother is from a family of last year's Iowa State Fair winners.

W. H. Rough of Arlington received this spring a sow which was the highest priced Poland China pig out of the highest priced litter sold in 1913, Big Anna Orange. She sold at $245 as a gilt. Mr. Rough has sold a sow and a boar pig from her to be delivered when weaned, to the man he got her from, for $175.

W. A. Young, Poland China breeder of Lodi, reports the sale of two three-months-old registered pigs to Wm. P. Matthias of Trafford, Pennsylvania. These pigs were sired by I. B. A. Wonder, the sale having been made at the P. P. I. E. on account of the showing made by Mr. Young's herd sire. These are probably the first California Polands that have been shipped so far east. Mr. Young also reports the sale of a bred sow to Robt. Jickling of Elmira, a sow pig to A. W. Ellyson of Swanton, a bred sow to the Truxton Indian School, Arizona, a service boar to H. C. Clark of Standish, two suckling pigs to Geo. C. Gosling of Napa, and a service boar to C. A. Blakelsey of Sanger.

BEEF CATTLE.

Stewart and Russell of Ventura county are pasturing 600 head of Hereford cattle on the 200-acre Baker ranch southeast of Holtville, Imperial county.

H. L. Murphy left for the east early this week, where he will buy another carload of Shorthorn bulls and show cows for California customers.

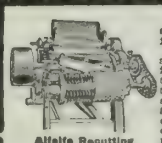
The Murdock Land Co. of Chico have just shipped four head of registered Devon bulls from the east. This company has a small herd of registered Devon cows which they propose to enlarge.

C. D. Hillman of Pasadena has purchased the Fred Emmons ranch of 10,185 acres in Monterey county. This with 45,000 acres near Paso Robles which he recently purchased will be stocked with several thousand head of cattle.

R. M. Dunlap has just returned from the East with a carload of Shorthorn and Hereford bulls for the W. N. Russ Co. of Ferndale and five registered Hereford females for A. E. Noyse of Sutter City, Sutter county. One of the Herefords was second prize heifer at the Minnesota State Fair at Hamlin last year. They will be used for founding a purebred Hereford herd by Mr. Noyse.

Thornton Glide of Davis states that he does not expect to show Shorthorns at the State Fair at Sacramento this year. He says that he has decided on this action because of the numerous losses, from a breeding standpoint, that result from high fitting. Mr. Glide still has a fine bunch of outstanding service bulls

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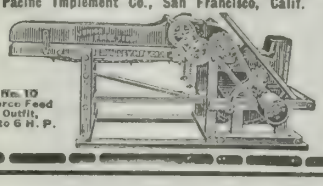


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BILLIKEN HERD OF IMPROVED CHESTER WHITES—The Money Makers. Everything registered and cholera immune. Nothing to offer for immediate delivery. Sows now farrowing. The pigs from these sows will be ready to ship during late May and June. Am booking orders now for these. The offering represents the very best and most popular blood lines the breed produces. Sires and dams by Champions and Grand Champions. Let me have your orders early. C. B. Cunningham, Mills, Sacramento County, California.

REGISTERED DUROC-JERSEYS—ALL AGES—We are booking orders for Spring pigs out of sows sired by full brothers of "I Am Perfection Wonder," sire of Grand Champion sow at Panama-Pacific, and from others equally well bred. Also offering about 30 exceptionally choice fall boars and gilts. This stock is in first-class condition, breeding guaranteed and of the finest blood in existence. Prices reasonable. For particulars, write, Haden Smith, Route 1, Box 97A, Woodland, Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank B'dg., Berkeley, Cal.

REGISTERED BERKSHIRES — World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

BIG TYPE POLAND CHINAS—My hogs are sired by California Wonder and Big Chief, imported direct from Iowa. There is no better blood. All hogs eligible to registration. C. A. Cooley, Durham, Cal.

BLATCHFORD'S PIG MEAL weans easily and safely; no trouble; no milk. Write for free folder, "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

REGISTERED PUREBRED BERKSHIRE PIGS — Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

LARGE, QUICK MATURING registered Berkshires. Both sexes, $10 each for weanlings. Older ones at farmer's prices. J. M. Bomberger, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

RANCHO RUBIUS—Durocs all sold except one service boar and a few October pigs. Spring litters will be "best ever." Elmer Lamb, Ceres, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen S. Day, Box 1140, Sacramento.

ROSELAWN STOCK FARM—Registered Poland Chinas and Shorthorn cattle. Young stock, both sexes, for sale. T. R. Gibson Estate, Woodland, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Price and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

PLAINFIELD STOCK FARM—Registered Berkshires and Durocs. Young stock for sale, both sexes. H. M. Bullard, Woodland, Cal.

REGISTERED BERKSHIRES—For sale bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

PIGS OUT OF SUPERBA—Panama-Pacific Grand Champion Poland China. Booking orders now. Chas. R. Hanna, Riverside, Cal.

BERKSHIRES OF QUALITY bred right, fed right, are right. Both sexes for sale. Prices very reasonable. U. Hartman, Ripon, Cal.

DUROC OF QUALITY—Predominating bloods of Defender, Buddy Ky, Crimson Wonder. C. T. Thompson, Bishop, Cal.

REGISTERED DUROCS of guaranteed breeding. Bred gilts, service boars and fall pigs. H. E. Boudier & Son, Napa.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINA SWINE — Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

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REGISTERED DUROC JERSEYS—All ages, either sex. Some very choice gilts and boars. R. R. Houston, Byron.

REGISTERED BERKSHIRES — Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

REGISTERED DUROCS—All ages. One yearling boar. Satisfaction guaranteed. Frederick M. Johnson, Napa.

REGISTERED BERKSHIRES — Prize-winning stock. Sunnyside Stock Farm, Perkins, Cal.

SWINE.

YOUNG'S POLAND CHINAS—Large type Boar, I. B. A. Wonder won first and reserve champion P. P. I. E., weighing 730 lbs. under 2 years in breeding condition. Weanling pigs, either sex—none better—$15 up. Satisfaction or money refunded. W. A. Young, Lodi, Cal.

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BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

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POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

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HEREFORD BULLS—H. H. Gable, Diamond G Ranch, Esparto, Ca.

GEORGE WATTERSON—Breeder registered Herefords, Bishop, Cal.

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DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

FOR SALE—About 80 head grade Holstein, Durham & Jersey heifers from six months to three years old, all first-class. Prices very reasonable. J. S. Smith, Box 515, San Jose, Cal.

FOR SALE—20 head purebred Holstein cows producing now 100 gals. 4 per cent milk daily. Also herd bull Prince Lorenzo De Kol, Reg. No. 136003 H. F. H. B. G. W. Stone, Byron.

WANTED—About 25 good dairy cows to be paid for in 12 equal monthly installments. Payment secured by mortgage on stock. Party reliable. Box 205, Pacific Rural Press.

on hand that range men will do well to look over.

R. M. Dunlap is on his way from the East with a carload of Hereford bulls which he has just purchased in the East to fill California orders.

The Northern California Stockmen's Association held a meeting at Redding recently at which time range regulations were discussed with the supervisors of Trinity, Shasta, Klamath and Lassen forests. The stockmen contended that the underbrush must be burned and the forest officials said the bureau would co-operate, but that the burning must be done entirely under the regulations made by the service.

MISCELLANEOUS.

What is said to be the first shipment of corn in bulk ever received at Stockton was 200 tons of yellow corn shipped by Charles Adams recently.

A white strawberry is a curiosity being grown by Mrs. C. A. Hopkins of Lodi. The original plants were found growing wild in Indiana. The berries are of a yellowish white appearance and very sweet. They are said to be prolific bearers.

The pea canneries at Oakdale are having two 425-ton silos erected at their plant to preserve the pea vines and hulls as a stock feed instead of burning them as has been the previous practice. The silage will be sold to dairymen.

Prof. Miller of the University of California states that sheep should be much more extensively grown on the smaller farms of the State, but that it is not necessary, or, for that matter, desirable, to try to maintain a very large flock on a purely alfalfa ranch. While alfalfa is undoubtedly a great feed for sheep, it cannot be pastured to advantage on account of bloat. He believes, however, that every ranch could well afford to have a few sheep and on ranches where some grain is grown he thinks a larger flock should be kept.

VANDERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly records. Guy H. Miller, Route 1, Modesto, Cal

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butters as two-year-olds. A. A. Jenkins, Tulare.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

FRANK MEACHAM, Petaluma, California — Breeder Red Polled Cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS — Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

BULL CALVES from a grandson of Colantha Johanna Lad and from a son of King of the Pontiacs. J. W. Benoit, Route C, Modesto, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TWO REGISTERED HOLSTEIN BULLS out of A. R. O. cows. Sired by King Mead. Ready for service. J. H. Harlan Co., Woodland, Cal.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

FOR SALE—Pure-bred Guernsey Bull, 2 years old. Advanced registry breeding. E. L. Skidmore, Route C, Tulare, Cal.

ELEVEN REGISTERED HOLSTEIN COWS—Priced to sell as a bunch at very low figure. K. W. Abbott, Milpitas, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy 300 head in herd. J. W. Clise, Redmond, Washington

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal

HOLSTEIN-FRIESIAN CATTLE and Berkshire Hogs. H. B. Goecken, Breeder, Goecken Heights, Livermore, Cal

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

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REGISTERED JERSEY BULLS from register of merit cows. D. F. Conant, R. "B," Modesto.

BREEDERS OF A. R. O. Holstein Freisian cattle exclusively. Dirk Dairy Farm, Lemoore.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEYS — Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

N. H. LOCKE CO., Lockeford, Cal—Choice young Jersey bulls from tested cows for sale

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

BREEDER of Registered Holstein Cattle. Ernest Otto McClure, R. 2, Modesto, Cal.

BREEDER OF REGISTERED HOLSTEINS—E. E. Freeman, Route R, Modesto, Cal

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd. D. & H. Rowles, Modesto.

JERSEY BULL—8 months old. A bargain. O. J. Ames, Oakdale, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

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FOR SALE—Two young Percheron mares, ¾ sisters. Steel greys. One registered. Price, $600. Glenoak Stock Farm, Davis.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame Cal

MISCELLANEOUS.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells live stock—any kind—any quality.

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FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

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BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

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Veterinary Queries and Answers.

[Answered by Dr. H. B. Wintringham, Petaluma.]

[Subscribers wishing an immediate reply should send money order for $1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

DIPPING FOR CATTLE VERMIN.

To the Editor: I am enclosing sample of vermin which are among my cattle. I have tried sheep dip but it is not effective. Can you advise me of a wash that will kill them?—A. B. D.

[Dip your cattle in lime-sulphur dip twice, at ten-day intervals.]

TEAT TUMORS.

To the Editor: I have a cow that has just freshened. One of her front teats has a lump in it about the size of a bean and I am unable to get any milk out of it unless I put a silver tube in the teat. I have another cow just fresh that seems to have the same trouble, only not so bad. What causes this trouble, and is there any cure for it?—A. K., Franklin.

[These are teat tumors and can be removed surgically.]

COLLODION FOR LEAKY TEATS.

To the Editor: In the issue of February 19, I notice an inquiry regarding "leaky teats." I have known this trouble to be cured successfully by touching the end of the teat with collodion. This can be purchased at any drug store and 25 cents' worth should be enough for use on the teats of one cow for several weeks, if properly used. Evaporation is very rapid and the bottle should be kept in a cool place.—J. M. Zinn, Hynes.

[Collodion will do the work, but must be kept up indefinitely.]

SADDLE HORSE DOESN'T DO WELL.

To the Editor: Last fall I purchased a saddle mare in the city. She was then sleek and fat. I have been feeding her all the best barley hay she will eat and a couple of pounds of barley grain each day, and she is allowed to run on green grass every day. She seems to be in perfect health but is losing flesh. Am I feeding her correctly?—R. H. E., Raymond.

[Cut out the barley hay and substitute oat hay. Clean out the barley beards in her mouth which are causing the trouble.]

HORSE HAD BLOOD DISEASE.

To the Editor: I had a mare that got little lumps all over her body. The hair would then come off and leave a loose scab which would in turn come off and leave a skin sore. The legs were swollen after about a week, but were receding toward the last. Her condition did not seem to improve so I had her shot. I examined her after she was dead and found an amber colored liquid came from her nose after the blood, of about the same consistency as the blood. What was the trouble?—F. H. F., Lovelock, Nevada.

[This was some blood disease and probably could have been cured by prescribing some arsenical preparation.]

ALFALFA AFFECTS HORSE.

To the Editor: I have a young horse that appears to be in good condition and health, but does not have proper control of his legs. He wabbles when he walks and in turning around seems to get tangled up. He staggers and acts as if he was going to fall after getting up. Work does not seem to hurt him and he does not tire easily. He urinates freely, but this I attribute to his feed, alfalfa hay. He has been in this condition over a year and has grown gradually worse. Can I do anything for him?—Subscriber, Reedley.

[The trouble is caused from the continuous feeding of alfalfa, which causes these symptoms in some horses. Change feed to grain hay.]

TREATMENT FOR MAMMITIS.

To the Editor: I have a young cow that lost the use of one quarter of her udder by mammitis when fresh last April. Is there anything I can do to make that quarter develop and give milk? She will be fresh in May.—H. H. B., Turlock.

[The best treatment in this case is to massage the quarter for at least 15 minutes, two or three times a day.]

COWS HAVE INFECTIOUS DISEASE.

To the Editor: Eight of our cows freshened this month and last; all passing a bloody discharge for two or three weeks after calving. They all carried calves the full time and cleaned well. I also have a cow that has been coughing about two months;; not hacking but severe and sounds metallic. Some days she coughs almost steadily and other days very little. She is in good condition, but we cannot get her with calf. She calved nine months ago. Can you advise me what to do?—L. G. M., Sutter.

[Your cows' trouble is of some infectious nature. Wash them out daily with 1-1000 solution potassium permanganate. It would be advisable to have a veterinarian out to your place and have all your animals tested for tuberculosis as a cough of this nature is useless to treat until a diagnosis of tuberculosis is, or is not, established.]

WHEN TO BREED A JERSEY.

To the Editor: What is the best age to breed a Jersey heifer? I have discussed the subject with various ranchers, but no two of them agree as to the best age of this breed to have a calf. I have a 14-months-old Jersey, but will not breed her till I hear from you.—A Subscriber, Roseville.

[Answered by N. L. Locke, Lockeford.]

[Our practice is to breed a Jersey heifer to have first calf at about two years of age. This should depend upon development of the heifer. If she is small and undeveloped give her more time; and if large and well grown you might start earlier. We are satisfied there is nothing lost by giving a heifer plenty of time as long as she is developing nicely and not getting too beefy.]

HOGS AMONG APPLE TREES.

[Written for Pacific Rural Press.]

Hogs aren't likely to hurt good-sized apple trees except that they will rear up against them and learn to shake the fruit off, and sometimes get hold of low-hanging limbs to get the fruit, according to G. F. Emmons. Mr. Emmons has worked a great deal in the Watsonville district where people turn hogs into the orchards to clean out morning glory.

But he would not have hogs in the orchard because they pack the ground so hard both by tramping and lying on it. This is especially noticeable at plowing time. They root around tree trunks to find cool, moist earth to lie in. Then they pack the dirt down so that it either does not turn off the plow, or is loosened in big chunks. This is especially bad when hogs have been in the orchard while the ground was wet.

Profit-sharing Silo Prices

Early last Fall we saw that prices on silo lumber and steel were going up, so we contracted for our 1916 supply long ahead! Since then *steel* has advanced 100% and silo *lumber* about 20%.

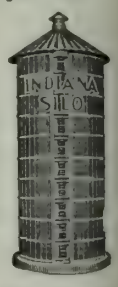
Manufacturers without the capital or foresight to *anticipate* this increase, are now *advancing* prices. We could do so, too, and make the extra profit. But as long as our supply holds out, we will accept orders for the

INDIANA SILO

at our present prices. Though we contracted for a 1916 supply last Fall, the way orders are piling up our supply of material bought at old prices, will soon disappear. Then we will be *forced* to charge the increase.

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am now offering a very fine bull out of a high-testing um, who was sired by King Pontiac Premier, one of e best sons of King of the Pontiacs, 165 A. R. O. aughters. His dam's present record is 21.09 pounds, erage test, 4.11%, made at four years old. This cord was made under verw unfavorable circumstances, d she will make around 25 pounds with next calf. n the sire's side the bull has the blood of Pietertje engerveld Count De Kol, 99 A. R. O. daughters; and um Deutschland Creamelle, is out of Creamelle Vale, e former world's championship milk cow. This young ll is almost white in color and is ready for service. is high test breeding will count in your herd.

Write or come and see him.

F. STENZEL.

an Lorenzo, California.

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BLACK-EYE BEANS FOR STOCK.

To the Editor: Will you kindly advise through your paper the proper time for planting Black-eye beans in this locality and how long it would require them to mature to the proper stage for feeding milk cows and also if they make good hog feed? Is it best to feed them before they become hard or afterward? Is there any danger of overfeeding, after stock has become accustomed to them?—E. T. W., Selma.

[We do not know of anyone having had experience in feeding Black-eyes or any of the other cow peas in the manner you describe. Perhaps some reader knows and will tell us about it. In the Southern states cow peas are used extensively as a pasture crop for all kinds of live-stock and many times are put up for hay.

Prof. Henry in his book "Feeds and Feeding" says that it is desirable to turn the stock into the field after the pods are well matured, although stock may be turned into the field when the vines are five inches high. In the latter case, however, care should be taken not to over-pasture the crop.

They are a legume and consequently rich in protein. Because the vines do not ripen evenly it is difficult to make good hay from them, but it is done, pods, beans and all. We find no reference to there being danger of overfeeding the cow pea forage, but like alfalfa hay some grain would doubtless be desirable to more evenly balance the ration.

Beans can be planted as soon as danger of frosts is over, which of course varies in different parts of the State. Probably with you any time after May 1 will be safe, although no one can be sure of this. They will mature in 70 to 90 days. Eds.]

HORSE BREAKER STILL ALIVE.

To the Editor: I thought you might be interested in knowing whether I am still in the land of the living or somewhere else. I have been much entertained and amused by the remedies suggested for the cure of my mare's habit.

As I do not belong to the Wild West Show or the 101 Ranch outfit I have not tried the quirt and spur method advised by one writer, and I do not feel inclined to get tangled up in all that rigging. I think I will try some more safe and sane method. I believe in "Safety" first, last and all the time.

I secured a bulletin from the U. S. Department of Agriculture on breaking and taming colts and one method it mentioned for gentling a colt was to tie its head to its tail, making it go in a circle. When it gives up it will stand to be harnessed, saddled or mounted. Do you think that method would work on a mare 14 or 15 years old?—G. E. Wright, Manton.

[It's hard to teach an old dog new tricks, but maybe you can do it with your mare. It might make a circus ring performer out of her without the need of quirt and spurs.—Eds.]

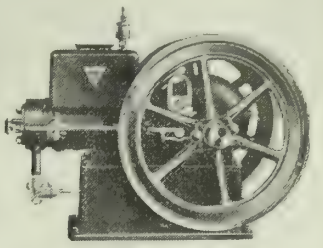
The purebred three-year-old Shire mare owned by the Ramina Ranch at Tehachapi, walked right off with a 16-inch plow, pulling it eight inches deep in decomposed granite soil, according to L. M. Anderson.

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NOT FIRST COST ALONE, but the years of service it gives you determines whether or not an engine is expensive or economical.

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Poultry for Profit---Producing and Marketing.

CONTAGIOUS DISEASES.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

This is the season of the year when contagious diseases come to rob the poultryman of all his leisure hours and perhaps his winter profits.

Roup, canker, and all diseases of the throat and lungs are very easily contracted by hens that have been highly fed during the winter months.

The safest thing to do is to ease up a little on all mash foods, feed more dry grain, and alfalfa, or other green food, and give the whole flock a physic of Epsom salts or coal oil. If convenient, clover or alfalfa should be cut in short lengths and if fed in a mash, let the greens predominate.

First Signs.—Sneezing is always the first sign of colds in hens and if caught in that stage it is easily controlled, while if allowed to run until roup is developed, the whole flock may be affected. If the cold is neglected until the eyes are affected, there will have to be individual treatment with an antiseptic solution. Don't expect a roupy fowl to get well without treatment, for they will not get well; but simply develop into a chronic condition and the disease or germ is always there to spread, like a fire that has been left smoldering. The germs are spread through the excretions, so the first thing is to clean up and disinfect the houses, feed, and water troughs, and keep the dropping boards clean.

Boracic acid and chamomile flowers make a good wash for the eyes, and when these things are not on hand, use permanganate of potash, or coal oil. In using the last mentioned articles it is best to dip the fowls in a can containing enough liquid; hold the head under until the fowl fights for breath, then wipe off the extra oil, and let it go. Usually about two treatments with a physic will put the hen on the road to recovery.

The Canker Stage.—When the disease attacks the air pipes or the tongue, it has reached the canker stage and is much more difficult to cure. However, with persistence it can be cured and the quickest remedy is powdered bluestone. Take a little stick and make a swab with cotton. Dip this into the powdered bluestone, and put on the canker. scrape off the cheesy substance and put more dry bluestone on. Two treatments will usually cure if the bird is not too far gone.

Give the whole flock a tonic by mixing a tablespoonful of sulphate of iron and one teaspoonful of carbonate of iron into a small amount of mash that will be quickly eaten up. Do this twice or three times a week and feed plenty of good, sound grain, green feed, and good clean beef scrap, and the flock will soon be in condition again.

Spring winds are hard on poultry, and every one should see that their birds are properly sheltered and not allowed to sleep in draughts.

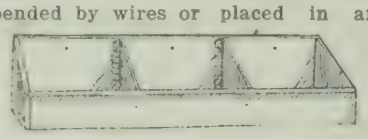
About Preserving Eggs. — Mrs. W. C. D. asks: "How can one tell when the water glass used for preserving eggs is exhausted? I have some now that looks somewhat like starch. Would it be safe to use? If so, should it be boiled or strained?"

If it looks like starch, it would appear to me as if the water had evaporated, leaving the water glass in its natural condition, or nearly so, which is a thin syrup. I have never tried to use it more than one season without adding some fresh water glass to the liquid. A druggist ought to be able to advise you as to the length of time it will act effectually, but to thin out ready for use, boiled water should always be used after cooling.

METAL NESTS FOR POULTRY AND GAME BIRDS.

[By Geo. H. Croley.]

The accompanying illustration represents a set of 11x11 inch nests, made of galvanized iron that may be hung by hooks or nails on the wall of a poultry house or suspended by wires or placed in an aviary for the use of game birds. In addition to the durability and cheapness of these metal nests, they greatly insure against vermin. Lice and mites do not thrive in them, and the few that might find lodgment in the nest material may be instantly killed by taking the nests to a safe place, sprinkling with kerosene and setting them on fire.



A set of galvanized iron nests that greatly insure against lice, mites, and ticks.

By the exercise of a little ingenity in placing them in an aviary, one may gain remarkable advantages. A fender or various shaped hoods made of green cloth to obstruct the view please and attract game birds to these nests. When these birds nest on the ground under brush they are often the prey of ticks, lice, and mites, as well as burrowing animals. Any shape or size nesting bowl may be formed in these nests by partly filling them with excelsior, leaves, or straw that have been well soaked with lice-killing liquids; over this material pack moist earth to the thickness of one or two inches. Another plan to obstruct ticks is as follows: Solder a 20 or 40 penny nail by the head under each corner; punch holes in the lids of four baking powder cans or other metal cups and slip one on each nail and solder it firmly about two inches from the bottom of the nests; keep these cups filled with liquid lice killer.

The College of Agriculture has agreed to give a short course in poultry husbandry at Riverside from June 5 to 9, inclusive. There will be lectures every morning from 9:30 to 11:30, and demonstration periods from 1 to 3 each afternoon during the five days. Among the subjects to be dealt with will be incubation, brooding, housing, yarding, breeding, and feeding.

TURKEYS WITH SPOTTED LIVERS.

To the Editor: I am losing young turkeys. Their livers are full of white spots. What is the cause and remedy?—Mrs. B., Gridley.

[Answered by Geo. H. Croley.]

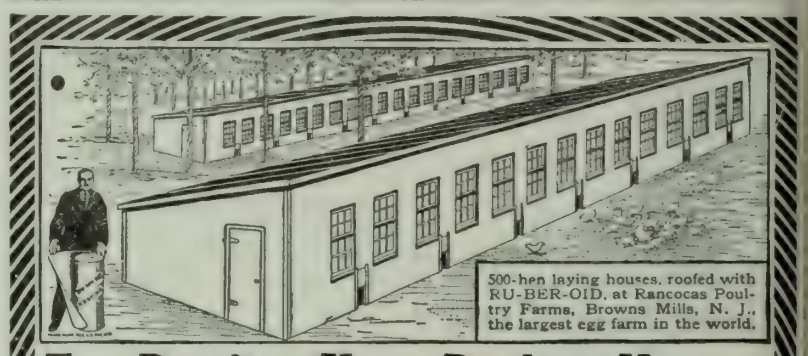
[There are four fatal and practically incurable diseases that cause spots to appear on the livers of turkeys: **Avian Tuberculosis.** — This, comparatively a rare disease, produces whitish or grayish points or nodules the size of a pea. **Spotted Liver (cercomoniasis).**—This causes yellowish white spots on the liver that are somewhat depressed—not prominent or raised as in tuberculosis. Clean premises and disinfect thoroughly. Give a purgative every ten days. Epsom salts are good for this. **Aspergillosis.**—This disease is created by dust from moldy straw or other litter and from damaged grain. In addition to the whitish yellow spots on the liver, these spots usually appear also in the throat and lungs and are often mistaken for tuberculosis. It has been claimed that very small doses of iodide of potassium in water will sometimes cure this disease. **Black Head** (infectious entero-hepatitis). — This is caused by a germ that is taken into the system with the food or drink. The liver is usually greatly enlarged and on the surface are yellowish spots varying from ⅛ to ¾ inch in diameter. In issue of Dec. 25, 1915, page 666, we answered an inquiry in regard to black head in which is suggested means of checking the spread of this disease in its early stages.

FOWLS POISONED BY COPPER

To the Editor: My fowls are droopy, eat little, and droppings are watery and greenish color. Last summer fowls on the same ground were affected the same way; pens and houses have been vacant since last fall and recently were thoroughly cleaned.—A. C. M., Coutolenc.

[Answered by Geo. H. Croley.]

[Th watery, greenish droppings are a symptom of cholera; but during more than thirty years we have never seen a case of real poultry cholera in California. The description also indicates copper poisoning, the symptoms of which are: Diarrhoea, blue or green droppings, violent pain and convulsions; this poison sometimes acts as an emetic, causing fowls to make an effort to



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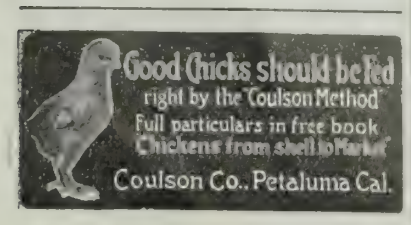
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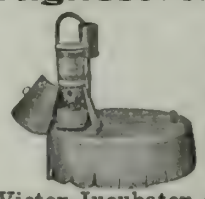
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omit. The source of poison may be Bordeaux or other spraying mixture, containing blue vitrol or copper sulphate, or the fowls may be forced to eat grit containing native copper or some copper compound. As remedies, give large quantities of milk or white of egg or mucilage. Supply grit that is free from harmful minerals.]

OLIVES PREVENT LAYING.

To the Editor: Our 200 hens have laid no eggs for five months. We have two olive trees that were loaded and these hens have been picking up the olives all winter. Would this prevent laying?—F. P., Buckeye.

[Answered by Geo. H. Croley.]

[The great amount of oil in olives would prevent laying, because it makes the ration too wide. One unit of fat is as rich as 2.4 units of starch. Usually the acid in fruit is what prevents laying, but the olive is an exception for the reason that there is very little acid in olives. Prof. Wickson states that even the bitterness of the olive is not an acid, but a glucoside which is capable of breaking up into glucose which is of a sugary nature and, therefore, also a fat-former. A ration containing a good percentage of bran, shorts, and meat scrap will quickly bring these hens into laying condition.]

WHY KALE GETS BITTER.

To the Editor: In your publication of Feb'y 19, C. E. B. of Petaluma wanted advice about preventing bitter kale. If the cause was not the hardpan or sub-drainage I suggest that he might have broken the tap roots of the plants when he set them out. If there is plenty of water near the surface or the plants are mulched well this will not hurt them so much, but if the plants have to go far for water the young plants must have a good long tap root when they are transplanted and these roots must be put in the soil carefully and straight up and down, or they will not go down deep in the ground. If they are broken or bent they never draw the water so well even if they do get down to water. If the seed is sown in boxes the dirt must be ten or twelve inches deep, and if sown in the open ground the plants must be taken up carefully. **Reader.**

Colusa.

A CURE FOR SPARROWS.

To the Editor: Since writing to you about exterminating rats, sparrows and gophers I have discovered that sparrows can be fooled into eating poisoned wheat, if a teasponful of New Orleans molasses is added to each gill of wheat (soaked) and well mixed with it and powdered strychnine added in sufficient quantities to coat each grain. They destroyed beets and lettuce as fast as they grew and also attacked the young apricots.

Knowing that canaries are fond of sugar I thought that the sparrows might have a "sweet tooth" also. Apparently they have, as I have about cleaned them out. Where there were hundreds of them before there are very few to be seen now. Neighbors report finding dead sparrows all around us.

San Jose. **Sam'l Haigh.**

POULTRY NEWS NOTES.

[By Geo. H. Croley.]

The Fresno Co-operative Poultry Association was organized on March 3 by the poultry keepers of Fresno county. The following officers were elected: President, J. M Hacock; Secretary, F. N. Howard; other directors, A. W. Gearhart, J. S. Mitchell and T. Hall. It will be conducted similar to the Danish Creamery Association; the object is to lower the cost of production and to guarantee to the consumer a first-class product.

The Schilling farm near Newark, Alameda county, is to be transformed into a private game farm by A. Schilling of San Francisco and a group of friends. This enterprise has been incorporated under the name of the Arden Game Farm. The State Fish and Game Commission has granted them permission to raise and market wild ducks and other game.

A Dept. of Agri. report states that fully 30 per cent of the dressed poultry sent to market by poultry keepers is incompletely bled. This reduces the value 2 to 5 cents per pound because the appearance is inferior, the flavor is not so good, the flesh loses its firmness sooner, and the keeping qualities are greatly impaired.

Feeding red millet seeds to baby chicks is injurious, but soft shelled white or yellow millet seeds are excellent. The red variety is a hay producer while the soft white and yellow sorts are used for human food in Asia and southern Europe.

The soft long chicken fleas which frequently infest nest boxes, may be killed with a spray made of one gallon of salt in four gallons of water.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of PACIFIC RURAL PRESS, published weekly, at San Francisco, Cal., for April 1, 1916.

State of California (
County of San Francisco(ss.

Before me, a notary public, in and for the State and county aforesaid, personally appeared Frank Honeywell, who, having been duly sworn according to law, deposes and says that he is the owner of the PACIFIC RURAL PRESS, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit: 1. That the names and addresses of the publisher, editor, managing editor and business managers are: Publisher, Frank Honeywell, Berkeley, Cal.; Editor, E. J. Wickson, Berkeley, Cal.; Managing Editor, E. J. Wickson, Berkeley, Cal.; Business Manager, Frank Honeywell, Berkeley, Cal. 2. That the owner is Frank Honeywell, Berkeley, Cal. 3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None. 4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

FRANK HONEYWELL.

Sworn to and subscribed before me this 24th day of March, 1916.

C. B. SESSIONS,
Notary Public in and for the City and County of San Francisco, State of California.

My commission expires May 26, 1917.

Poultry Breeders Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SOME BABY CHICKS!— Roofden Poultry Ranch announcement. Old customers and new crowded us with business during March, but with added capacity can care for more orders now. We specialize on R. I. Reds, Barred Rocks, Black Minorcas, Brown and White Leghorns—the best utility breeds for meat and eggs. Breeding stock well mated, eggs well hatched, and we know how to pack them for safe delivery. Write for particulars and prices (express paid when requested); any quantity from a dozen to thousands. Price and quality will suit you. Roofden Poultry Ranch and Hatchery, Campbell, Cal.

ALL KINDS OF BREEDING and laying hens, roosters and pullets. Petaluma incubators, new and used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minorcas, Buff, White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards, 2550 San Pablo Ave., Oakland, Cal. **Closed Sundays.**

LIVABLE BABY CHICKS—We are supplied by reliable Breeders and experienced hatchers. Better chicks cannot be had from any source. All varieties, any number. High quality birds, bargain prices, breeders, laying hens, pullets. **Free exhibit.** Everything in Poultry, Pigeons, Rabbits, Dogs, Cats, Canaries, Pets. Give us a call or write. **Fanciers' Exchange,** 642 S. Main St., Los Angeles, Cal.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

BABY CHICKS—All sturdy youngsters from good stock and hatched right. Rhode Island Reds. Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

BUFF ORPINGTONS, BUFF LEGHORNS, BOURBON RED TURKEYS, BUFF DUCKS—Winners at Riverside, Pasadena, Los Angeles and San Francisco. Breeding stock. Hatching eggs. Baby stock. Free illustrated booklet. The Ferris Ranch, R. 2, 144D Pomona, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., INC., Poultry Supplies, San Francisco.

BABY CHICKS—EGGS—Rhode Island Reds, White Leghorns: Settings, 100s, 1000s. Our famous heavy layers. Hatched right in $60,000.00 brick and concrete hatchery. Pebbleside Poultry Farm, Sunnyvale, Cal. Prices reasonable.

EGGS FOR HATCHING — Sicilian Buttercups. Best stock from Pennsylvania and Vermont. Eggs, $2.50 per 15. A few good cocks. White Wyandottes; Jenkin's strain. Eggs, $1.50 per 15. J. Parnell, Box 64, Route 1, Sebastopol, Cal.

ROSEDALE POULTRY FARM—S. C. Rhode Island Reds exclusively. Baby chix and hatching eggs from large, heavy laying blue-ribbon "Aristocrat" strain. Mid-spring reduction prices. Write for mating list. Mrs. J. F. Rose, Ceres, Cal.

ORDER NOW if you want strong, healthy S. C. White Leghorn chicks from Jackman's pure-bred egg producers, $80 per thousand. Hatching eggs, $4 per hundred. Sunnyside Poultry Farm, Route 2, 1610 Vine St., Sacramento, Cal.

CHICKS—Day-old chicks from my healthy, vigorous, heavy-laying, free range stock of Hoganized S. C. White Leghorns. Price, $7 per hundred. H. P. Hansen, Route 4, Box 177, Petaluma, Cal.

BUFF ORPINGTONS—Eggs from high-class matings that have correct color, shape and large size. Choice exhibition and utility stock for sale. No chicks. E. J. TALBOTT, San Mateo.

THE SANTA CLARA VALLEY HATCHERY has the goods to offer in 9 varieties of baby chicks and will book orders for Ducklings—White Pekins and Indian Runners. Route 6, San Jose, Cal.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

ANCONAS—Thoroughbreds. Extra fine layers. Breeders selected. Eggs for April and May, $1.50 per 15; $7 per 100. Mrs. A. Stromwall, R. 2, Merced, Cal.

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BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trapnested stock. Fairmead Poultry Farm, Fairmead, Cal.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. Lay most when prices highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for early maturity and heavy laying. Eggs and chicks. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired **Heavy Winter Layers.** W. C. Smith, Prop., Corning, Cal.

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ANCONAS—Standard-bred—UTILITY. 243 Egg strain official Missouri State Record. The BEST to be had REGARDLESS of PRICE. Unequaled for large egg production. Satisfaction guaranteed. REDUCED PRICES on Breeding Stock and Eggs for April and May. Write now. G. F. Leckner, Tulare, California.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396, Los Gatos, Cal.

INCUBATOR CHICKS—White Plymouth Rock, White and Brown Leghorn. Highest class of stock bred to standard and to lay. If you are interested in the best send for Catalogue. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

BABY CHICKS—White Leghorns, $9.50 per 100; $45 per 500; $90 per 1000. Express prepaid and full count of live chicks guaranteed at destination. Oswald Miller Robertson, Roseneath Egg Ranch, Arlington, Cal.

HATCHING EGGS from thoroughbred Barred Rocks, White Rocks, Reds, $1.50 per 15, prepaid; Buff Minorcas, Blue Andalusians, $2; Indian Runners, $1.45. Six Buff cocks, $2.50 up. Cedarhurst Ranches, Route 2,

SINGLE-COMB RHODE ISLAND REDS—Hatching eggs, baby chicks and breeding stock. Wonderful egg-laying strain. One of the best show records in the state. J. M. Hacock, Dept. R, Box 393, Fresno, Cal.

FOR SALE—Barred Rock eggs from fine large prize-strain. Extra fine layers $1.50 per 15; $7.50 per 100. Miss F. W. Buckley, R. F. D., Box 71, West Berkeley.

ENGLISH WHITE LEGHORNS—Peerless Anconas. Hoganized. All 200-egg strain. Eggs, $1.25 per 15; $6.00 per hundred. Roseville Poultry Ranch, Roseville, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorcas, White Leghorn stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

WHITE ORPINGTONS AND BUTTERCUPS—Hoganized and Tested—220 egg strain breeders. Chicks and eggs for sale. M. S. Woodhams, San Mateo, Cal.

HERE IT IS—White Rock baby chicks. $15 per 100. Hatching eggs, $1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ceres, Cal.

BABY CHICKS from Hoganized Single-Camb White Leghorns, 4th and 5th awards at P. P. I. E. for 280 egg type. Tuoman Poultry Farm, Ceres.

ORPINGTONS, BUFF and WHITE Black Minorcas and Carneaux Pigeons. Cockerels ready for service. Susan Swaysgood, Route 2, Pomona, Cal.

BLACK MINORCA, BUFF ORPINGTON, R. I. Reds; eggs for hatching. Also cockerels for sale. Mrs. R. A. Holdridge, Box 282, Dixon, Cal.

EAST-SACRAMENTO HATCHERY—Capacity 16,000. Special low price for large lots of chicks. Box 1205, M St. Road, Sacramento, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs. $2 to $5. Chicks, pullets, cockerels. R. W. Stawetski, Route 2, San Jose, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and cockerels. B. C. Quessenberry, R. 4, Lodi, Cal.

PIGEONS—Pays to raise squabs. I breed Homers, Carneaux, Runts, White Kings, Maltese. J. A. Parysek, Colfax.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

SPECIAL—Barred Rock and Rhode Island Red chicks, $12.50 per 100. Safe arrival guaranteed. G. L. Hawley, Madera, Cal.

RHODE ISLAND RED BABY CHICKS and Eggs. Heavy laying strain. Send for circular. Rosedale Ranch, R. 1, Hayward, Cal.

TRAPNESTED LEGHORNS — White and Buff Stock. Eggs, chickens. Arthur R. Schroeder, Box 179R, Mountain View, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

GUINEA EGGS FOR HATCHING—15 for $1, postpaid. Hazel Holmes, San Miguel, Cal.

TURKEYS, DUCKS AND GEESE.

HART'S BRONZE TURKEYS — Vigorous young stock. Eggs by the setting or incubator lots. Circulars free. Albert M. Hart, Clements, Cal.

FOR SALE—Thoroughbred Rouen Duck Eggs, $1.25 per dozen. $10 per 100. W. J. Miller, Farmington, Cal.

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PEKIN DUCK EGGS for hatching, $1.00 per dozen. L. D. Collins, R. F. D., 54G, Denair, Cal.

PHEASANTS—Golden and Ringneck. Eggs from April on. T. D. Morris, Agua Caliente, Cal.

HARES AND RABBITS.

LEADING RABBITRY IN AMERICA—Flemish Giants and New Zealands. Cut your living expenses. Catalogue free. Empire Rabbitry, Empire, Cal.

BELGIAN HARES—Young stock for sale. Hurd Bros., St. Helena, Cal.

The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends:

The change of seasons brings new things for children as well as for their mothers. The stores are showing many pretty wash dresses for little girls in combinations of plaids or stripes with plain materials of harmonizing tint.

The middy suit is one of the most popular garments—it is seen in all white, or with a skirt of striped material and a white middy with trimmings of the same stripe. A very pleasing effect is gained by having the hair robbon (if the child's hair is dressed that way) of the same color as the stripe of the material. For small girls, these striped skirts are just straight, pleated skirts, but for girls from ten upward, they are either gored, or made in a two-piece, semi-circular pattern, with the stripes meeting diagonally in a seam both front and back.

For a daintier, lighter weight dress, the striped dimity, made with a smocked yoke and hanging free below the yoke, makes an attractive garment for the tiny girl; and sheer white material, trimmed with lace and a touch of embroidery is good style and suitable for all ages.

There is so much talk about inferior dyes that care needs to be exercised in the purchase of any colored wash goods.

For the small boy from four to eight, the shops are full of attractive Norfolk wash suits, developed in striped coat with collar, cuffs, belt and trousers of plain material, or of all plain material with white collar, cuffs and belt. With these are worn the bright, Windsor tie, and they have almost entirely replaced the "Buddy Tucker" suit of last year. With these suits the little men wear half hose and low shoes or sandals and they are well dressed enough to go anywhere.

For the older boy up to fourteen, the wool Norfolk suit still holds its popularity, but the coat is not always developed with the regulation pleats, but it always has the belt and patch pockets and full knickerbockers. For dressy wear with these suits, there is nothing better than the Eton collar, which is broad enough to extend over the coat collar and finished with a bright Windsor tie. But many boys of twelve and over prefer the collar like "father wears" and a four-in-hand tie.

As long as boys wear short trousers, their stockings are a good deal in evidence, and I wonder how many of you mothers know about and use the guaranteed hosiery. They cost a little more than the ordinary hose to begin with, but you are entitled to return them if they develop holes before a given time (and they always do), which really gives you two pairs for the price of one.

The jocky caps are having a run of popularity now; the cap itself is small, fitting closely on to the head and having a long visor. The straw hats for the little people are rather high-crowned and worn with the brim turned down. Devotedly,

Rosabella Best.

A WHOLESOME DRINK.

Cocoa or chocolate ground or shaved from the cake, unsweetened, sweet or milk, all make a good drink. Add sugar and mix it to a paste with warm water. About one tablespoon of both together will make a medium strong drink. Add water to make one-half cup for each cup desired and boil for a couple of minutes. Then add hot milk and serve with whipped cream if possible. A marshmallow is a delicious addition, or a dash of vanilla or ground cinnamon. If egg is used, beat thoroughly and blend carefully just before serving. For delicious iced cocoa make the syrup stronger and add a pinch of salt. When ready to use, pour over cracked ice (if possible) and fill up with all milk or part milk and part water and top with whipped cream.

EMERGENCY EQUIPMENT.

In too many households, when an accident occurs, there is nothing at hand to work with and the result is that wounds that were trifling at first become serious. It is a fact that home accidents are more apt to be followed by blood poisoning than those which happen in workshops where equipment is ready. An emergency case should have in it, plain gauze for padding for wounds, absorbent lint for compress pads, absorbent cotton, roller bandages to hold dressings in place and adhesive plaster for closing small wounds. There should also be at hand an antiseptic wash for cleansing wounds and a carbolized paste for use in burns and scalds. Aromatic spirits of ammonia are valuable in case of fainting or shock—do not hold the bottle to the fact, but place liquid on a cloth to be inhaled.

LUNCHEON SETS.

At the Woman's Exchange (a specialty shop for the sale of home-made articles by women), a new idea in luncheon sets was displayed in the window. Each set consisted of a square for the table and small napkins to match—one set being developed in tan linen with picot edge of blue embroidery silk and a small cross-stitch design in one corner of the same color. Another set was of white linen with crocheted corner set in. This crocheted section had an initial worked in it.

TRAVELING BAGS.

One of the best stores had a window display this week of traveling cases and traveling bags for both men and women. These were all fitted up with all the necessities of travel and included brushes, manicure articles, soap, mirror, etc. The toilet articles were in silver, ivory and tortoise and the bags of leather, lined in silk or fine leather.

PLAY FORMS HABITS.

A very celebrated worker with children gives as his opinion that practically all habits of children are formed at play. Honesty is developed by games like croquet, while a sense of justice is formed by children in swings. The positive habits are formed in occupation while the vices flourish in idleness.

A bit of brisk rubbing with kerosene will remove finger marks from doors.

CHRYSANTHEMUMS.

[Written for Pacific Rural Press by Geo. N. Tyler.]

Chrysanthemums can be grown in almost any kind of soil, but do best in a clay loam that has been thoroughly enriched with rotted manure and they also like a little leaf mold in the soil, and by all means give them a liberal dose of bone meal, well worked in, as they require phosphoric acid to do their best. They should be grown in a sunny location, sheltered from strong winds, and if they are shaded from the hot afternoon sun, so much the better. I will give my method of growing the single stem flowers. Make your cuttings now, from tips, or take what are called two-eye cuttings. Cut off just above an eye with a sharp knife (leave the leaf on), and then cut off just below the next eye, cutting off the leaf. They should be planted in three inches of sharp sand, and should be shaded and sprayed once a day, towards evening. Never let your cuttings get wilted or you cannot grow large flowers, for the cutting gets hard-wooded, and takes longer to root. The wood is in the right condition for making cuttings when it breaks clean across when bent, but if it knees, it is too hard. They will root in from three to four weeks. Never by any means take divisions of old plants if you want to grow large flowers, and never grow them in the same location two years running. After your cuttings have rooted never let them remain long in the sand or they will run up spindling.

Plant them in the beds where they are to bloom. The beds should be four feet wide so you can work from both sides of them. Give them a thorough watering when you set the rooted cuttings out, and shade for a few days till they get established. Plant in rows ten inches apart and six inches between plants. After they have made a growth of six inches scratch in a liberal coating of bone meal, one-half pound to the square yard, and then stake them. The cheapest and best stakes are made from split shakes; a bundle of shakes costs 35 cents and one shake makes twelve stakes; there are twenty-five shakes in a bundle. Tie the plants when about eight inches high with soft twine or raffia, not too tight. When mums are in strong growing condition, they require a great deal of water, both on the foliage and at the root; spray in the evening after the sun has left them, and on very warm days in the middle of the day. After they have made a growth of about one foot, give them a mulch of cow manure about one and one-half inches.

If your plants develop a bud before the right time for taking same, three shoots will start out. Select the strongest and rub off the other two; also keep all side growth rubbed off as fast as it forms. The first bud that forms is called the first crown, and if it comes within a week of the time that you wish to take the bud to make your flower, rub off all the side shoots but that one. Most of the varieties of mums that are sold by specialists give the bud to take and the time of taking, and if you know the name of the variety, you can tell from their catalogue when and what bud to take. When varieties are propagated late they make what is called the terminal bud—the last cluster of buds that is formed. You can always get a good flower from a terminal bud. After you have taken your bud and the bud begins to swell, give liquid manure every other watering, one pound of sulphate of ammonia to fifty gallons of water makes a fine fertilizer for mums.

After your buds show color, do not give any fertilizer but tend carefully to the spraying and watering; but by no means wet the bud, or all your work will be for nothing. Remember that the main thing is to keep your plants soft wooded and in a growing condition all the time. If you let them get wilting dry they will become hard-wooded and an inferior bloom will be the result. By following these directions you can get flowers up to twelve inches in diameter, according to the variety.

Pompons and singles are all the go in the east. They are very easy to grow, as they do not require any disbudding. Plant them one foot apart both ways. When the plants are six inches high pinch them out, so they will branch. Fertilize and feed as with the single-stem mums. All mums are greatly benefited by a shading of cheese cloth after you take the bud, or after the buds form. Pink varieties should not be fed much as it causes them to bleach.

Green and black aphis are the insect pests that greatly infest the mums. By spraying every night with a strong spray of water you can keep them down. Otherwise get the nicotine extract of tobacco, and use a two-inch pot full to five gallons of water, once a week. Diabroticas, or the yellow-spotted beetle, eats the flowers. These will have to be hand picked before they do much damage.

You can plant out the exhibition show and commercial varieties of mums up to the middle of July, but the singles and pompons should be planted as soon as you can procure the plants.

In staking and tying up, work from the center of the bed out. In disbudding work from the center out and from the top down so if by accident you should break off the bud you will have a lower bud to make a flower. Do not let any underground suckers form; lift them up and cut them off close to the main plant. If you follow these directions carefully you can grow as good mums as any professional.

LOST HOURS.

"I say good-night and go upstairs
And then undress and say my prayers
Beside my bed, and then jump in it;
And then—the very nextest minute—
The morning sun comes in to peep
At me. I s'pose I've been to sleep,
But seems to me," said little Ted,
"It's not worth while to go to bed."

—Sidney Dayre.

THE LITTLE WOODEN FLAT-IRON.

Long, long ago there lived a little girl who had never seen a toy-shop. Her home was a wee brown house in a village many miles from any big city. Her name was Molly Ann.

One Monday morning when Molly Ann's mother was washing clothes in the kitchen, the little girl undressed her dolls and washed their clothes in the tin wash-basin. She had neither soap nor water, but that made no difference, because Molly Ann played that the basin was a wash-tub full of water, and she played rub soap on the dolls' clothes.

Molly Ann's mother stopped washing, rubedy-rub, rubedy-rub, on the big washboard when she noticed what her little girl was doing. She stopped washing long enough to smile and get the ball of string.

"Wouldn't you like to have a clothes-line to hang your dolls' clothes on, to dry after they are clean?" asked mother.

"Oh, yes!" answered Molly Ann. "Will you make me a clothes-line?"

"To be sure," answered Molly Ann's mother; and she straightway broke off a long piece of string. One end of the string she tied to the table-leg, the other to the arm of the straight kitchen rocker, and there was a clothes-line upon which Molly Ann hung a big washing.

Next day when Molly Ann's mother was doing the ironing, and stepping from the kitchen stove to the ironing-board, singing as she worked, Molly Ann played ironing her dolls' clothes. Her ironing-board was the bottom of a wooden chair, while a corner of the wood-box was her stove. She was busily ironing dolls' clothes, singing as she worked, when her father walked through the kitchen.

"Let us see your flat-iron, Miss Molly Ann," said he.

"It isn't a really one," explained Miss Molly Ann. "It is only a big hickory nut. I play it is a flat-iron. You can play 'most anything!"

"So you can, so you can!" agreed her father. "Daddy will make you a little wooden flat-iron like your mother's big one."

That very evening the little girl's father began whittling out a wee flat-iron from a bit of wood. He whittled and he whittled and he carved until at last he finished a tiny wooden flat-iron, smooth and white. The little girl was so pleased with that flat-iron she carried it to bed with her, and smiled in her sleep. She may have been dreaming about the new toy.

Next day and the next and the next, Molly Ann played wash and iron; truth to tell, she was so happy with the little flat-iron it is a wonder the dolls' clothes didn't wear out before Monday came again.

On Tuesday, when Molly Ann's mother was ironing big clothes with the big irons, singing as she worked, and Molly Ann was ironing little clothes with a little wooden iron, singing as she worked, Mrs. Peterson rapped at the front door. Molly Ann's mother put her flat-iron on the hot stove and went to the door. Immediately Molly Ann did exactly what her mother did. She put her little wooden flat-iron on the hot stove and went to the door.

"I came to borrow your log-cabin quilt pattern," said Mrs. Peterson, when Molly Ann's mother had said, "Do come in and have a chair."

Not many minutes passed before Mrs. Peterson stopped talking about quilts to say:

"Dear me, I smell something burning! It smells like wood! I do hope your house isn't on fire!"

To the kitchen rushed Molly Ann's mother, followed by Molly Ann and Mrs. Peterson.

"It is only Molly Ann's flat-iron!" exclaimed Molly Ann's mother. "It is smoking hot!"

"Oh, my little flat-iron is spoiled!" wailed Molly Ann, when mother lifted her treasure from the hot stove with the stove-poker. "Oh, my little iron is spoiled!" No wonder Molly Ann cried.

Fortunately the little flat-iron wasn't spoiled. That very evening Molly Ann's father whittled off the scorched places and smoothed the little flat-iron with sandpaper until it was good as new. But Molly Ann never put that little flat-iron on the stove again.—Frances Margaret Fox, in The Churchman.

To destroy the slugs that infest the gardens, make a strong brine in an empty tin can and drop the slugs in—this is a much better method for children than crushing them.

The STEPHENSON Patent Cooler
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NEW YORK, February 27.—Prominent women representing all parts of the country have been appointed members of a special committee to organize the campaign undertaken by the National Housewives' League to build up the health of the nation through proper feeding as its contribution to the preparedness movement, it was announced here tonight. Every woman's organization in the country will be urged to take up the propaganda.

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FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS.

San Francisco, April 5, 1916.

WHEAT.

Indications of a light crop have caused a further advance in the East, and the Portland market also shows a slight advance. As local buyers are now getting much of their supplies from the north, Bluestem has been marked up a little, and other grades are very firm. The more distant future, however, is very uncertain, depending to a large extent upon war developments.

Cal. Club, ctl	$1.65@1.70
Northern Bluestem	1.90@1.92½
Northern Red	1.85@1.95

BARLEY.

The speculative market is a little easy, but the spot grain shows increasing firmness, with a fair consuming demand, and holders generally demanding the top figures.

Shipping, ctl..	$1.40@1.42½
Choice Feed, ctl.	1.35@1.37½

OATS.

Everything under this head is very dull, with no consuming demand of any consequence in this market. Values are weak, but not quotably lower.

Red Feed	$1.35@1.37½
Red Seed	1.45@1.65
White	1.45@1.50

CORN.

Eastern and California Yellow remain steady on the former basis. Egyptian, etc., find a fair demand, and considerable offerings move readily at the prices quoted.

Egyptian Yellow, ctl.	$1.80@1.85
Milo Maize	1.40@1.45
Kaffir	1.60@1.65
Egyptian	1.50@1.57½

BEANS.

There has been a gradually increasing inquiry for white beans for shipment, in consequence of which this variety has again been marked up a little. Colored beans, however, still receive very little attention, and in some varieties there is still a good deal of stock on hand for this time of year. Holders for the most part are maintaining prices pretty well, but the tendency is still downward, and slight declines are noted this week in pink and cranberry beans.

(On wharf, San Francisco.)

Bayos, per ctl.	$4.50@4.60
Blackeyes	3.00@3.10
Cranberry Beans	4.65@4.75
Horse Beans	3.00@3.25
Small Whites (south)	5.90@6.00
Large Whites	5.75@5.90
Pinks	4.20@4.30
Limas (south)	4.35@4.45
Red Kidney	6.50@.675
Mexican Reds	4.50@.465
Tepary Beans	4.00

SEEDS.

No further change is noted in prices, and the market is rather quiet in all the varieties quoted.

Melilotus Alba, lb	23 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	5 c
Soy Beans	6 c
Canada Peas	5¼@6 c
Alfalfa, per lb.	22@24 c
Sudan Grass	40 c

HEAVY SHIPMENTS OF STRAWBERRIES START.

Strawberries are now coming forward in fairly large quantities from several districts, and prices will drop considerably in the next few weeks if weather continues favorable. Los Angeles stock is plentiful and much lower. Watsonville stock is showing up well, and while the acreage has decreased the crop is said to be large. The acreage at Sunnyvale has been considerably increased. Some fine berries are coming from Fresno, where a large crop is also expected; and the Sacramento district will soon start carload shipments north. Dealers look for a generally large crop if there is no heavy rain; but if the canning demand holds up prices should be up to normal.

HAY.

The weakness of the last few weeks, with the diminishing supplies at shipping points, have led dealers to curtail their shipments to this market, and the arrivals have contrasted sharply. Prices stand about the same, except on stock hay, which has declined abruptly owing to the cessation of active demand; but all the medium grades are somewhat easy, as this market is still overloaded. Fancy wheat and red oat hay, however, are very firm. There is still a fair but not heavy movement to coastwise and interior points, with no export demand. Several districts are beginning to need more rain. Little new alfalfa has appeared, and values are steady as last quoted.

No. 1 Wheat	$13.00@16.50
No. 2	12.00@14.50
Tame Oats	12.00@18.00
Wild Oats	12.00@14.00
Alfalfa	12.00@15.00
Stock Hay	6.50@ 8.50
Straw, per bale	.25@ 40

FEEDSTUFFS.

The demand for concentrated feeds continues to decrease, owing to the abundance of green feed in most places, and prices are easing up a little. Bran is quoted slightly lower.

(Wholesale prices per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$22.50@23.50
Alfalfa Meal, per ton	20.00@21.00
Alfalfa Molasses Meal per ton	21.00@22.00
Bran, per ton	24.50@25.50
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00@25.00
Cracked Corn	40.50@41.50
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Tankage	45.00
Rolled Oats	29.50@31.00

VEGETABLES.

The asparagus market so far has been exceptionally firm. There is a large crop, and as much as 8,000 boxes came in the first of this week; but Eastern shipments have been heavy, and the canners are buying eagerly at better prices than they usually pay. Offerings are lighter now, and unless they increase materially local dealers do not look for much lower prices. Rhubarb is weak and so is lettuce, with heavy offerings, though prices are unchanged. Cabbage is scarce, and cauliflower about cleaned up. Celery also is stiffening up. Peppers and eggplant are higher, while supplies of peas and artichokes are excessive.

Cabbage, ctl.	70@80 c
String Beans	10@15 c
Peppers, bell, lb.	20@25 c
Rhubarb, box, Bay	50@90 c
Peas	3@ 4½c
Tomatoes, Mex., box	1.50
Eggplant, lb.	15@20 c
Celery, crate	2.50@3.50
Artichokes, doz.	20@40 c
Lettuce, small, crate	.75@1.25
Asparagus, box	1.50@2.00

POTATOES AND ONIONS.

Old potatoes are pretty well cleaned up, but new potatoes are beginning to appear. So far there are few, and much of the stock is too wormy for shipment, but some shipping business is expected later. Some Australian onions are offered at $4 per ctl., but move slowly.

New Potatoes, lb.	4c
Oregon Burbanks	$1.75@2.10
Salinas Burbanks	2.10@2.25
Delta Burbanks	1.25@1.85
Sweet Potatoes, ctl.	2.30@2.50
Onions, Delta, ctl.	1.85@2.25
Onions, Oregon	1.30@1.50
Australian	4.00
Garlic, per lb	8@10 c

POULTRY.

Very few turkeys are appearing. The general market is decidedly easy, with little demand and plenty of Eastern stock offered. Small broilers and hens are lower.

Turkeys, dressed	27@30c
Live Turkeys, lb	20@22c
Broilers, 15 lbs. to doz. and less, lb.	32@35c
do, over 15 lbs. to doz.	38@40c
Fryers	30@35c
Hens, extra, per lb.	19c
Small	19c
Smooth Young Roosters, per lb.	23@24c
Squabs, per doz.	2.00@4.00
Geese, per pair	2.25@3.00
Ducks, young, lb.	18@19c
Old	17@18c
Belgian Hares	10@11½c

BUTTER.

Extras show a further advance, being about 5c higher than last year. This is due to the heavy shipping movement, and the market is still lower here than in most other markets, as supplies are coming forward from nearby producing points very freely. Eastern prices are still maintained on a very high level, probably owing to foreign demands, and several more cars have gone East from California in the past week. There has also been quite a large movement to Seattle, partly for Alaska and some for Mountain states.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	28½	28½	28	28	28½	29½
Prime Firsts	28	28	28½	27½	27½	28½
Firsts	27½	27½	27	27	27	28

EGGS.

The demand continues very active, and the movement includes a good deal of stock for shipment, some going to Seattle and Alaska, and some to the Islands. Storage buyers are also operating freely, and the low prices have brought the usual heavy consuming demand locally. However, production has been quite heavy, and prices hang around the same level as last week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22	21½	21½	21½	22	22
Sel. Pullets	19½	19½	19½	19½	20	19½

CHEESE.

Offerings are large, but a little more demand has added ½c to fancy flats. Monterey cheese is lower, with large offerings.

Y. A.'s, fancy	18½c
Fancy Calif. Flats, per lb	18 c
Monterey Cheese	15@16½c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu
Butter	29	29	29	29	29	28
Eggs	21	21	21	21	21	21

DECIDUOUS FRUITS.

Loquats are a little higher, while apples are moving slowly, with little stock bringing over $1 per box.

Strawberries, S'n, crate	$1.00@1.25
Fresno	2.00@2.50
Watsonville, drawer	60@90c
Apples:	
Pearmain	.85@1.00
Baldwin	.75@1.00
Loquats, crate	2.50@2.75

DRIED FRUITS.

The dried fruit market remains about steady, as there has been comparatively little pressure to sell in most quarters, and while nobody is buying much beyond immediate needs, values are well maintained. Peaches, in fact, are quoted slightly

Special Live Stock Market Report.

A few grass cattle arrived at this market during the past week, but there has been very little buying transacted and the market is not as yet established. There is no apparent change in the market, but there is an easier feeling among packers as to the season's supply of grass cattle, which are expected in larger quantities about the first of May.

A shipment of live lambs was made to eastern points during the week which sets a record for early lamb shipments. There is more or less speculation as to how the shippers will come out in the deal, owing to the age of the lambs shipped. Locally there are enough lambs to supply the present demand, which is to be expected at this time of the year. What will be the condition later, nobody knows.

While we are able to quote last weeks prices on hogs, the supply is more plentiful than it has been in recent weeks and fractional cuts could possibly be made, if the buyers were at all bearish, which they are not. Lightweights continue to arrive in excess of the demand and a severe cutting in price continues with that class of stock.

WOOL.

Some country buying at fractional reductions is reported, one large clip in the Bakersfield district having been contracted for 21½ cents. No contracting is reported from Tehama or Nevada. The Eastern market is fractionally lower, holders making concessions of one-quarter to one-half cent. Good wools are more salable than defective ones, in fact defective wools are not wanted at all except at very much reduced prices. London sales were postponed a week and the forecast is that they will be lower all around. Australian market is also lower.

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higher, as the amount of spot goods in sight is getting low, and there has been a little inquiry in consuming quarters. Nothing whatever has been done in futures at this end, according to local packers, but some have been offering future prunes in the East at a 3½c basis. Such sales at this time, however, can have little effect in establishing values. A chain store corporation has lately made the heaviest purchase of raisins that has occurred in a long time, absorbing all low-priced seed raisins in the principal Eastern markets. The general demand also is increasing, causing a strong feeling in the market; and the general movement of dried fruits into consumption is satisfactory. The New York Journal of Commerce says:

"A little more prompt shipment business in California prunes, held on the Coast, is noted, sales covering a number of carload lots of forties to sixties, in equal quantities, being reported yesterday on a 3¾c f. o. b. four-size bulk basis. There is a more satisfactory movement in prunes out of store, and spot peaches as well as apricots are reported to be getting more attention. None of these goods, however, appears to be wanted in a large way, and while the tone of the spot New York market has hardened somewhat, there has been no appreciable improvement in quotations."

Apples	5 @5½c
Apricots, per lb	6 @10 c
Figs, white	Nominal
Black	Nominal
Calimyrna	Nominal
Prunes, 4-size basis	3½ @4 c
Peaches	3½ @4 c
Pears	4 @7 c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6¾c
London Layers, 3-crown, 20-lb. box	1.25
Imperial Clusters, 6-crown, 20-lb. box	2.50
Bulk, layers, 50-lb. box	2.75

CITRUS FRUITS.

Notwithstanding the upward prices reported last week, they are still better this week with strong, steady demand for both oranges and lemons. Bloods, seedlings, and St. Michaels are averaging slightly better than Navels, largely on account of the predominating large sizes of the latter. Ventilated cars as a rule went lower than those shipped under ice.

On the New York auctions navels averaged $2.35 to $3.55 per box, mostly going over $3, on Apr. 3. Lemons averaged $2.50 to $3. Philadelphia, only, reported lower prices on oranges, where all sales were under $3, as was also true in Cleveland with one exception. Chicago averaged $2 to $2.50 for large navels and $2.75 to $3.25 for medium to small. Lemons $2.50 to $3.25. Total shipments of oranges to Apr. 3 from southern California lagged 1,461 cars behind last season; lemons have excelled last season's shipments to date by 364 cars, yet they are stronger on the auctions than oranges.

Both navel oranges and tangerines have been marked down a little on the San Francisco market, and the demand locally is fairly active at the new level, with some business for northern markets. Grapefruit is a little firmer, as cheap stock is less plentiful.

Oranges, Navels	$1.50@2.75
Tangerines	1.25@1.75
Grapefruit	1.50@2.50
Lemons, box	1.75@3.50
Lemonettes, box	1.25@1.75

HONEY.

Spot values are largely nominal, as there is not enough coming in to establish prices; but it is believed that a small amount of fancy stock should be worth more than has been offered lately, as there is little on hand in this market, and a very fair consuming demand is noted. New honey, however, is expected very shortly, and with a large crop in sight there is no disposition to buy any large quantity now.

Water White, comb	13@15 c
Amber	8@12 c
Water White, extracted	7@ 8 c
Light Amber	3@ 4 c
Dark	2@ 2½c

NUTS.

Almonds are moving slowly now, as the only demand of any consequence is from shellers, and most of them are well supplied so far. The bulk of the crop is cleaned up, but a few scattered lots are still held in the country, and could hardly be sold at the prices recently quoted. Walnuts are scarce and firm.

(Prices f. o. b. San Francisco.)

Almonds (1915)	Nominal
Walnuts (1915):	
Budded; per lb.	17½c
No. 1	14 c
No. 2	11 c
Jumbo	17 c

HORSES.

Local dealers are rather disappointed at the course of the San Francisco market this spring, and no new stock has come forward for the last two weeks. The effects of the increasing use of motor trucks are being felt to an increasing extent, having caused a perceptible curtailment in the local demand, even for heavy drafters, which will hardly bring the top prices that have been quoted. The higher prices of gasoline, etc., may change this before long, especially if hay is plentiful this year. There is no demand whatever locally for light horses, but horses from 1100 to 1200 lbs. are in strong demand for military purposes. Speculative buyers have practically cleaned up such stock from northern California. Local dealers have made some purchases lately for the United States Army, but the number involved was very small.

(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs and up	$ 250
Drafters, 1550 to 1650	150@200
Chunks, 1350 to 1500 lbs.	150@175
Wagon horses, 1050 to 1350 lbs	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@ 75
Farm Workers	50@100

HIDES.

Dry, 15 lbs. and over	30 @31 c
Kip, 10 to 15 lbs.	31 @32 c
Val, 7 to 10 lbs.	33 @34 c
Calf, under 7 lbs.	34 @35 c
Wet Salted, Steers	17 @18 c
Cows,	17 @18 c
Kip	19 @20 c
Calf and Veal	22 @23 c
Bulls and Stags	13 @14 c
Horses, dry, large	$1.25@2.25
Sheep, long wool	1.25@1.40
Medium	1.00@1.25
Shearings	.45@ .55

LIVE STOCK.

(Prices, paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)

Steers, No. 1	7½ @8 c
No. 2	7¼ @7½c
Cows and Heifers, No. 1	6½ @7 c
No. 2	5¾ @6 c
Bulls and stags	4 @5½c
Calves, light	8½ @9 c
Medium	7½ @8 c
Heavy	6½ @7½c
Hogs, grain-fed:	
100 to 160 lbs.	8½c
160 to 175 lbs	8¾c
175 to 250 lbs.	9 c
250 to 325 lbs.	8¾c
Prime Wethers	7½ @7¾c
Spring Lambs, f. o. b. country points	$5.00@5.50
Steers	11½ @12 c
Veals, large	12½ @13 c
Small	13 @14 c
Prime Wethers	13½ @14 c
Lambs	15½ @16 c
Spring Lambs	17 @17½c
Hogs	11 @12 c

WOOL.

(Prices paid in the country.)

Sac'to Valley, year's	19 @21 c
Southern, year's staple	19 @21 c
Southern, six months	17 @19 c
San Joaquin (defective)	10½ @11½c
North'n, free, y's staple	19 @20 c
S'thern Mountain, free year's staple	20 @22 c
Tehama County, free year's staple	20 @24 c

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	28.60	28.00		28.20
" 9	25.33	26.66	26.00	28.10
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	28.66	36.33	28.00	36.66
Feb. 6	26.68	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25
" 20	29.00	32.00	27.16	32.00
" 27	29.10	30.90	27.00	35.25
March 6	27.00	24.08	25.25	24.16
" 13	24.66	29.91	24.00	28.83
" 20	23.00	28.33	22.50	27.16
" 27	22.91	28.50	23.00	28.08
Apr. 3	23.00	28.50	22.23	28.83

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 30	28.16	36.33	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50
" 13	23.00	28.90	25.10	28.00
" 20	23.60	23.66	23.58	20.33
" 27	21.40	20.30	20.80	18.50
March 6	20.50	18.33	19.00	18.00
" 13	20.66	19.50	19.00	18.91
" 20	21.00	20.00	19.66	19.08
" 27	20.83	21.41	18.50	20.83
Apr. 3		21.75		21.06

Publisher's Department

The demand for our new book "Second Thousand Answered Questions in California Agriculture" (Wickson), is very brisk, and notably from those who secured a copy of "One Thousand Questions Answered." The latter is entirely sold out, but the new book is immensely valuable to the California farmer and immediately solves knotty problems he is constantly running up against in his business. The price is $1.50 postpaid, but our subscribers should write for our special offer to them on this useful little volume.

We added 168 new names to our subscription list during the past week.

POULTRY ADVERTISING PAYS.

"At this time I wish to say that I am more than pleased with the results coming from my ad in the Pacific Rural Press, as scarcely a day passes without an inquiry coming and I have made some good sales through parties writing me on account of it. While my poultry business is small, yet the ad has brought me enough to take all the eggs and stock I can possibly supply.

"Maurice S. Woodhams.

"San Mateo."

A. B. Shoemaker of Stanislaus county, who has 600 acres of vineyard, reports that the cut worms are starting to work, and that vineyardists should lose no time to put poison out. He gets best results by using a mixture of 4 gallons water, 16 pounds brown sugar, 1 pound Paris green, and 1 sack bran. The sugar, water, and Paris green are mixed first and then worked in the bran until a mash is found. A teaspoonful placed in the crotch of the vine and one at the roots is the best way.

A campaign against gophers is to be started at once in Stanislaus county by the Stanislaus County Farm Bureau. Poison will be distributed free of charge by Adviser Connor to farmers who will use it.

We would get far better results in olive growing, according to A. S. Clover of Terra Bella, if we would make basins around the trees, fill them with a mulch except a couple of inches around the tree, and irrigate that way, keeping the ground cool and moist and encouraging fine roots where plant food is most plentiful.

Classified Advertisements.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

GAS ENGINES—I can furnish rebuilt Fairbanks, Morse, Otto, Peerless, Samson, Union and other good makes in al sizes. All investigators buy and all buyers are delighted. Pay when satisfied. J. J. Pottinger, 189 2nd St., San Francisco.

ORDER YOUR PRINTING NOW before prices are raised; paper is advancing and printing will soon cost you more; get my prices and save money. Mail orders a specialty. G. C. Gallagher, The Service Printer, 309 Battery St., S. F.

MACHINERY FOR SALE—One Junior Monarch Hay-Press, large bale; one Sandwich Hay-Press, small bale; one I. H. C. 12-25 Tractor. All practically new. Terms to reliable parties. Ceres Hardware and Implement Co., Ceres, Cal.

CONCRETE MIXERS—2 brand-new mixers at manufacturers prices. Write at once. Commercial Iron Works, 481-497 Fifth St., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

IRRIGATION EQUIPMENT—For pumps, oil engines, gas engines, friction clutch pulleys, etc., write us. We can save you money. Commercial Iron Works, 481-497 Fifth St., San Francisco.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

APPLES!—Buy direct from producer. Newtowns, 90c; Bulk pack, 4 and 4½ tiers, equal proportion. No. 2 grade for cooking, 65c. In 5 box lots 70c and 50c per box. Edwd. A. Hall, Watsonville, Cal.

FOR SALE—10 head young, well-broken mules, average weight about 1100 lbs. For particulars enquire Valley Farm & Stock Co., 149 New Montgomery St., San Francisco. Phone Kearny 2735.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

FOR SALE—Used Ranch Tools, Windmills, pumps, engines, new galvanized tanks: 1000, $22.50; 2000, $32.50; guaranteed. Save half. Demmitt Company, 120 North Main, Los Angeles.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds $3.00 delivered. Order with remittance. WM. J. SCHROTH CO., 112-B Market St., San Francisco.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

TREES AND PLANTS.

FOR SALE—Spineless Cactus Plants. Prices right. B. C. Englebert, Byron, Cal.

FRUIT AND ORNAMENTAL TREES and all kind of nursery stock, especially suited to Central and Superior California conditions. Buy from a responsible firm. East Lawn Nurseries, Box 418, Sacramento.

NURSERY STOCK—None better. 2-year-old Navels, Valencias and Lemons, ⅝ and up, 25c, balled or packed in moss. Ask for prices on carload lots. J. C. Johnson, Azusa, Cal.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

20,000 NAVELS AND VALENCIAS—12½c. TERMS, IF WANTED. Large two-year-old stock; choicest ever grown. Lem A. Brunson Co., 1120 Haas Bldg., Los Angeles. Phone F4003.

GRAFTED ENGLISH WALNUTS—A few hundred fine vigorous trees. Two-year-old California Black Walnut roots, one year Concord Walnut graft. Bishop Bros., San Ramon, Cal.

SWEET POTATO PLANTS for April and May delivery. California Yams, $2.25 per thousand, 35c per hundred, prepaid. J. Braswell, R. D. No. 2, Lindsay, Cal.

FOR SALE—Orange trees from selected two-year-old stock. K. Matsuoka, one mile west of Sanger, Cal.

PROFICHI FIGS, 1916 crop for sale. Limited quantity. T. H. Lynch, Box 21, R. R. 8, Fresno.

SEEDS AND BULBS.

WE BUY ALFALFA SEED containing Dodder, Mustard and other noxious seeds. Send us samples of any high or low grade seed you may have; also of mustard, burr and sour clover seed, flax, etc. Signed Mercantile and Warehouse Co., Fifth and Poplar Streets, Oakand, Cal.

SEED BEANS—We have choice Red Mexican and Blackeyes grown on sandy land, producing a heavy crop. Well cleaned and in good order. Write for prices to THE GRANGE COMPANY, Modesto, California.

FOR SALE—300,000 yellow Jersey sweet potato plants. Prices from $2 to 50c per thousand. For information, write Parker Bros., Hemet, Cal.

SEED CORN—Orange County Prolific White Dent, $4.50 per cwt. C. W. Jenkins, Live Oak, Cal.

TEPARY BEANS FOR SALE—Eight cents per pound. Robert Paulson, Lockewood, Cal.

WANTED.

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. R. Humphrey, Principal, Stockton, Cal., Box 704.

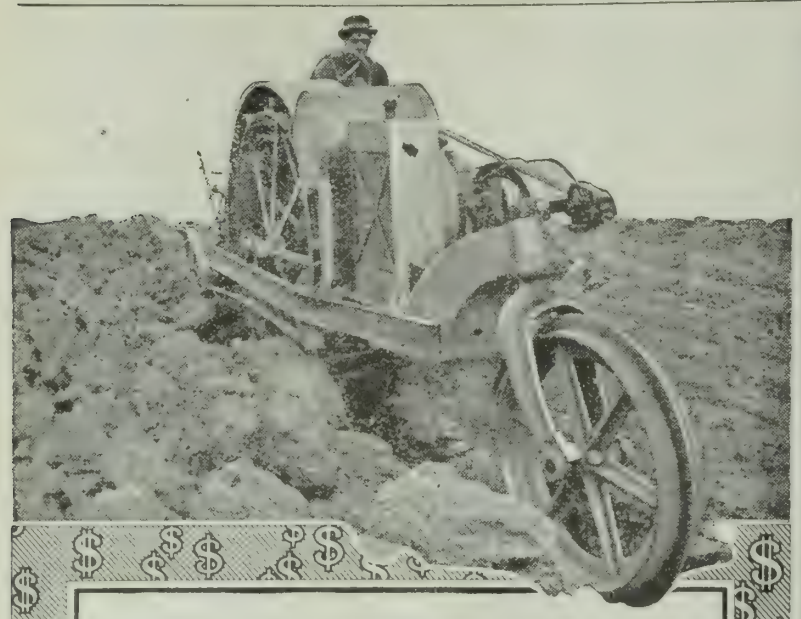
GOOD CHANCE FOR RANCH OWNER, who wishes to plant orchards. Young man experienced in nursery and orchard work; also care and curing of fruit, would like position as manager. Address Box 77, Kelseyville, Cal.

EXPERIENCED DAIRYMAN, married, wants to take charge of dairy, either on shares or wages. J. J. H., Box 22, College City, Colusa County, Cal.

LAND FOR SALE

116 ACRES AT GRIDLEY, CAL.—All in alfalfa. Abundance of water and shade trees. Splendidly drained. Good improvements. Absolutely right and high-class. Owner, Paul Goodloe, Route 13, box 28, Cupertino, Cal.

FREE NEW WHITE BOOKLET—Tells "How," "Why," and "Where" of overlooked STATE, SCHOOL, GOVERNMENT and INDIAN Land Bargains NOW on market. Write JOSEPH CLARK, Sacramento.



BIG BULL $645 F. O. B. Minneapolis

THIS IS WHAT IT WILL DO.

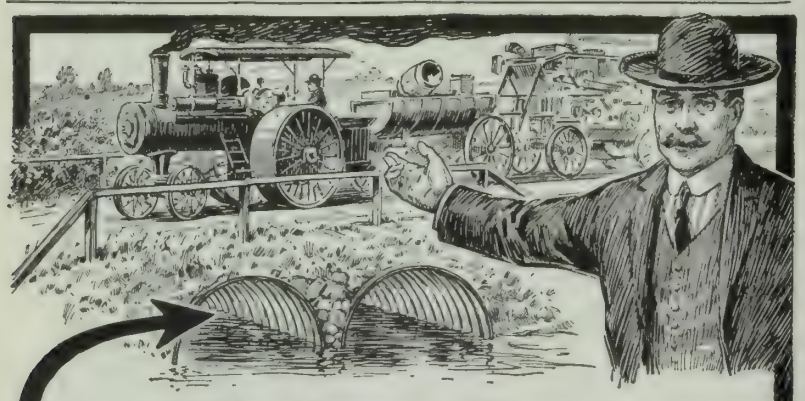
The Bull Wheel runs in the furrow; does not pack the ground; steering wheel also runs in furrow, making steering almost automatic. Has leveling device, direct drive and four gears with special gear-shifting mechanism.

Send for free booklet A.

HUGHSON & MERTON, Inc.

530 Golden Gate Ave., San Francisco.
1229 South Olive St. Los Angeles.
329 Ankeny St. Portland

THE BULL TRACTOR — THE BULL WITH THE PULL — THE BULL TRACTOR



No Danger There!

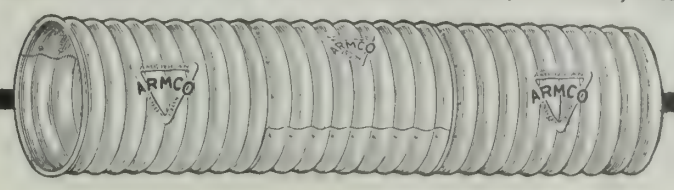
THE weighty tractor, the heaviest threshing outfit—the kind of traffic that does not dare to venture across the ordinary bridge, but is compelled to go a long way round—all these can pass without risk and without loss of time over the road on which are used

"ARMCO" IRON CORRUGATED CULVERTS

In every State "Armco" Iron Culverts have been installed to take the place of dangerous bridges. Years of service have proved them safe. Thousands of installations have also been made on the road-beds of the great railway and traction lines. "Armco" (American Ingot) Iron Culverts are also economical in the long run. Being *pure* iron (never less than 99.84% pure) they resist rust and defy the forces that cause ordinary culverts to deteriorate. They are easily hauled to the job, and quickly installed.

Look for the triangle trade-mark on every section. If you do not find it, the culvert is not genuine "Armco" Iron.

ARMCO IRON CULVERT MFRS. ASSOCIATION, Cincinnati, Ohio



FISK



Non-Skids

—On Your Front Wheels, Too

FISK Tires, with their strong and reliable Non-Skid tread, cost no more than plain tread styles of many other standard makes.

When all four wheels are equipped with Fisk Non-Skids you can drive over rough or wet or muddy or sandy roads with confidence and safety—and the cost is no more than when you use plain tread tires of many other makes.

Back of Fisk Tires is a reputation of seventeen years of leadership—seventeen years of high quality and satisfactory mileage—**you can't buy greater tire value.**

A Special Advantage In Going To A FISK Dealer

More than ***one hundred Fisk Branches,*** covering the entire country, make Fisk Service quickly available to 35,000 dealers. When you go to a Fisk dealer, you can be sure of getting not only value in tire mileage, but through him the prompt attention of the Fisk Branch in your vicinity.

If you are handy to a Fisk Branch you should take advantage of the FREE SERVICE you can get there—changes, inflation, inspection, advice, instruction, and so on—all free to motorists, whatever tire is used.

Send to the nearest Fisk Branch for a price list—compare Fisk prices with the prices of other makes.

THE FISK RUBBER COMPANY

of N. Y.

Chicopee Falls, Mass.



Time to Re-tire?
(Buy Fisk)

Fisk Dealers Everywhere — Fisk Service Branches in San Francisco, 1431-1439 Van Ness Ave.—Oakland, 2418 Broadway—San Jose, 280-282 N. First St.—Los Angeles, 10th & Hope Sts.—Pasadena, 722 E. Colorado St.—Portland, 54 No. Broadway—Tacoma, 725-727 Broadway—Seattle, 910-914 E. Pike St. More than 100 Branches cover the United States—write for complete list.

D

Vol. XCI—No. 16 Forty-sixth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO APRIL 15, 1916. LOS ANGELES

CALIFORNIA STATE

California State Library 7-1-1

Why the Hog Looks Like a Good Bet.

Showing the Hog in His Past, Present and Future Aspects, with Respect to California. How the California Hog Compares in Quality with Corn-fed Pork and Why the Consumer has had a Joke Played on Him.

[Written for Pacific Rural Press.]

CALIFORNIA'S batting average in the pork producing league is about 50 per cent. That is to say, though we consume about $30,000,000 worth of pork and pork products, we produce only about half that amount. Two years ago our average was down to 35 per cent, thus showing a gain of seven and a half per cent annually, roughly speaking, in what we produce over what we consume.

In a business that amounts to $30,000,000 to the State as a whole, a seven and a half per cent gain annually assumes almost boom proportions, yet the rapid increase in hogs has not been a boom. It has been a natural growth which was only to be expected with colonization and which may be expected to follow closely in the wake of all future colonization. The settler on new land requires something that will bring quick financial returns from a small outlay of cash and in this connection the hog is IT.

Of course, the hog-growing army needs more recruits to counterbalance our appetite for pork and to keep at home some $15,000,000 which is now spent on the outside.

Why We Will Grow.—But we cannot afford to be satisfied with an outlook in pork production which is limited to our home consumption. Already we have enough developed land and enough people on it to bring production up to consumption, once they get started, and they're starting and will continue to start for the following good reasons:

In the past few years we have been adding cog after cog to an immense machine, capable of doing hog promotion work on a large scale. We have swine breeders' associations in various counties, hundreds of purebred breeders instead of tens, who are always good distributors of the hog germ, a State central organization which has just begun to get accustomed to working clothes, farm advisers, representatives of the University, packing house interests and the general agricultural press. All are preaching the hog faith and have been and will continue to be factors in more and better hogs.

What is the significant thing about this movement? Simply this. Fruit raisers, alfalfa growers and general agriculturalists are getting into hogs. And they are going to get in faster, with all of the above named forces concertedly driving home stories of profitable production, than was possible a few years ago with a few professors, a few breeders and a few agricultural papers preaching at them.

Railroad men and others familiar with immigration problems maintain that there is a larger background to this hog movement than most of us see. They believe that with a more general recognition of the California hog by Californians there will be a more general recognition of California as a place to grow hogs by Easterners who are prospective developers of our undeveloped lands.

So far we have endeavored to present the hog from the producer's standpoint, showing his desirability on the farm and why we believe his numbers will be greatly increased in the next few years. Surely there is no disputing the fact that at the present time he is in excellent repute with the farmer.



The strongest claim for the quality of the barley-fed hog lies in the fact that when sold under a corn-fed brand the consumer lauds his superior merits.

Consumers Balk. — Curiously enough, the same condition does not hold true with the consumer. The hog in his most finished stage, cured meat, is one home product that Californians are not loyal to. You can get them to demand a box of crackers carrying the "Home Products" seal, in order that their nickel may be kept at home, but try to sell them California bacon or ham and they balk.

Is this then the serious fault with our hog industry? Are they so poorly bred or are feeds so badly at fault that our own consumer will not eat them in the cured stage? This is the question for the California hog man to answer, for no such expansion as above outlined can occur unless our packing house industry is greatly increased. We can raise hogs but only to the extent of our fresh meat consumption if the charge be true. If, on the other hand, our consumers are under a misapprehension, then our opportunities for marketing pork and pork products are unlimited.

The charge that California-fed hogs do not make good cured meat is not a new one. It originated a great many years ago and at that time was partially correct. Since then it has been a tradition handed down from one generation to the next in such a consistent manner that even many of those who want to think well of the local product are dubious.

The Original Kick.—One of the State's oldest retailers recalls the condition in this wise: "Years ago the only kind of pork we handled in a cured or pickled state was a soft, salty product, so full of brine that you could scrape it off with your finger nail, and taste salt pork for a week after eating a piece of it. Then a few shipments of Eastern-cured hams and bacon reached here by mail. The comparison was too great. The best trade soon came to demand an Eastern ham or bacon and we were glad of it, because it's a lot

(Continued on page 499.)

Grapewild Farms Berkshires



GRAND LEADER 2ND, No. 190,377.
Winner of the Grand Championship at the Panama-Pacific International Exposition.

SIRE OF STAR LEADER, who won **Junior Championship** and **Reserve Grand Championship** at the same show.. **STAR LEADER** is now at the head of the **CALIFORNIA UNIVERSITY FARM HERD** at Davis.

GRAND LEADER 2ND is also sire of **MAYHEWS LEADER 6th,** a prize-winner at the P. P. I. E., of whom L. E. Frost, Editor of THE BERKSHIRE WORLD, said: "He is one of the best to be found in America and will, without question, make a great sire." This young boar now heads the herd of **BUTTE CITY RANCH,** one of the largest and best selected Berkshire herds on the Coast.

GRAND LEADER 2ND also won first and second with six of his daughters for Sire and his Get. This is the most highly valued of all the trophies to most breeders, and is particularly so where the sire wins Grand Championship honors. In this connection, Judge Scott, who judged the Berkshires, said: "The real test of a breeding boar is in the kind of off-spring he produces, and here are a lot of animals (speaking of the Get of Grand Leader 2nd) that are superior individuals, as like as peas and a wonderful demonstration of the ability of a great individual to reproduce himself."

After six years of careful breeding, during which time steady improvement in quality has been our aim, we now have 75 Brood Sows, rich in the blood of every famous Berkshire strain. With Grand Leader 2nd at the head of this herd, not only himself a **Champion,** but the sire of **Champions,** and with several other Boars of prize-winning strain, we believe we are in a position to give you the best to be had in Berkshires. Satisfaction guaranteed. Stock of all ages for sale.

GRAPEWILD FARMS. A. B. Humphrey, Proprietor
ESCALON, SAN JOAQUIN CO., CAL.

(Escalon is 22 miles east of Stockton on the Santa Fe and also on the Tidewater Southern Rys. Autos take paved Mariposa Road out of Stockton direct to Escalon.)

DAGGS' BLUE RIBBON HERD
of Registered
Duroc Jersey Hogs

HERD HEADED BY DAGGS' GOODENOUGH 4238906, MODESTO KING 117719 AND BROOKWATER GOLD MODEL III, 468308.

These three boars weigh 2080 pounds and are the largest and smoothest in the State today.

MODESTO KING HAS NEVER BEEN DEFEATED IN THREE CALIFORNIA FAIRS, 1912, 1913, and 1914.

He is the sire of Lamb's American Beauty, Grand Champion Sow, California State Fair 1914.

DAGGS'S GOODENOUGH IS THE SIRE OF THE WORLD'S JUNIOR CHAMPION SOW, SAN FRANCISCO, 1915, and stood first in his class at California State Fair, 1914.

Now Booking Orders for 135 Spring Pigs

I am now booking orders for pigs, sired by these great boars and out of first and champion sows, California State Fairs 1912 and 1913. These sows weigh 400 to 720 pounds, and both they and the pigs are as choice a lot as can be found in California or the East today.

NOT A STUNTED ANIMAL IN THE LOT. ALL RUNNING ON SELF-FEEDERS AND ALFALFA PASTURE.

Be It Litttle or Small, We can Fill Your Order.
Write for Particulars To

John P. Daggs
MODESTO, CALIFORNIA.

Billiken Herd
—of—
Improved Chester Whites

Representing the Best Blood Lines the Breed Produees.
Nothing to offer for immediate delivery.

SOWS NOW FARROWING.

Booking orders for weaned pigs to be shipped during late May and June.

Cholera Immune; Registered; Absolutely First Class.

C. B. CUNNINGHAM
Mills, Sacramento Co., California

Rancho Rubius Durocs

according to winnings at last State Fair and World's Fairs, are the

BEST SOWS IN THE STATE

Weaned pigs, large litters, now ready.

$15.00, either sex.

Elmer Lamb Ceres, Cal.

THE HOME OF CHAMPION : : Berkshires

RIVERBY PRINCESS—211634—
Grand Champion at the World's Greatest Berkshire Show, P. P. I. E.

AME'S RIVAL 102—210054—
First prize boar under six months and Reserve Grand Champion P. P. I. E. (A son of Artful Duke 32nd, who was Grand Champion at 1911 International; his dam Rookwood Baroness 18th sold for $680 at Berkshire Congress Sale, York, Penn.)

CHARMER'S DUKE 77TH—186329—
Grand Champion, any age or breed, Missouri State Fair 1912, and was third at P. P. I. E., weighing 830 pounds in breeding condition.

I HAVE OVER 200 HEAD IN MY HERD.

A SPECIAL DRIVE

50 Yearling Boars, $50 each. 100 Weaned Pigs, $25 each.
WRITE OR CALL.

FRANK A. BRUSH, SANTA ROSA, CAL.

KNOB HILL STOCK FARM
Registered Big Type Poland Chinas : : :



SOME TYPICAL KNOB HILL BROOD SOWS.
(Large type, combined with high quality.)

Our herd is nominated in the California Poland China Futurity to be held in connection with the State Fair this fall. We have just imported and added to the herd some of the best blood of the East, including boars from W. J. Hather, Ord, Neb., and Peter Mouw, Orange City, Iowa.

We are offering pigs of both sexes from prize-winning stock. Litters coming at all seasons and stock usually on hand to suit customers.

Come and see them, or write for what you want.
ALL STOCK REGISTERED. ALL BREEDING GUARANTEED.

A. M. HENRY, Prop. Farmington, Cal.

Large Yorkshire Swine

50 Choice Gilts, open or bred.
20 Yearling and Fall Boars at attractive prices.
You are at liberty to return what we ship you at our expense if price and quality not satisfactory.

RIVERINA FARMS, Paradise Road, Modesto, Cal., **OR** **BOX 2250,** San Francisco, Cal.

Pacific Rural Press

SAN FRANCISCO | APRIL 15, 1916. | LOS ANGELES

A New Dawn for the Purebred Hog.

Some Sidelights on the Purebred Hog Drama in California, as Presented by Some Thousand Breeders and Recorded by an Onlooker. California is coming to be a Leader in Purebreds.

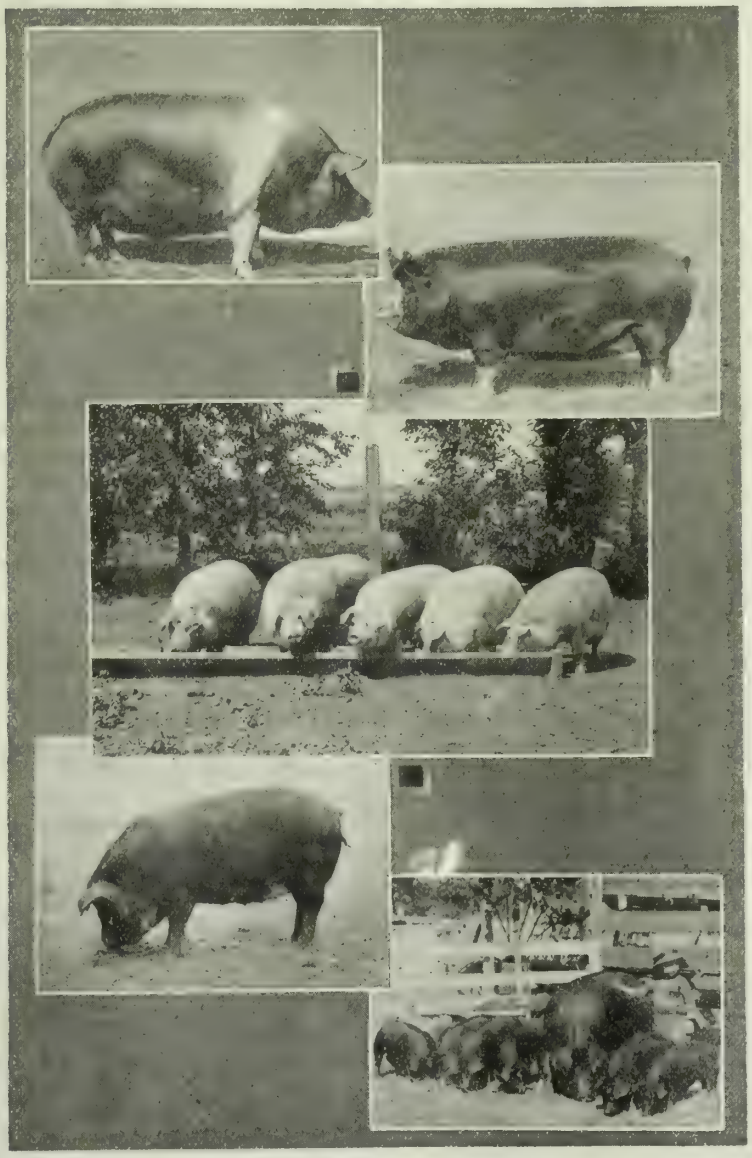
[Written for Pacific Rural Press.]

CONDITIONS change. To everyone at all familiar with the purebred hog industry in California this must be apparent. The history of purebred hogs here dates back a good many years. It was about that time that the industry began to be concrete in nature, to the point where you could go into almost any community and find some advocate of the registered hog.

The vision of most breeders in those days was not very large. It was recognized that the business of raising hogs for breeding purposes was a growing one and it was generally conceded that it paid better than raising grade animals for market. The farmer's trade in service boars for grade herds kept the available supply so low at all times that no difficulty was experienced in selling, and no one thought of making it his business to expand the market to outside States or territories. Thirty dollars was a good fair price and the average one for a service boar to both breeder and customer, so why worry?

A National Happening.—The condition continued till a show of national importance loomed up right at home. It was expected that our hogs must compete with the best in the country, and older breeders as well as younger ones pricked up their ears and began a still hunt for something out of the ordinary.

And after months of preparation the whole flock and posse came down to San Francisco. not, as it transpired, to compete with the middle westerner in person, but with an astonishingly large number of hogs bred in the middle west. The result, as we all know, was that a good show was put up, some characterizing it as the best in the history of the whole country. Over-night, so to speak, the situation changed. The slow plodding work of previous years was shown to be constructive. While breeders had been growing hogs for the farmer, at farmers' prices, they had also been breeding the type that would command respect in the most fashionable company anywhere.



"The hog-grower must be helped to realize the importance of producing the largest amount of marketable pork at the least cost, and then work to get the highest price for it."

Although the Easterners lauded our efforts before the judging, it was after the awarding of prizes that prices pyramided. The day before the judging a hog might be worth a hundred dollars at the very most. The next day his value ran up to $1,000 in at least two instances, and when nearly 50 animals sold at an average of $150 a head in the public auction ring, the old order changed forever.

The New Order Enters.—Here was the parting of the ways. The game immediately expanded to unthought of proportions. You could play it whichever way you liked; to the farmer trade with its steady demand for good serviceable animals at a good fair price, with an outstanding animal sandwiched in now and then at a fancier price to some other breeder here or elsewhere, or, you could sit into the game where the ante was higher and where the stakes meant the selling of your best stock to breeders all over the country, the more ordinary ones finding an outlet at lower prices to the pork producer on the farm.

On the one side you could continue to be of service to the State by placing more purebred sires at the head of grade herds. On the other you could be of service by promoting the California bred and raised hog among breeders of other states as well as at home. With approximately one thousand breeders in the State, the transformation of ideals was necessary and very desirable. At the rate we have been growing in this business the time is approaching when there would not be room for everybody if everybody was playing to the home crowd. Developers of outside markets were necessary and now that we have them we can continue to grow without fear of a reaction setting in.

Work to Do.—But it would seem a mistake for either division to lie back in peaceful slumber and let the boat rock at will. She is well built to weather storms, but the rudder must be held steady.

The work of the contestants in the higher ante game seems to be well cut out for them. They must not only lend support at home but develop and maintain markets abroad. They must make the California purebred hog known in distant states and countries by breeding and selling better hogs than are produced elsewhere.

This is all possible, for the Exposition demonstrated, what many have long maintained, that our feeds and long growing season combine in making a superior hog and this is particularly true of young animals, the kind that are most useful for exporting purposes. It was common comment of Eastern breeders and judges that the California hog is supreme in the matter of maturity. California must show the world, in a constructive way, that we produce a supreme hog in every respect and members of this division of the breeding craft are the ones who must do it.

But how to steer the course at home is, after all, the big question. In comparison, the above-named gentry are almost inconsequential in numbers. The great majority of breeders are dependent upon the farmers' trade, the trade that is after all the real backbone of the entire industry.

The Home Trade.—He may, at times, get one foot into the higher division, with some outstanding animal, and that is what makes the game interesting, but in the main he must cultivate his home trade, at least for the present. And the sooner he accepts the condition the sooner he will be successful. If he has learned his lesson he

(Continued on Page 494.)

Valuing Young Orchards.

A Suggested Method of Estimating Value of Orchard, Year by Year, from Planting to Maturity.

[Written for Pacific Rural Press by Prof. R. L. Adams, University of California.]

"In your farm valuation work have you arrived at figures for determining increment of value of young fruit trees up to bearing? That is, how much is a two-year-old worth more than a yearling just planted, a three-year than two-year, etc.?"

In offering an answer to such as the above, which you submit to me, one needs a good deal of courage in view of present land values. The matter is open to a good deal of discussion and I for one should be glad to hear from those who feel qualified to pass judgment. The following is offered as the result of personal investigations, and is not necessarily final. It will, however, serve as a basis for dissection by all interested.

It seems to me that four things enter into the increasing value of land year by year.

First, one should secure the market value of the undeveloped land plus all expenditures of time and capital to clearing, leveling, grading, preparing for planting, providing irrigation facilities, and all other improvements pertinent to the care of the orchard.

Second, as year succeeds year, the owner is entitled to actual expenditure of all labor and cost of cultivating, pruning, spraying, irrigating and the like, including a reasonable sum for management.

Third, a sum sufficient to cover interest and depreciation of capital at a fair rate should be included.

Lastly, the owner should receive a sum for his initiative in starting and carrying on the work.

Since something in the way of receipts will be secured from intercropping and the early yields of fruits, these returns should be deducted from the cost of the orchard during the current year in which they occur.

The sum which shall be paid for initiative is the most difficult of determination. Perhaps the best possible method is to pro-rate the difference between the point when maximum cost occurs and the value of well-established mature orchards over the number of years required to bring the orchard to maturity.

An example will indicate the line of reasoning:

The life of an assumed apple orchard is divided into three periods.

(1) Period from purchase of raw land until trees begin to bear.

(2) Period from commencement of bearing to maturity.

(3) Period from maturity to old age.

In the absence of specific data figures are assumed for purposes of illustration. They are not to be taken as absolute guides.

The cost the first year is:

Apple orchard	Per acre
Raw land	$100
Clearing, grading and leveling	40
Irrigation	(Not required)
Trees, setting out and replanting misses	15
Care, 1st year	12
Management	12
Taxes	2
Total	$181
Interest on money at 7 per cent	13
Total cost 1st year	$194
Less profits from intercrop	25
Net cost 1st year	$169

In the same way the costs are added year by year, including costs for management and interest and reduced by receipts from intercrops and fruits, resulting in about as follows up to the twelfth year, when maturity is assumed. The trees bear a few apples at five years, and are producing enough to pay operating costs by the eighth year.

At the end of each year, including the first, the cost per acre may be assumed to be respectively, $169, $184, $206, $247, $293, $332, $365, $386, $400, $391, $358, $300, and $238.

The investment at the end of the eleventh year—when the trees are in bearing is $358. Yet the market value for orchards of this kind is, let us say, $600. The difference between $600 and the point of highest cost (reached when interest and operating costs have piled up to the highest point and receipts not increasing proportionately) of $400, is practically $200.

This $200 may be considered as payment for one's initiative in setting out the orchard, caring for it, and keeping it free from insects and disease. By prorating this $200 over the eleven years passing from planting out until maturity, the real worth of the orchard per acre, in round numbers will be at the end of each year respectively, beginning with the first: $190, $220, $260, $320, $385, $440, $490, $530, $560, $580, $600, $600, and $600.

Berkeley, Apr. 8.

Planted Apricots in Johnson Grass.

[Written for Pacific Rural Press.]

One man can kill 40 acres of luxuriant Johnson and Bermuda grass in three months. Only the seed will grow afterward; and they may be kept down with ordinary cultivation if they are not allowed to grow large enough to make the underground stems.

This is the experience of "Dave" Porter of Kings county.

A five-acre patch of old alfalfa was badly infested with Johnson grass and a few small areas of Bermuda. He plowed it under, in 1908-09. Barley was sown and cut for hay in May or June. The field was irrigated, and pumpkins planted. Johnson grass grew so high that travelers on the road did not know Mr. Porter was in it and hearing them talk about his shiftlessness. He mowed the grass in the fall. Next spring he dug holes for apricot trees. The holes were made three feet in diameter and two feet deep to get below Johnson grass root stocks.

In planting the trees, instructions were given to keep all Johnson root stocks out of the holes, no matter how long it might take. It cost a lot, but was worth while.

Then the field was plowed 12 inches deep, "rolling up the sod to beat the band." After cross-plowing he tried to keep it worked down with a 6-foot straight-blade weed cutter. This clogged up so that he got a Planet Junior cultivator. This consists of seven V-shaped "sweeps" 10 inches wide but alternately behind each other and overlapping so the machine works a strip four feet wide. This would let the sods and roots slip by, but kept them stirred.

The new orchard was cultivated in opposite directions every four days through three spring months while Johnson grass wanted to grow. The five acres required half a day each cultivation.

It was a lot of work, and Mr. Porter became discouraged after a couple of months. But one day he picked up and broke a rootstock. The color inside had changed to brown.

"I knew I had it going then, and didn't let up."

At the end of three months all the root stocks were dead. Since then, seeds sown previously have been coming up every year, but so long as they have developed only the fibrous roots, they yield to cultivation like other weeds. The Bermuda also was killed.

CONTROL SAP TO AVOID COULURE.

[Written for Pacific Rural Press.]

"Control sap flow in order to set your crop of grapes," is the slogan of Frank Henry of Fresno, whose success in producing fruit instead of wood, with less strain on the vine, is still doubted by some; though everything promises well for this, his second year in public notice.

Dropping of blossoms without setting fruit is perplexing all who work with grapes. This is unnecessary, according to Mr. Henry. Excess of sap at blooming time causes it. To reduce sap flow at this time, dry out the roots. Let sap start the shoots, cultivating lightly if necessary, to save moisture enough to plow when they are well started.

Then plow, as A. B. Cates is doing in the same county, 10 to 12 inches deep with about three furrows through the center, then throwing dirt away from vines by two rounds with a single plow. This cuts surface roots and dries out the crown. They may be cross cultivated before blooming, but no irrigation will be applied until June. The late plowing permits growth of vegetation, too, which is sorely needed in Fresno county for humus. This also helps to dry the surface soil.

"Few buds start, if you weaken the vine by cutting surface roots with a plow just before the buds open. When the roots which were cut off have made their second start, the few buds that open will have made such growth that they draw all the sap; and the other buds remain dormant so you lose the crop.

"By letting the vines make an even start with many buds, then plowing deep to cut the surface roots, assist the vine to set a crop, by light sap flow at blooming season. After blooming the second growth of the roots will support the crop."

Stanislaus peaches promise a normal crop of most varieties.

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Past Walnut Season Gratifying.

[Written for Pacific Rural Press.]

Total shipments of walnuts from alifornia the past season were 14,-00 tons, of which the California Valnut Growers' Ass'n shipped 9,200 ons besides 1,250,000 pounds of uts which were cracked and sold in he form of 500,000 pounds of meats, cording to Ass't Mgr. H. Zander of he Association. All of the crop has een sold.

Walnut Meats Introduced. — The alifornia walnut meat business is st beginning in Eastern U. S. where rench meats have heretofore held ractical control. Our shipments the ast season have been of amber eats, because they could be sold at lower price than the French white eats. Our white meats will prob-bly be sold in the East next year, hough our cost of production, espe-ially labor, is far greater than that n France. The percentage of Cali-ornia white meats last year was mall, anyway, on account of the hot pell which darkened them.

Carload shipments of amber meats ere made to the Middle West this eason, and the quality was equal to that of the French nuts; while the Eastern representative of the Ass'n said the flavor was better.

Cartons Continued.—The 14-oz. Diamond brand cartons for unshelled nuts will be continued, though re-tailers have been slow to take hold of them. They have to be shown that their profit on cartons is greater because their loss is less. The car-tons contain guaranteed nuts, so they bring steady demand after being introduced to patrons.

With nuts displayed in bulk, the store keeper cannot object when his customers take two or three casually, yet two or three make an ounce. At the holiday season, when the clerks feel happy, they often add two or three to the pound, so the shrinkage on a sack is very appreciable. The time used in sacking and weighing small orders during the rush holiday season is also a point in favor of the cartons. The response of retailers who have seriously undertaken to handle the cartons has been most gratifying to the Walnut Growers' Association.

Lime-Sulphur Grapes in Spring.

[Written for Pacific Rural Press.]

Lime sulphur spray on Muscat rape shoots up to 8 or 10 inches ong has been practiced two years y G. A. Ritchie of Hanford; and his year about April 10 to 15 he ill spray all of his own 75 acres nd about 225 acres of his neigh-ors' who have already ordered it. he lime-sulphur is diluted 1 to 75. n his first experiments, damage re-ulted from too strong a mixture. he 1 to 75 dilution has never in-ured the vines except as he wanted hem injured.

As already explained in Pacific ural Press, pinching off the tips f shoots soon after the forms of unches appear, throws the sap into hem and makes bigger bunches of igger berries, besides starting lat-rals for a very early second crop. Mr. Ritchie claims to accomplish the ame result by the spraying, besides iving mildew its first preventive ttack. This strength of the Or-hard Brand spray, which he pre-ers, kills the tips of shoots and the mallest two leaves. It would not urt the forms of bunches, says Mr. Ritchie, if they were dipped in it, or they have a felty covering.

Prevents Mildew.—Spraying thus arly is also done to prevent mil-dew, not to cure it. The same trength is applied again about May 0. From May 15 to June 10, the rapes are blooming for the first rop and must not be sprayed. As oon as blooming is over they are sprayed again. Then the second crop is blooming for about two weeks and everything is sprayed again in July—always using 1 to 75 strength and a power sprayer.

As the effect of dry sulphur is best when it is spread so evenly, thinly, and uniformly that it cannot be seen at a little distance, the lime-sul-phur coating the leaves, canes, and fruit, produces the same effect more surely and permanently. Mr. Ritchie is experimenting with the soluble atomic sulphur for mildew on a block of 600 vines this season.

POINTS ON PROCESSED PRUNES.

To the Editor: In your issue of April 1 Mr. Shelley comments on the present unsatisfactory method of processing prunes.

Unfortunately Mr. Shelley doesn't differentiate between a dry pack and a wet one. It is nonsense to say that the processing cooks them. Passing a prune through water at about 212 degrees Fahrenheit, for three minutes, doesn't cook it.

At our local Farmers' Union pack-ing house we put out a dry pack. This is accomplished by not allow-ing the prunes to remain in the water too long, and by passing them over a long draining board. Our last year's pack is in perfect condi-tion.

It is true that the sugar in dried prunes will deliquesce in tropical climates. This can be overcome by special containers.

It is true that some packers put out a wet and consequently a perish-able pack. But this fact does not justify Mr. Shelley in classifying all packs as such and impressing the people with the idea that all proc-essed prunes are alike.

Gilroy. **W. Ralph Thomas.**

Curl leaf has injured the peach crop of Fresno county and else-where.



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Growers Pack and Market Own Olives.

[Written for Pacific Rural Press.]

The growers were up against it. They had a 300-ton crop of olives coming on, and no one would buy them. That was last fall and around Hemet.

The California Growers' Ass'n was one of the few California olive packers which had more orders than olives. It is a non-profit organization of the growers of canning fruit with locals at several fruit-growing centers in the southern half of the State.

The Hemet growers asked to be organized as one of the locals so that their olives might be processed and marketed. Those controlling 1200 acres of canning fruits got together and organized the Hemet-San Jacinto Growers' Ass'n last September. They began to build an olive pickling and canning plant Nov. 20. This cost $5,000 for plant and equipment. It was built next to a laundry, from which they now get steam and power. The veteran ripe olive canner of the State, J. A. Campbell, installed and supervised the running of the plant during its first season.

When the plant was visited Feb. 22, there were 80 tons of ripe olives in process. Some 60 or 65 people were being employed. Plans were already made for a $40,000 separate plant to be built in March, 1916, when they would dismantle the present one. They expected to have 2000 acres in the Association by the time the plant should be completed.

In whatever direction one would ride into the country, it seemed like nearly every house had the big sign on a tree or post in front, reading "Member Hemet-San Jacinto Growers' Ass'n." That system of advertising the organization, invented by R. G. Spencer of the San Antonio Growers' Ass'n, has a good effect on the members, as well as on their wavering neighbors.

Continuous Canning. — Olives are canned from early November to early April. Honey will be put up during April and May, then apricots and peaches until nearly time to start olives again.

Only ripe olive pickles and olive oil are produced—probably 3,000 gallons of the latter during this season. Missions and some Manzanillos only are canned. Ascolanos would be harder to handle; make soft ripe pickles which lack flavor.

All pickles are graded into the standardized grades of the California Growers' Ass'n. This is done under supervision of Mr. Campbell for the central organization, so that all goods put up under their label may be uniform in each grade.

They are sized by a machine, graded for softness by hand, and for flavor by experienced tasters. All of this is done, not before they have gone through the lye process as was originally done, but afterward. It has been found that size makes no practical difference in the time required for the lye to penetrate barely to the pits, when they are taken out. Light grade caustic is used, to avoid mushy olives.

There are only three size graders in the State like this one, according to Mr. Campbell. It does not bruise the fruit. A rotary toothed cylinder lifts them over from a hopper into a tank of water. Under the surface of the water is a slat bottomed tray with the slats farther apart at one end than the other. This is lifted just out of the water and forward at the same time by a rotating arm, so that the larger olives are carried easily forward away from the others.

The standardized pack of only ripe olives, and the efficient marketing through the central organization bid fair to greatly increase the demand for a brand which is fully as good as the highest priced, yet designedly sold at a lower price. The lower price is made with the idea of increasing consumption, to furnish a market for ever-increasing crops, at good prices to the grower.

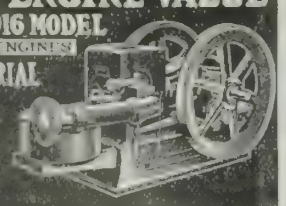
One of the members, M. B. Moulton, is responsible for the statement that for the six different sizes, the growers are getting $60 to over $200 per ton.

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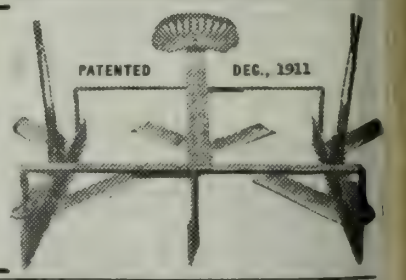
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To Effectively Control Grape Mildew.

The increasing prevalence of powdery mildew on grape vines is yearly causing greater loss to California grape growers. As the vines grow older and larger with a greater amount of thick foliage and more fruit, control of this disease by past methods of practice does not, in all cases, give satisfaction or economical results.

Several hundred acres of grape vines, both table grapes and wine grapes, in irrigated and non-irrigated vineyards, including old vines and young vines in San Joaquin, Sacramento, Solano, Tulare and Fresno counties have been sprayed during the last two years by practical grape-growers, who are successful and who obtained economical and profitable results by the use of Atomic sulphur.

The sulphur in this preparation is not in chemical solution, but is in very finely divided state in thin paste form, which dilutes readily in water, giving an effective adhesive spray that will remain active and give protection to fruit and foliage for the greatest possible length of time. It should be applied with a spray machine giving good pressure, preferably a power outfit or the best grade of large hand pumps capable of maintaining at least 150-pound pressure—preferably 200 pounds. Use large chamber type angle nozzles on the ends of suitable rods so that the underside of all leaves and young canes as well as the crown of the vine can be thoroughly covered.

DIRECTIONS.—Dilute and thoroughly mix Atomic sulphur with water at the rate of 12 pounds for each 100 gallons of spray. Make first application on grape vines well before blooming, that is, when the first young shoots are from 9 to 18 inches long, and thoroughly wet the entire vine, leaves and leaf buds with the spray. The second application should be put on as soon as the grapes are through blooming and the berries have set (if vine hoppers are present add Black leaf "40" at the rate of 1 pint for each 200 gallons of spray.) Carefully cover the under surface of all the leaves, the entire surface of all the canes and new shoots, and particularly all berries and stems in the grape cluster.

One acre of vines will require from 150 to 300 gallons of dilute spray per acre for the first application, and 200 to 400 gallons for the second application, depending on the size and number of vines per acre.

Full information furnished on request.

General Chemical Company

201 SANSOME ST., San Francisco.

S. W. FOSTER, Entomologist.

IRRIGATES VALENCIAS BI-MONTHLY.

[Written for Pacific Rural Press.]

"We irrigate our Valencias only once every 8 or 10 weeks," says C. C. Chapman of Fullerton, who has probably done as much as any one man to boost Valencia oranges. "We don't like to irrigate as much as most people do. It ruins trees to water so frequently. It leaches, bakes, and kills the soil."

Mr. Chapman's soil is a more or less heavy sandy loam, deep, and far down to the watertable so the latter has no effect.

"Don't the trees suffer and the leaves curl up?"

"No."

"Why?"

"Cultivation — that's our hobby. Here we are plowing this block (March 11) crosswise, having already plowed it once lengthwise of the checks. We will let it lie a while rough (but mellow) because we always have some more rain. It will catch and hold the rain. Then we will spring-tooth it—maybe before. We like the spring-tooth best. We plow deep, and we never cultivate with less than four mules on a harrow 8 or 9 feet wide."

"Doesn't such deep cultivation tear up a lot of roots?"

"We don't think so. If we were irrigating all the time the roots would come to the surface as they do in most orchards, and some of them would bake between times. We get our roots deep down and keep them there by deep cultivation, and keep the ground moist underneath by the same means.

"We wait until after the fruit is set, if possible, before applying the first irrigation."

A rice experiment is being fostered on 22 acres by farmers around Millar Station, 20 miles south of Sacramento. A man has been placed in charge who will take care of the land at all times, writes L. H. Rodebaugh of the Oakland, Antioch & Eastern Ry. J. W. Mills, Solano County Farm Adviser, will have charge of the scientific part of the experiment. The Oakland, Antioch & Eastern Ry. has donated a large pump; and a well 81 feet deep with water 4 feet from the surface has been sunk. It is expected that rice will do very well in this part of the country. Planting will commence in a very short time under the jurisdiction of Mr. Mills and other farm experts and the results of the experiment are being looked forward to with great interest.

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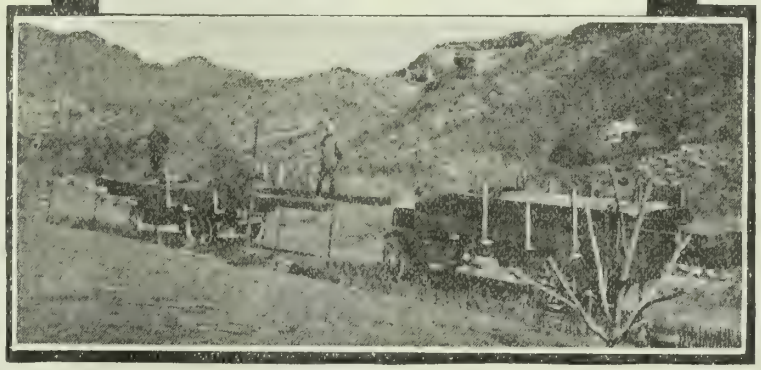
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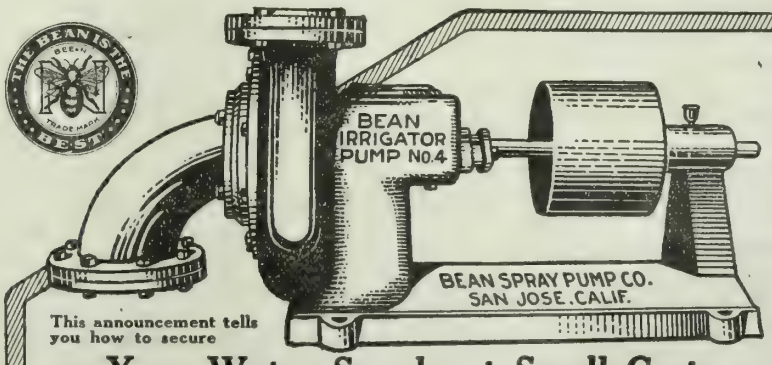
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A Shot at Home Rule on the Sacramento.

To the Editor: Colonel Irish has come out with a diatribe against the proposed act of Congress known as the "Newlands" act. The statements made by him are so far from being correct and the provisions of the proposed bill are so grossly misrepresented that it is but meet and proper that the facts should be fairly stated lest your readers be influenced improperly by the erroneous statements of Colonel Irish.

To take up the misleading statements of the Colonel seriatim would be too tedious as it would involve practically every statement made in his article. To mention a few of the most grossly misleading will suffice to classify the remainder. The Newlands law does not propose to do away with the work of improvement now going on, nor to interfere with it in any way if it has any merit, and I challenge Col. Irish to find a word or a line in the proposed act to justify his statement. The Newlands law does not propose to reservoir any specified quantity of flood waters of the Sacramento valley, and when it is stated that any specific thing was to be done under the Newlands law, that statement is wholly untrue for the simple reason that the act has not been made a law yet and no one has a right to say what will be done when it becomes a law.

Colonel Irish's statement that this is the first attempt to improve the Sacramento river is fully as misleading as his other statements. It is, however, the first attempt to hitch a private reclamation scheme onto a plan for assisting the improvement of the navigable character of the Sacramento river and it is this feature of the plan which has commended it so highly to the eminent editorial engineers who are so vehement in its behalf and so bitterly opopsed to the Newlands law because it proposes to take this whole vast question out of the domain of petty politics and private interest and turn it over for solution to a body of men chosen to solve it because of their ability to do so and because of their being entirely disinterested.

To those of your readers who may be unfamiliar with the provisions of the Newlands act I wish to explain what it really proposes. It is a proposed national law to take the rivers and harbors of the country out of politics; to destroy the pork barrel; to substitute for the present system of securing appropriations for ponds, creeks, and non-existent harbors a system by which this government will only spend money upon prospects that have merit and are of general use. It proposes to have all the various prospects considered as units. Every man who has studied our local problems knows that in order to secure the best results many things must be considered at the same time. The improvement of our navigable streams demands the consideration of questions of storage, reclamation, irrigation power development and conservation of forests. This the Newlands act proposes to place in a position to be handled by the same men at the same time. It should be enacted. Our river work should be taken out of the hands of the editorial and political engineers and placed in charge of real engineers of established reputation and acknowledged ability.

The writer has had a more active part in the work of improving the great waterways of California than any other civilian. It has been my observation that the greatest obstacle to the improvement of the Sacramento and San Joaquin rivers has been the constant efforts made by representatives of private interests to so shape the work as to lead to their personal aggrandizement rather than to the common good.

Every man in California who has at heart the best interests of our rivers and harbors will lend his influence to assist in having the Newlands act made the law of the land, Col. Irish and the corps of editorial engineers, and the various beneficiaries of existing projects to the contrary notwithstanding.

Esparto. **H. J. Corcoran.**

[We prefer not to have discussion of this subject continued at this time. We have allowed each side to call the other "politics"—and that is about the limit of the vocabulary. Even if we acknowledge that Mr. Corcoran is supporting a perfectly rational academic scheme for the control of all American rivers, from the Maumee to the Yukon, it is not necessary to urge it now. It may have a thousand years to run and Sacramento might get in the first century and it might not. On the other hand there is a way to have something dong on the Sacramento at once, as this dispatch indicates:

WASHINGTON, April 6.—Flood conditions on the Sacramento river will be cared for in the general bill being drawn to cover conditions on the Mississippi. The new flood control committee of the House of Representatives will vote on the bill within the next few days. The measure proposes an expenditure of $45,000,000 for the Mississippi and $5,800,000 for the Sacramento.

The latter appropriation will be spent in co-operation with California state and district reclamation appropriations. Both appropriations will cover continuing work over five or six years.

Mr. Corcoran claims that the bill does not intend to interfere with any project now under way. Granting that to be true, what guaranty is there that some preparedness bunch may not use the Newlands bill as a side-track to shunt the Sacramento project upon and spend the money, which it is now arranged to appropriate for this improvement, on the building of a little battleship? The proposition is too dangerous to monkey with just now.—Eds.]

Curl leaf is prevalent in Elbertas wherever they were not sprayed with lime-sulphur when buds were swelling but none opened.



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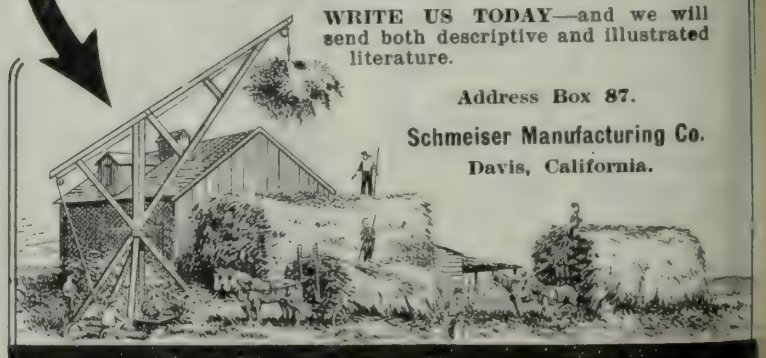
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University Farm's 8th Annual Picnic Day

[Written for Pacific Rural Press by Tom Judkins, University Farm, Davis.]

Founded in 1906 and celebrating its tenth anniversary on April 22, 1916, the University Farm Experiment Station and Farm School at Davis has come to be regarded as the greatest general agricultural experiment station on the Pacific Coast. The recent investigative work in irrigation, soils, horticulture, poultry and animal husbandry has been the means of saving thousands of dollars to farmers along these lines.

Annual Visitors' Day.—The present enrollment at Davis is 250 Farm school students and over 100 from the University at Berkeley, who are completing their course with a term's work along strictly practical lines—as the curriculum at Davis essentially is. One day in the year is set aside on which all farmers of the State, their families, and all city-folk interested in a closer study, on its native heath, of the much-heralded "scientific agriculture" may come, be instructed and entertained.

The day is intended to be one on which that ideal combination of practical instruction and informal entertainment is practised. The interested farmer or stock man is shown through all the phases of the investigational work being carried on at this great experiment station. Fifty-five acres devoted to study of the orchardist's problems will interest the horticulturist. Special attention is being devoted by this division to the rejuvenation of California's "worn-out" orchards whose former high yields have been in some sections materially lessened through improper methods of cultivation and lack of knowledge of pruning, pollenization and grafting questions.

On Saturday, April 22nd, will be held the 8th annual Farmers' Picnic Day, and the slogan adopted is "Worth-while demonstrations and loads of informal outdoor fun for the farmers of California and their families." Because of the vastly improved condition of the automobile roads in this part of the Sacramento Valley, last year's record of 400 visitors is certain to be greatly exceeded.

Besides the festival side of the day's program, the visitor will have opportunity of viewing the activity of the various departments on the Farm.

In the poultry department he will find a new laboratory where disease investigation work is being extensively carried on. A flock of over 2,000 fowls is usually maintained at this "farm" for experiment and student instruction purposes. Research work is now being done in moulting, relative effects of soy bean meal and meatscrap as protein feeds for laying and breeding hens, etc. An attempt is being made to find means of making the laying season of California hens a more regular and higher egg-producing period.

The irrigation division is specializing on dobe-soil work in that field of agriculture and also endeavoring to prove to the farmer that he is annually wasting large sums of money through over-irrigation and causing the partial prevention of desirable bacteria growth. Eleven types of head-gates are at present being tried out in the irrigation of this great 780-acre tract of Sacramento Valley alluvial soil.

The Agronomy division is kept busy with research work on field and forage and is especially concentrating on the growing of corn, sorghums, and Sudan grass under local conditions.

Many Champions.—The animal husbandry division is on an especially high plane, and is probably the most important of the departments. Herds of beef and dairy cattle are maintained that compare most favorably with those at any station in the country. The beef barn is the home of "University Jock," one of the greatest steers ever raised in this State. Others of the herd have earned the titles of Champion Hereford at both the San Francisco and Portland International fat-stock shows, Reserve Champion Cross-bred at both, Champion Aberdeen-Angus at both, and numerous other honors that prove that the breeding and feeding methods practised at this adjunct of the University of California College of Agriculture are correct and to be emulated by enterprising breeders. Five Farm steers sold last fall at an average of over 13c per pound on foot, and one dressed out at 71.6. The Shorthorn herd is at present small, but will soon come into prominence with a grandson of "Whitehall Sultan" as herd bull.

A small flock of milch goats have lately been installed and one of these will soon reach a mark of 1,400 pounds of milk for her first lactation period. High-producing Holstein-Freisians, Jerseys, Guernseys, and Ayrshires are among the 120 head of dairy cattle in the dairy department. One star individual has a year milk record of over 23,000 pounds.

In the sheep department may be found representatives of the Shropshire, Hampshire, Southdown, Rambouillet, Cotswold, and Romney-March breeds. One of these, a Southdown wether, was adjudged Champion of his breed at the San Francisco show and Grand Champion at the Portland International.

The swine herd averages 500, and contains members of the Berkshire, Poland-China, Duroc-Jersey, Chester-White, Yorkshire, Tamworth and Hampshire breeds.

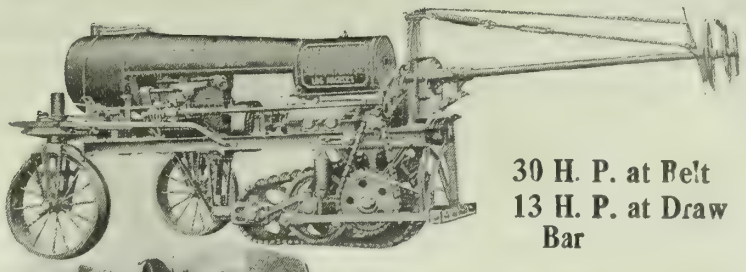
CHAIN SMOOTHS SEED-BED.

[Written for Pacific Rural Press.]

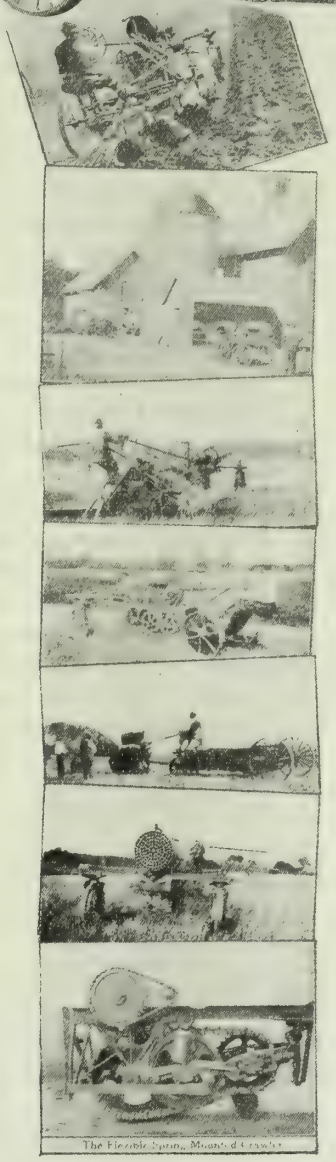
A spiketooth harrow leaves a seed bed in small ridges which dry out sooner than if level, and may prevent germination of some broadcasted alfalfa.

F. E. Handel of Covina wanted some alfalfa planted in his family orchard, to feed the goats. A good seed bed was worked up and borders made beside the tree rows. The alfalfa was sowed and harrowed in twice with a spike harrow from which dragged a heavy chain in the shape of a semi-circle, its ends being hung to opposite ends of the harrow. This dragged along just under the surface, leveling the ridges and filling hollows in fine shape.

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IS EASY TO OPERATE. There's one thing about the **Bates Steel Mule** that strikes everyone, and that is how easy it is to operate. All the control wheels are located on the column extending from the rear of the tractor within easy reach of the operator. The steering is as easy as an automobile—while the clutch is even easier, if possible. So gradually can the clutch be engaged that you can crack a nut with the wheel rims and not crush it. The "Mule" is used by thousands of satisfied owners all over the world, and is the **only real one man tractor built.** If you are going to buy a tractor for your work, go one step further, buy a **Bates Steel Mule.** "It's the way to better farming, bigger and better crops."

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., April 11, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	.56	36.09	40.34	56	42
Red Bluff	.02	19.71	22.16	82	46
Sacramento	.04	18.16	17.77	80	46
San Francisco	0	27.05	20.33	76	46
San Jose	.06	16.30	15.27	80	42
Fresno	.02	11.73	8.44	84	48
Independence	0	10.12	8.36	78	..
San Luis Obispo	.20	26.85	18.39	82	42
Los Angeles	0	19.89	14.44	84	48
San Diego	0	12.53	9.11	78	50

THE WEEK

WE ARE giving this issue largely to the the pig, because he seems to think that his friends should be encouraged a little and because we believe it is possible to spell the long word "opportunity" with three letters—and it does not matter whether you begin with a "p" or with an "h." But to be conscientiously frank with our friend, the pig, we must remind him that unless he wishes to be lathering around the State in a few years, to find out what he can do with himself, as the peach and the prune are now doing, he must begin at once to study the arts of foreseeing and foretelling. Unless he does this he may be rushing down the steep bluffs into the Pacific with the devil in his tummy—just as his progenitors did in Palestine so many years ago. For we cannot find anything to relieve ourselves from the impression that there is no difference in opportunities which come to pigs and to people; that all opportunities are not opportunities at all unless the opportunities are ready to lay hold on the hind-legs of opportunities and hold on. And so, while we thoroughly enjoy the word-pictures of opportunities which our pig pen-artists are portraying for other pages of this issue, we must add the conviction that to realize these opportunities the California-grown pig must begin right away to study manufacture, commerce and economics, and not fill himself wholly with pride of ancestry and the joy of good living. For though it is truly a shame that the population of so good a pig-paradise as California should think they are eating distant pigs and admiring distant labels, the condition probably cannot be changed much until the local pigs are more fully standardized to meet packers' requirements of size, style and quality, and California-packed pig products are popularized to a recognition of how good they are. This cannot be all done by simply growing more pigs, though that is a necessary condition—providing they be good pigs and well grown. Therefore, we call upon every California pig who loves his country to get his snout under his owner and keep boosting and rolling him over until he joins some kind of a pig club or society—the declared purpose of the organization being not only to grow more and better pigs, but to inaugurate a co-operative purpose to find out how California pig products can be given proper commercial standing at home and abroad.

THE PIGS THAT WENT TO MARKET.

IF WE remember correctly we made reference some time ago to our observation in England and Ireland of the operation of "Live Pig Societies" and "Bacon Societies." These societies were all very much alive, though the pigs were dead and smoked in one group. There was one very living purpose in all of them, and that was to displace Danish pork and pork products, and to get for British pig growers a fair show in the British markets, and they were doing so much that the printed reports of their transactions and membership lists made a book as thick as a slab of bacon. We attended one of the Live Pig Society's market days at Leicester, where we saw the Society's headquarters and its corrals filled with pigs so uniform in every way that a butcher or packer could buy a score or a thousand and not be able to tell individual pigs apart except by reference to their visiting cards. When the buyers for the markets or packing houses did not offer a fair market, the growers had their "Bacon Societies," which went to smoking. This was chiefly in Ireland, where packers were small and few. It is for the California growers' societies to look into such matters as these. We do not know how far it may be necessary to go in this State. That is for the growers to determine by investigation. Two of their attainments are apparently desirable here: first, an ample supply of uniform pigs of exactly the size and style the packers need; second, district or community sales' points where the right kind of stuff will be placed in open market to the fullest requirements of the packers. What the growers can do to advantage in finishing their product and developing distribution and publicity for it, they should be busy trying to find out. They should probably use existing packing and distributing arrangements just as long as growers get a fair deal, and they should join with packers in popularizing the California grown products and in making California hams and bacon smell just as sweet under a California label as they do now under imported coverings. Every California grower should join a pig society and learn how to squeal to some purpose.

ANOTHER CALIFORNIA CONSOLATION.

NOW that we have done the proper thing toward getting smoke into good California bacon, it is interesting to note that good California smoke will come after bacon. For it is a piece of trade information that the war has knocked the pipe from the face of mankind, and California has to replace it. It seems that French briar-wood, which has been held to be the best pipe-stuff in the world, cannot now be had, and the director of the forest-products laboratory at the University of Wisconsin reports that "after a number of experiments, the California mountain mahogany has been designated as the best substitute yet found for French briar wood used in pipe-making." This result was attained through the shipment from the California division of the U. S. Bureau of Forestry of various California woods, including specimens of mountain mahogany. This wood is reported as being plentiful in California, and is available in many parts of the State. The reports at hand leave us in doubt as to which of two species of cercocarpus has won the tubular award, but it is probably parvifolius, which has the larger range through our Sierra Nevada and Coast ranges, and goes abroad into other parts of the Pacific slope also. There would seem to be enough of it to smoke up the world. It cannot be doubted that the wood fully justifies the new eminence which comes to it. Long ago our pioneer botanist, Dr. Kellogg, wrote of it: "The wood is dark colored, with very little sap, hard and prodigiously heavy; of exceeding slow growth, trees of the largest size being about one thousand years old, perfectly sound, without infirmity, journeying on with eons unnumbered crowning their venerable brow and yet others in store; still the beautiful tressed seeds come and go as of yore, prettily spiraling as in juvenile grace, merrily trilling to the breeze, silky softening into mellow haze her curly head, lest the unbecoming twig seem too strict and stiff, or formal and bare, to please the eye or satisfy the taste."

As the indulgence in pipe-smoking is itself largely promotive of the play of the imagination, soothing and at the same time setting fancy free, how a pipe made of such a tree must bring consolation to a disrupted world! And to think that quaint old Dr. Kellogg, sitting in his workship of forty years ago, in his shirt-sleeves and red-flannel waistcoast, slowly pulling on his old black dudeen, and writing the poetry of botany, should really have been prophesying advertisements for the world-beating pipe of the twentieth century! But even this would not have displeased the genial, devoted pioneer; he always longed for the time when something good about California should be in everyone's mouth.

AND THIS IS EVEN WORSE.

AS WE have been, in a way, apologizing for the unbeastly vice of pipe-smoking, we may as well perhaps finish the chapter of crime and write of beer, for close observers always hold that smoking leads to drink, and sure enough, for here we go to it. It is an interesting fact for California barley growers that the malt-houses of the belligerent countries are not the only refuges for export barley. So far as we have observed no embargo has struck barley yet, but one does not know. Every time Britain sees a flock of Zeppelins she shoots off a volley of embargoes, and both are alike in the fact that they hit only those who are not fighting. In the matter of barley it is very interesting that the malt trade of the world seems to be rapidly coming to the United States. According to figures made public by the bureau of foreign and domestic commerce, of the Department of Commerce, the value of malt exports jumped from 330,000 bushels for the twelve months preceding the war to 2,153,000 bushels for the first twelve months of the war.

The value of such exports increased from $270,000 to $2,301,535. Italy, Sweden, Argentina, Brazil and the Philippnes imported malt from the United States for the first time during the fiscal year 1915. Brazil was much the largest customer of the year, taking 600,000 bushels; Argentina was next with 336,000 bushels. The only country to which exports fell off was Canada, to which 83,000 bushels were consigned, as compared with 161,000 bushels in the year previous. Possibly this suggests that California ought to be shipping malt through the canal instead of raw barley, but the more immediate suggestion is that we can sell barley in this country if there is any trouble about it abroad.

IN SACK OR IN BULK.

SPEAKING of grain and embargoes, it should be mentioned that one of the embargoes has struck us below the grain belt, because we have no public elevators to run a grain belt in. We have a few private elevators recently constructed which are doing well, and we may speak of them at another time, but the present trouble comes through the British embargo on the shipments of jute from Calcutta. Probably Britain counts on needing all the jute to sack up the prisoners she expects to be taking pretty soon, but that does not make it any less hard on us to be short of bags when we have a great crop coming on. We hope the committee recently appointed by the Sacramento Development Association, consisting of B. F. Walton of Yuba City, State Senator Benjamin F. Rush of Suisun, and G. W. Hendry of the University Farm, will soon have some pertinent suggestions for us on the desirability of elevators in our grain districts. Practically all the burlap used in the manufacture of grain sacks on the Pacific Coast comes from Calcutta and China. The bags are all made in the states prisons and in these no orders have been taken for a long time, all the output having been contracted for. The shortage of burlap has considerably reduced the output already. Current gossip is that second-hand bags are now worth considerably more than new bags were a year ago, and the apparent shortage of bags is very great. Of course, such things are not usually as bad as they seem in the distance, and there may be some substance available for containers not now thought of, because advance in price always brings new things to light, but surely everything possible should be done to escape the cost and danger of trusting to bags, and it should be done forthwith.

OUT OF TIME WITH THE WORLD.

AS WE find it practically impossible to say nice things about all the warring nations, because their policies hurt us so much in basket and in store, probably the best way to be neutral is to slam both sides. We have been sufficiently cross about British embargoes, which the Anglo and London-Paris National bank very neutrally says, in its recent circular, "is a serious loss but not a calamity, and will be partly offset by the unusual purchasing power of our own people." It is a good hint for all our embargoed producers to begin at once and see how much they can sell to more prosperous Americans, and that should never be lost sight of in our many marketing assemblies which are being held. Still, if Britain forces us to be thus out of time in our world trading it is a match for the foolishness of Germany in trying to gain time by monkeying with the clock. The report is that the German Federal Council has passed a measure providing that on May 1st all clocks shall be set ahead one hour. The measure was proposed for hygienic and economic reasons as lengthening working time during daylight and decreasing the necessity for artificial light. Of course, one can readily see that if the work day begins an hour earlier and stops an hour earlier, it gives a pleasant late afternoon for beer and pretzels, and may get the people to bed earlier. That is all rational enough perhaps—except the beer. But what kind of stupidity is it which requires the clock to be knocked out of time to do that? Why not change the shop rules or the blowing of the whistles, or the ringing of the bells. It may all be very wise for the people it is evidently intended to benefit, but we can not understand what kind of people they have to be thus benefited. It looks to us like the enactment of an imperial falsehood, the influence of which for immorality is hard to measure. And if the advantage of getting more working time in daylight is an offset for that impeachement of the truth, why not do more of it by turning the clock one hour forward at midnight, two hours backward at noonday, two hours forward at midnight, and so on? What time is it?

Queries and Replies.

Querists must give name and address.

What Is the "French Improved Prune"?

To the Editor: Kindly advise me what you know about the French Improved Prune, and whether you consider it a desirable prune to plant for commercial purposes. I am advised by reliable nurseries that it is in the experimental stage and they advise sticking to the varieties that have proven merit.—E. H. S., Delevan.

We have never seen the "French Improved prune" and cannot give an opinion about it. It is reasonable that improvement should be reached by selecting buds from the best bearing trees having the largest fruit and if you can be sure that this is the method of improvement, we should plant a few for trial. But, as we have previously intimated, any one who claims an improvement on the French prune (prune d'Agen) by getting away from the established type, is engaged in a very risky business.

Growing Castor Beans.

To the Editor: I wish information about the culture of castor bean as a commercial crop. What is the best sort to produce oil?—E. T. C., Ripon.

The castor bean grows luxuriantly in California and bears abundantly, but it is not a safe crop to grow unless you have a contract with an oil maker at a profitable price and unless you get the seed from him so as to be sure to get the kind of castor he wants. There are ornamental castors the seed of which is worthless for oil. As the beans are not edible either by man or stock your only chance is with the oil man. The soil must hold moisture enough to keep the plant growing late in the summer, for the crop ripens by succession of clusters and this requires much hand labor in gathering the clusters, and drying them so the beans will pop out on a floor where they will not be lost. Castor beans were first grown in California over forty years ago without profit and they have never been profitable since that time. Beans grown in India or in the middle west have always undersold our product because of cheaper labor.

What Will Celery Shoots Do?

To the Editor: I have some last year's celery roots which are sending out little, new plants from the old stumps. I wish to know if I can reset these shoots, and will they make celery, or will they go to seed? I set the plants from the seed last year. They grew up and were not pulled, so went through the winter and are now sprouting thickly. Each of the little shoots has plenty of roots. Some stumps have as many as 15 shoots and are farther along than plants from seeds would be.—C. V. J., Le Grand.

We never have grown plants from such shoots and therefore cannot speak from observation, but we are reasonably sure that even if the shoots did not soon send up seed stems they would not make such foliage and leaf-stems as a new plant from the seed would do. Therefore, practically, they are of little if any value—except possibly for seed growing. It is usual to grow seed from seedlings set out late and held over to produce seed the second summer. Presumably these shoots would share in the advanced experience of the hold-over roots from which they are taken; but, though they had the sentiment they would not have the force of the old root in bringing forth—that, however, we are guessing at. Who knows from observation?

Nuts in Lower California.

To the Editor: I am a new subscriber and am very much pleased with your publication. I will recommend it to my friends so they may share the benefits of it I intend to plant several hundred walnut trees next season. I have land, part of which is level and part of which is sloping, but not steep. I can plow up and down it with ease. The soil is very rich, but only from 18 to 22 inches deep as an average, being a little deeper on the lower part. The land lies about three miles from the coast, and between the ocean and the land there is a small range of hills that checks the sea breeze. For the past ten years, a crop of hay and a crop of beans have been raised on it, alternatively, each year, with success. Would this land be suitable for walnut trees, or is it desirable to secure other land?—R. R., Ensenada.

Unless you can find bearing trees which have behaved well your planting must be largely experimental. We do not know enough about your local conditions to warrant definite prescription. As the land comes through with a crop of beans it has presumbably enough summer moisture and moderated heat to favor the walnut. In Southern California beans and walnuts have been good pals for a third of a century. The soil is rather shallow and its capacity depends much on the character of the subsoil, which you do not mention. If the subsoil is permeable but not too loose or gravelly, it will help you out considerably. On the flatter land we would plant walnuts on California black walnut roots. On the slope we should try almonds—planting mixed varieties. You will see that we are only making suggestions for an experiment. In a few years you will be wiser and you can have the satisfaction of adding to the wisdom of the community also. Meantime we should scurry around and see if some earlier planter has not already rendered such public service.

Mechanical Power on the Farm.

EMPTIES FROST POTS ECONOMICALLY.

[Written for Pacific Rural Press.]

Frost pots have been emptied this spring by an economical system for the Corona Lemon Co., and will be made more economical and satisfactory next season by installation of a small gas engine.

F. A. Steele, who has charge of the orchards comprising some 245 acres of lemons, had observed the men lifting the heavy pots, many of them containing about nine gallons of oil, at arm's length above their heads, to the man on the tank wagon who would empty them. It was hard, wearing work, slow and uneconomical. They used to spill oil over the ground—a quart average per pot.

"Oil Kills the Ground and Trees."—To make the work easy and avoid spilling oil, Mr. Steele put a 300-gallon open-topped galvanized iron tank on timbers slung under a low-wheeled, broad-tired truck, hitched the truck on behind the tank wagon, fitted a pump to lift the oil, and then had the men dump the pots into the low-sided tank. They can now dump 1,500 nine-gallon pots from 20 acres per day.

Where the pots are entirely full, one man dips out a little from each. One man drives the tank wagon, two men work the double action Myer's force pump steadily, and three men carry pots from trees on each side of the outfit. They do not lift them more than 4 to 4½ feet high and have the whole open tank to pour into.. They do not spill oil as the man used to in trying to pour it into the small hole on top of a closed tank wagon.. A chicken wire and another fine screen prevent excelsior and newspapers, which were originally used to light the oil, from going into the tank—for these would clog the pipes by which oil is distributed on part of the place. About 21,000 of the pots were put in three years ago and have never been taken out—5,000 have been there still longer.

This year's experience suggests several improvements. It now costs about 3½ cents each to empty the 9-gallon pots, haul them to the barn, and stack them. Mr. Steele hopes to reduce this to 2 cents, and to take pots out of 35 acres per day.

A gas engine will take the place of the two men at the pump. Instead of the open tank resting on 6x6 timbers, it will rest on T rails or channel irons, so it can be lowered several inches. Now, the pots must be lifted a foot higher than the surface of the oil in the tank, which cannot be filled nearer than a foot from the top on account of splashing out. Next year's tank will have lower sides curved or flanged to prevent splashing.

ELECTRIC RATES REDUCED.

[Written for Pacific Rural Press.]

Reduced rates for electricity for 2582 agricultural power consumers in the San Joaquin valley from Merced county south have been ordered by the State Railroad Commission.

A flat rate of $50 per horsepower year has been charged, not allowing current to be used for other purposes when not in use for irrigation. The new rate is $42.30, and an equitable scale made for all uses of electricity. Farmers have been compelled to pay $65 each for a transformer: the power companies must furnish transformers free of charge hereafter. Instead of having to agree to use the current five years, the contract term is reduced to three years and annually thereafter. As pumping is not needed more than 8 or 9 months, flexible seasonal rates are made. One corporation has been compelling consumers to pay the cost of extensions, but will hereafter pay that cost itself. The maximum demand system has been abolished.

Both corporations are commended for efficient service.

The basis for the fixing of rates was a valuation of the property of each company, used and useful, allowing 8 per cent dividends. It was found that earnings have repaid early deficits with interest at 8 per cent; and depreciation funds have been provided.

ELECTRIC MILK HOUSE.

[Written for Pacific Rural Press.]

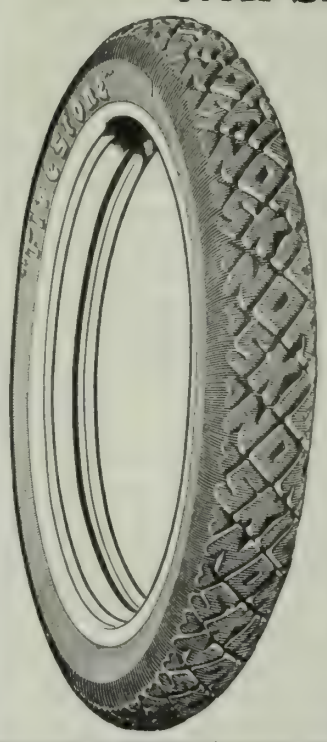
Electric power runs a dozen machines about the city milk-producing plant of the Elliott-Brant Rancho in San Fernando valley. As the strong features in producing the very best milk are breed, cleanliness, and coolness, perhaps the fundamental motor of the outfit is the one which pumps ammonia to cool the brine which makes several 50-pound blocks of ice at once. This ice is left in the tanks in which it is made until needed, with the brine around them. The brine is pumped through a milk cooler over which the milk runs after having the natural slime taken out in a motor-driven clarifier. A little motor runs the machine by which ornamental lead caps are put onto the bottles.

When the bottles come back empty and more or less clean, they are pushed two at a time over wet brushes rotating by motor power to

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Furnished with open center or solid concave tires.

The Combined Corn and Bean Planter here illustrated is a machine built by one of the largest manufacturers of planters in the world, particularly to meet the requirements of the Pacific coast trade.

It is not a made-over machine, but is built from the ground up for Coast needs. This fact, together with the reputation of the P. & O. Company for building tools right in every detail, insures absolute satisfaction to every user of this planter.

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FEATURES:

Equipped with a full set of plates for planting any of the different kinds of corn or beans commonly planted in California, including Egyptian and Kaffir corn.
Adjustable to any width rows from 28 to 44 inch. The check-rower machine is adjustable for checking rows 3 ft. 4 in., 3 ft. 6 in., and 3 ft. 8 in.
Accurate planting insured by the sight feed. Sight feed has a large opening, and the seed is visible at all times to the operator as it drops from the hopper to the upper valve.
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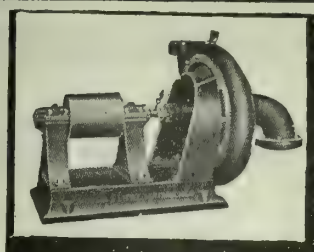
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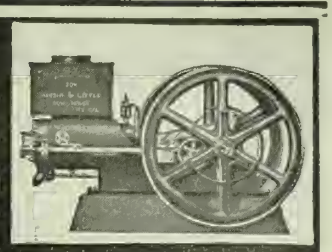
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clean out the insides while a brush above and between them scrubs the outsides of both bottles at once.

When butter is to be made, the cream is pasteurized, and cooled by pumped brine after being separated by electricity. It is churned and worked by electricity.

The official tester has a 24-bottle Babcock tester run by electricity to tell the efficiency of the butter-makers, both animal and human.

PLOWS STICKY ADOBE.

[Written for Pacific Rural Press.]

The moist adobe soil was not scouring very well, but the 70 h.p. Best tractor was rolling along with three gangs of four ten-inch plows each, hung by independent cables from the tractor and pulling back like game fish on a line. Behind each gang was a section of spike-tooth drag, attached to a timber across the front of the gang. One or two men kept fairly busy cleaning off the plows, which were going 5 or 6 inches deep.

Volunteer grain had grown eight or ten inches deep when the plowing was done late in March by A. J. Hunsaker and Son for H. G. Hutchins of Terra Bella. It was to be planted to beans, which would make their crop from the winter rains without irrigation. These are to be harvested in July and wheat sowed about December 1.

The tractor would plow 160 inches instead of 120 if the ground were drier, according to Mr. Hutchins, and would plow and harrow 80 acres per day.

ALFALFA FOR RED SPIDER.

[Written for Pacific Rural Press.]

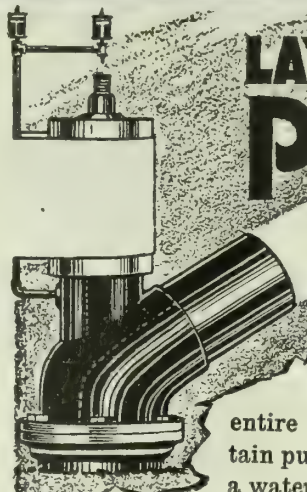
About half of A. L. Hardaway's six-acre peach orchard in Fresno county was sowed solid to alfalfa in mid-March, 1915. During the season following, red spider infested the cultivated trees right up to the first row with alfalfa around it. Here they stopped and the trees among alfalfa were not only free from spiders but made three times the growth that the others made, according to Mr. Hardaway. The fruit was larger and there was more of it.

He has sowed some more of the orchard to alfalfa this spring, and if no ill results follow, the whole orchard will get it and the alfalfa will be left as long as the trees seem to thrive.

There is no hardpan here. The sandy soil is deep as the roots go, and probably more.

But perhaps the increased vigor and immunity from red spider would be accounted for by more frequent irrigation. The alfalfa was watered four times—the rest was and always had been watered twice.

Irrigation is accomplished with a 10 h.p. engine and a four-inch Fresno pump throwing 450 gallons per minute. The first irrigation was applied light when the alfalfa was a month old and two or three inches tall. The rest is applied as the alfalfa and trees need it.



LAYNE & BOWLER PUMPS

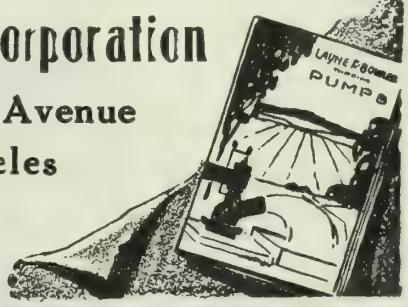
You cannot afford to gamble an entire season's crop against an uncertain pump. You must be insured against a water shortage—keep things growing by using a dependable pumping system.

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can be depended upon the entire year. They have stood the test. They have proven their superiority. Simple to install, simple to operate and, simple in construction, they require little or no attention. They are rigidly adjusted and compact—all bearings are enclosed, and unaffected by grit or sand. The old style well pit eliminated. Lower your water-producing cost and insure a continual supply by installing a Layne & Bowler Pump.

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General Agricultural Review.

CITRUS AND SEMI-TROPICAL FRUITS.

Orange Cove citrus growers have formed a local association.

Imperial county imported nearly 30,000 grapefruit trees in March.

Seventeen fig trees set out by B. R. Saccett in 1851 on the August Brinck ranch near Winters produced a second crop of 5 tons dried last year.

The semi-annual meeting of the California Avocado Ass'n will be held at Blanchard Hall, Los Angeles, April 29 instead of April 20, as previously reported.

Caprifigs of Merced and Fresno counties froze last winter so the blastophaga are scarce. Prof. I. J. Condit suggests the planting of caprifig trees in the thermal belt of the foothills.

Valencia shipments from Tulare and Orange counties started the first week in April, the earliest in years. The quality seems better than usual and the crop heavier.

A Japanese orange peddler in Los Angeles is carrying Sunkist oranges because so many of his customers demanded them. The national advertising campaign of the Exchange is getting in its work at home.

All movement of trees, flowers, or plants infected with disease or insects is prohibited by the Florida State Plant Board, to prevent spread of white fly, canker, etc., by means of orange blossoms, etc.

Citrus blast, a new disease, has been observed in Butte county through the past year by Prof. J. Eliot Coit of the University. It is active in winter weather. It kills the leaves and travels down to the twigs which it often girdles. It does not hurt the wood of the twigs.

Architect's drawings for buildings on the new Citrus Experiment Station were recently submitted to the city planning commission of Riverside. They will be located beautifully high on the hillside overlooking the entire valley to Redlands, San Bernardino, and westward.

DECIDUOUS FRUITS.

Over 20,000 fruit trees have been set out in the Cuyama valley this season.

Butte county orchardists have had good results with vetch winter cover crops.

Ninety-two per cent of the Stanislaus freestone peach acreage is signed up in the Association.

Over 10,000 almond trees were imported Mar. 1 to 25 to be planted in the Paso Robles district.

Muir peaches are reported to have set a heavy crop around Dinuba, with Elbertas and Lovells doing well.

A 750-acre apple orchard is being set out at Berry Creek, just off from Feather River canyon, by the Sierra Orchards Co.

Little leaf and peach blight are getting in their deadly work early this season and are reducing the crop, especially in the San Joaquin Valley.

Nearly 3,000 acres of orchards and vineyards have been set out in Sutter county this spring. Grapes lead with 1120 acres and prunes follow with 1079.

About 80 per cent of Napa prune growers have subscribed to the Information Bureau according to Henry Wheatley, who has been consistently boosting for it.

The Mendocino Farmers' and Apple Growers' Ass'n have elected Joshua Grindle president and A. A Heeser secretary. Mr. Grindle will be general manager of the next apple show.

Apricots around Winters are reported as a half crop owing to rains during and after blooming. Those remaining are clean and promise well for early eastern shipment. Peach crop is well set.

A Watsonville Apple Show is proposed for this year if the $2,000 debt can be wiped out. It is suggested that a full report of receipts and expenditures of the last Show (held in San Francisco) be made before proceeding farther.

The Santa Clara Growers' Information Committee advises that no prunes be sold at present prices of 4 to 5 cents. Nine cents is offered for 1916 apricots and $30 for pits, but the Committee advises that no sales be made. Prune crop is not so heavy as it previously looked; apricots worse.

TIRES

PRICES

Goods shipped to all points C. O. D. Money refunded on goods returned intact within one week.

Size	Special Prices on Plain Tread	Gray Tubes	Red Tubes
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30x3½	8.95	2.10	2.35
31x3½	9.45	2.15	2.40
32x3½	9.95	2.25	2.45
34x3½	10.95	2.30	2.55
36x3½	12.05	2.40	2.75
30x4	13.20	2.80	3.10
31x4	13.85	2.85	3.20
32x4	14.05	2.95	3.30
33x4	14.70	3.10	3.40
34x4	14.95	3.15	3.50
35x4	15.65	3.20	3.60
36x4	15.85	3.30	3.70
34x4½	20.25	3.85	4.30
35x4½	20.85	3.95	4.35
36x4½	21.25	4.10	4.50
37x4½	21.90	4.15	4.60
35x5	23.65	4.70	5.20
36x5	23.95	4.90	5.35
37x5	24.90	4.95	5.45

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WHILE THEY LAST.

30x3½	SS	$ 7.90
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36x4½	Cl or SS	14.00
36x5	Cl or SS	15.00
37x4½	Cl	14.00
37x5	Cl or SS	15.00

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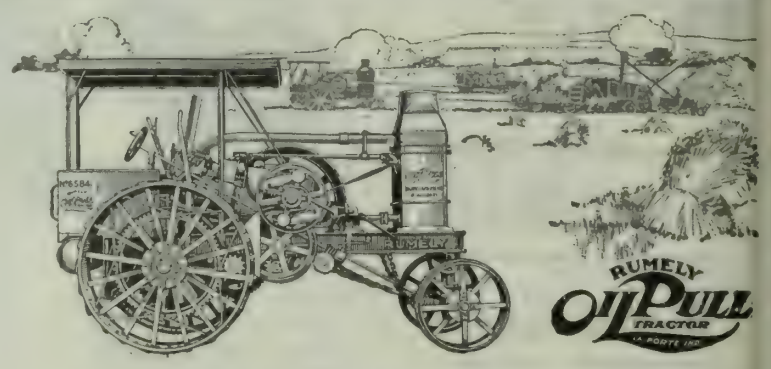
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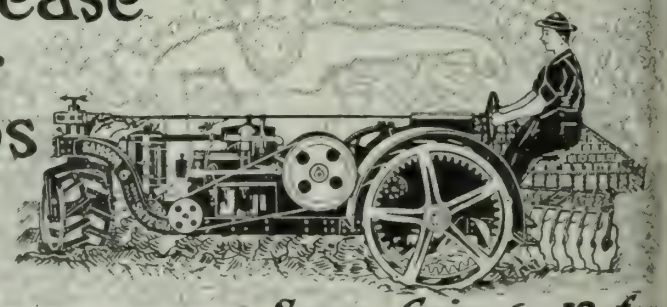
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The State clearing house plan for distributing deciduous fruits in eastern markets was presented to a large meeting of shippers and growers at Sacramento recently. F. B. McKevitt is reported to have said that while it would do much good, it would probably not be possible to prevent gluts of the market. The same proposition was previously questioned by G. Harold Powell as presenting legal difficulties, and by others as likely to stifle initiative in developing markets to get increased consumption.

OLIVES AND NUTS.

Stanislaus almonds are fair to light crop in general.

Arizona permits no importation of olive nursery stock except unrooted cuttings.

The Wyandotte Olive Growers' Ass'n has filed articles of incorporation. It is a co-operative non-profit organization.

John Glynn of eastern Contra Costa county sent in the names of 10 new members for the Cal. Almond Growers' Exchange on Mar. 21.

Olive packing by the Tulare Growers' Ass'n of Porterville is completed for the season. Manager R. A. Powell reports most encouraging sales.

A light almond crop is reported by M. P. Stein of Stockton, due to rain and frost. Nonpareils and Ne Plus are especially light. IXL's are nearly normal.

The Rumsey District Almond Growers' Ass'n filed articles of incorporation April 10. The new Association is composed of the minority of the Guinda Ass'n with others, and is affiliated with the Cal. Almond Growers' Exchange.

The net gain in membership of the Cal. Almond Growers' Exchange during the past year has been 109. J. B. Wrangham of the Exchange reports that never before have old members been so active in securing new members as this spring.

The Guinda Almond Growers' Ass'n, having become prosperous through the raising of almond prices and steadying of the market by the Cal. Almond Growers' Exchange, recently voted, by a majority of 1, to withdraw support from the Exchange which nourished it; and started on its independent way to bring chaos on the industry again. They doubtless hope that most others will not follow their example.

GRAPES AND SMALL FRUITS.

For raisin day celebration in Fresno, $1591 had been raised up to April 7; $6,000 is desired.

The earliest strawberries of the Woodland district were produced by J. Koebel. He made a commercial picking Mar. 31.

Table grapes brought the growers $4,714,000 more than all the wine grapes last year, according to the State Viticultural Commission.

Imperial Valley strawberries dropped out of the Stockton market the first week of April because local berries made too strong competition.

Sweet wine production in 1915 was 20 per cent of normal; dry wines were 3,500,000 gallons short of normal, according to Sec. E. M. Sheehan of the State Viticultural Commission. "There was little or no profit to the grower unless he made his own wine," says Mr. Sheehan.

Only 500 tons of raisins were made from wine grapes last year in spite of the fears proclaimed because of the excessive tax on fortification brandy. There were 124,000 tons of raisins, which gave the growers a net profit of $2,000,000, according to the State Viticultural Commission.

California strawberries are barred from Utah because the Utah sealer of weights and measures will not permit a variation of ½ cubic inch or ½ a strawberry in the size of boxes imported. The California sealer allows ½ cubic inch variation from the standard of 33.6 cubic inches per basket.

Spraying grapes for mildew with atomic sulphur, 10 pounds per 100 gallons spray, applying the first time when the young shoots are 6 or 8 inches long, is recommended by horticultural commissioner J. J. Fox of Napa. He estimates the cost at $3 per acre or less. Every part of leaf and vine must be covered with the spray.

GRAIN AND FIELD CROPS.

Hop growers of Sacramento county are reported to be pulling up their vines.

The Alameda Farm Bureau is distributing samples of sorghum corns and sudan seed.

Nearly 8,000 acres are being prepared for rice in Yolo county, mostly to be sown this season.

Summer squash from Imperial Valley appeared in Stockton markets Apr. 7, retailing at 15 cents per pound.

There were 61,811 tons of grain in San Francisco, Port Costa, and Stockton warehouses Apr. 1, according to Chief Inspector H. C. Bunker of the San Francisco Chamber of Commerce.

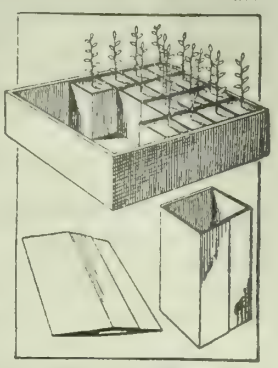


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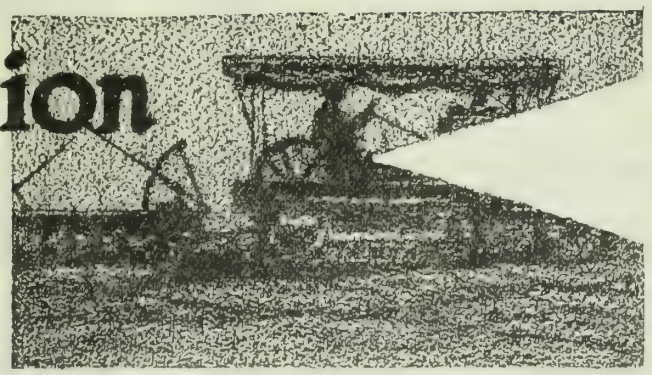
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It's the "know-how" points—big and little—that 30 years' manufacturing experience has taught us, that give the Caterpillar its "stand-up-iveness."

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California Livestock Industry is the Empire Builder.

[Written for Pacific Rural Press by A. B. Humphrey, Escalon.]

Escalon is a Spanish word meaning "The Door Step." The town bearing this name is not only the door-step to the great San Joaquin Valley stretching for 200 miles to the south, but it might properly be called the Front Door Step, since it lies in the center of the valley at its widest part, and within 20 miles of where that valley meets tidewater. Where the valley and these waters meet, the city of Stockton was wisely located—on the shores of an ocean-connected waterway and in the mouth of an enormous inland valley. So Escalon is rightly named the Door Step, and he who named it saw a great valley through an imaginary open door.

Being so favorably situated, the quick changes that are taking place are rapid, wonderful, and impressive, and have ceased to excite comment. Natural resources and ceaseless ambition are working changes overnight.

The new South San Joaquin Irrigation District centers around this point and what a few years back (less than might be counted on the fingers of one hand) was a grain field is now fast becoming a checkerboard of small farms and produce plants. So fast is it changing and being brought under water's wonderful influence, that it is surpassing the most liberal predictions. This is not so surprising when the broad plan under which the district was laid out and developed is considered. Something was done in the South San Joaquin Irrigation District that was never done before in a district of large proportions.

Many of the large irrigation districts of the State boast of having brought the water over the lands at a low cost, and many such have now been inaugurated for two decades with the result that comparatively small areas are as yet making use of the great privilege of water for irrigation. And why? Such a thing would seem strange—but no,—the very thing boasted of erected a barrier against the progress which should have followed; and hindered the development which should have returned double and treble the original expenditure. The water was brought out over these large expanses in canals and laterals miles apart and today, 20 years after the initial effort, much of the land is miles away from its water supply.

Not so the South San Joaquin Irrigation District. You hear no talk of the cheapest irrigation district ever inaugurated. On the contrary, nothing was spared to produce practical, permanent results and bring quick development. Something was done never before undertaken in the State on so large a scale. The initial effort not only included the building of the great masonry dam in the Stanislaus river and the construction of the main canals and laterals equipped generally with permanent concrete structures, but it also included the delivery of water to the corner of every Government forty-acre tract in the entire district of 70,000 acres. This could be productive of only one result: the quick development of a territory so bountifully favored. The record substantiates it.

In the Pacific Rural Press—issue of July 26, 1913—a description in detail of this work appears. Among other things are these statements: "This spring the dam was formally opened. Early in August, if not before, the main canal will be completed. . . . . In the spring of 1914 the system will be completed to the last 40 acres, and in 1915 in all probabilities the storage dam will be ready also. Then the northern part of the San Joaquin Valley will be a garden," etc., etc.

Is it any wonder since these statements in the main came to pass that sudden changes should take place? Predictions as to what would happen, how much and how fast the water would be called into use have been surpassed. The first year 15,000 acres were served, last year 25,000 acres and this year the estimate is 35,000 acres will call for water. It looks as if the Door Step to the San Joaquin Valley will be colored in an agreeable green without delay.

But what of all this effort? Where does it lead and what the results? And if any, how practical to bring about permanent prosperity, to produce self-sustaining, happy homes for the small family—the backbone of all national welfare? Ride through the country and notice. Do you know what a silo is? A few years ago no one would answer this question.

A silo means only one thing. It means a dairy. A dairy means milk. Milk means butter. Butter means weekly cash returns. Weekly cash returns means savings banks in every district. Savings banks mean more dairies with better cows to make them up. Silos and dairies mean more and better swine, because dairies and swine intimately and naturally go hand in hand on the farm. Swine also mean continuous cash returns at all seasons.



MODERN DAIRY AND HOG EQUIPMENT.

Livestock is becoming recognized as necessary to bring impoverished land back to productive fertility. This plant was erected within five months by A. B. Humphrey of Escalon.

The Farm a Savings Bank.—And that is the combination that changes the appearance of the country seemingly without effort and before we are aware of the change. At last the right combination to make the farm a savings bank is reached after years of exploiting and soil robbery. Correct principles come because there is no choice other than bankruptcy.

First the cattle barons crowded the ranges to extinction and drove the produce off and sold it. Next the wheat farmer came and exacted the last pound, restoring nothing, feverishly burning up the stubble in haste to raise more. Then the alfalfa farmer who cut the hay and sold it off as the easiest way to get cash returns. Even the orchard and vineyard, usually considered to be a light load and rather a concession to the over-worked land, proved, because it took from and returned nothing, that it also led to poorer crops and down poverty's path, until at last forced to accept the inevitable we turn to first methods, the systems prevailing in the old and crowded countries, and return to the soil its due, taking from it such as is necessary to keep up the intense system of rotation, but returning what enriches the land and builds up an invisible but staple deposit of soil wealth,—to be drawn upon intelligently—always as reachable as a savings bank account.

And so this building process goes on and live stock takes its place—because it fits and because it belongs in the system necessary to the increased population to which California's generous resources entitle it.

[Everywhere in the interior valleys where good land and water are brought together in desirable quantities, the transformation which Mr. Humphrey describes in the above is apparent, although it is true that one does not find such rapid colonization as in the South San Joaquin Irrigation, in most districts. Certainly not on such a large scale.

Year after year livestock is gradually tightening its hold on these interior valley farms, first because it offers a means of securing quick financial returns and latterly, as Mr. Humphrey outlines, to re-establish fertility. But livestock is doing more than the establishing of farm animals on the farms. It is making for a more diversified state of farming than that, although ultimately it is all for livestock.

This is apparent in the Modesto and Turlock districts which adjoin the South San Joaquin district. There you find livestock has come to be the established occupation of the large majority of farmers and there also you find an ever-increasing amount of grain, sorghums, and other field crops being grown. Most of these were not possible before livestock added to the fertility of the soil, but now grow in abundance. Most of them were not profitable until the increase of livestock made a nearby and steady market for them.

Thus we find that instead of the grain farmer of years ago, with his two or three choices of cereal crops, the possibilities of the new settler as well as old are now almost unlimited in this respect. This has incidentally enlarged the outlook for future livestock development in all interior valley situations. Many feeds such as corn, which was considered almost an impossibility on anything but river bottom lands a few years ago, now hold promise of profitable culture under a great variety of conditions.—Editors.]



The Goodwin dam, which has a capacity sufficiently large to supply 140,000 acres, 70,000 of which are in the South San Joaquin Irrigation District. It is estimated that 50 per cent of this will be called for in 1916.

The new world's champion two-year-old Ayrshire, Willowmoor Etta 3rd, bred and owned by J. W. Clise, Redmond, Wash., has just completed her official record of 16,621 pounds milk 4.01 per cent fat, making 666.06 pounds fat.

DAIRYMEN MUST COOL CREAM.

We are advised by F. W. Andreason, Sect'y of the State Dairy Bureau, that the State dairy law pertaining to the cooling of cream within one hour after milking will be more rigidly enforced this year than in the past and that already four dairymen in the San Joaquin Valley have been convicted and fined on this charge.

The law says that cooling must be done within one hour after milking to as low a temperature as is practicable. By allowing the cream to run from the separator over a water cooler, instead of directly into the can from the separator, the intent of that section of the law will have been complied with and for that reason all subscribers who are selling cream to creameries should secure a water cooler at once, and in this manner insure themselves against possible arrest.

Southern California Hog Opportunities.

[Written for Pacific Rural Press.]

With Southern California drawing 80 per cent of its pork supply from Idaho and Utah, something is wrong. With Los Angeles ranking close to Chicago in size; with hundreds of thousands of acres adapted to alfalfa, milo, kafir corn, etc.; and with a climate suitable twelve months every year for thrifty hog growth at very little cost for buildings, there seems every reason why Southern California should compete successfully, in its own great market, with Idaho. The $140 to $175 per car freight on hogs through hundreds of miles of mountains, for a distance totaling 2000 miles, added to the cost of production in a country that is snowbound several months each year, and added to the cost of getting the porkers out of the more or less inaccessible valleys in which they are grown, would seem to give Southern California hog producers a considerably greater profit if hogs from both districts brought the same price in Los Angeles. It is said that the present (Mar. 22) nine-cent price on live hogs here is due to the Idaho hogs being still snowed in. Last spring prices were lower because a mild Idaho winter permitted early movement of hogs. Can't we raise hogs as cheaply in Southern California as in Idaho?

Now What is Wrong? — We give some pointed remarks of various Los Angeles packers.

"California hogs have been a side issue; they have had to shift largely for themselves."

"Dairy-fed hogs are sloppy."

"Hogs grown and fattened on alfalfa have meat of greenish yellow tinge, 'fishy' flavor, moist and shrinky."

"Acorn-fed hogs cause us lots of trouble."

"The only way to raise hogs is to immunize them. We have 800 hogs immunized on our own ranch. George Long in Imperial Valley fattens 5000 or 6000 hogs a year, and he vaccinates all of them."

"Idaho hogs are as good as Eastern hogs on account of their breeding. Ten years ago you couldn't get anything in California except razor-back relatives; but now Californians are beginning to breed up."

"Even a California hog raiser will sell his hogs and buy eastern hams and bacon."

"To make hog raising for pork most profitable, get high-grade sows and registered boars."

"Eastern hogs dress out 5 to 6 per cent more pork than ours."

"Californians as a rule haven't gone into hog raising on a business basis. They sell out their breeding stock when prices are down and can't supply porkers when prices are high. You can't succeed in any business unless you stick to it through thick and thin."

"We bought 50 or 60 runts from a farmer a while ago, weighing around 75 pounds. We are feeding them alfalfa meal, ground milo, and tankage. They are gaining 1½ to 1¾ pounds per day at a cost of 4 cents per pound. If they hadn't been stunted by starvation from the start, we would be getting two pounds daily gain easy. As hogs are worth 9 cents now we are making 5 cents a pound or 125 per cent on the feeding of these runts. The farmer should be making that."

What about the Future?—Terse statements, obviously true, are quoted:

"People are going to keep on eating."

"This is a growing country."

"Southern California population is increasing."

"There will be more profit when California hogs are marketed at full weight when 8 or 9 months old than there is now when the average age is 15 months."

"We are running the packing house to full capacity."

"When we have increased our production to supply the 80 per cent now shipped in, the population will have increased to take a good bit more than that."

"Our business is increasing every year."

"We are even now shipping to Honolulu. If we had a merchant marine we would be shipping to the Far East."

"When California produces pork of quality equal to Idaho or eastern pork, and enough of it, she will drive eastern pork out of our markets."

"Californians, with climate, feed, and freight advantages, ought to make money competing in California markets with northern or eastern hogs and pork."

Purebreds Needed. — Southern California purebred hog raisers now are pioneering. Their scattered location in all parts proves the adaptability of the country to purebreds. The increasing use of purebred boars acknowledges that the proportion of improvement in desirable characteristics is due to the pure blood of the boar. Then why not go a step farther and use purebred sows? There are a number of southern breeders with herds already acclimated and handy to investigate. Compare your hogs with theirs."

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ARE MAKING GOOD.

Our Herd Boar is "River Bend High Model"—sire, "High Model" (No. 3300), and Dam, "Lady Top Notcher 6th (No. 1100). He is producing large litters and these will become high-class foundation stock.

Our 20 Brood Sows are of equally good stock so that buyers will secure just what they want when they order.

Our weanlings of both sexes, which have our guarantee and must satisfy our customers. We sell only our own stock and are in the Duroc business to stay. For prices,

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RIVER BEND FARM, St. Helena, Calif.

Imperial Durocs

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500 Head

INDIVIDUALITY is the result of inheritance. Watch these ads and study the breeding of our herd Boars.
P. & L.'s DEFENDER, by DEFENDER, Twice Grand Champion at the International, First Jr. Yearling Iowa and Illinois State Fairs. Sold for $5000. Young Boars and Gilts by this Boar, and other noted Boars for sale. Ranches at HOLTVILLE, Phone, 83-F-2, and DEVORE, 11 miles N. W. San Bernardino on paved road and main line Santa Fe and Salt Lake R. R.

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Ten Boars six months old—Crimson Wonder blood—each one a fine individual—tops of fifty-two head. Thirty gilts—six and seven months old—Crimson Wonder and Model strains—good bone and plenty of length. Weanlings sired by Col. King. Immediate shipments. Price right. Call or write,

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Registered Duroc - Jerseys

Spring pigs out of sows sired by "I Am Perfection Wonder," sire of Grand Champion Sow at Panama-Pacific, and others equally well bred. First-class stock, breeding guaranteed, out of finest blood in existence.

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GET STARTED RIGHT
Registered Duroc Jerseys.
$10 each PIGS $10 each
are money makers.
What's the use of raising "Scrub Hogs" when purebreds may be had at this price! They grow faster. Send today.
NEW ENGLAND CALIFORNIA CORPORATION
RIPON, CALIF.

Pedigreed Duroc-Jerseys

Fall Boars, Open Gilts and Weanlings from the strains of Crimson Wonder, Golden Model and California Volunteer.

Address Superintendent,

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Registered Durocs

H. E. BOUDIER & SON

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Call you attention to their choice stock. Weanling pigs, $10—either sex. Service boars and a few gilts bred to farrow in May. Correspondence solicited. Visitors always welcome.

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SCIENTIFIC PRESS PATENTS PATENT AGENCY
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Circular containing 100 mechanical movements mailed free.

Registered

DUROCS

All ages.
ONE YEARLING BOAR.
Satisfaction guaranteed.
FREDERICK M. JOHNSON,
Napa, California

Registered DUROCS

Herd is headed by
"CRIMSON MONARCH 2nd"
Write for Prices.
J. M. DeVilbiss, Patterson, Cal.

Defender's Blood in California!

KING OF DUROCS

Best of breeding and quality combined. Thompson's Pilot Defender, California's Keen 2nd, at head of herd.

Write for particulars.

C. T. THOMPSON, Bishop, Cal.

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.
Write or call and see us.
SWINELAND FARM.
W. O. PEARSON, Prop.
Woodland, California.

SOME OPTIMISTIC REASONS FOR PORK.

The best estimates place the cured and fresh pork consumption in California right around $30,000,000 annually. This represents more than 2,000,000 live hogs. We now produce about $15,000,000 worth annually. Two-thirds of this pork is cured or pickled. Our present capacity for packing cured meats is approximately 1,450,000 hogs, more than all the cured meat at present consumed in the State. Yet we are only packing 20 per cent, or approximately $4,000,000 worth, of the $20,000,000 worth of cured pork we consume.

Central and Individual Farrowing Pens.

[Written for Pacific Rural Press.]

Two types of hog houses are shown in the accompanying illustrations, the Corsa central farrowing house in the top view and the individual house and driveway in the lower picture.

The house in the upper picture is situated on the Steybrae Farm, owned by E. B. McFarland in San Mateo county; and as the illustration shows, is well lighted and ventilated, two very essential factors in houses of this type.

It faces the south, allowing the maximum of sunlight inside the building. A central feeding alley eight feet wide runs from end to end, dividing the pens on either side which are nine by ten feet in size.

The floor is of wood, having a gradual slope from the east end to the west, the floors in the pens also having a gradual slope toward the alleyway where a six-inch gutter on either side carries away all liquids.

Provision is made for a feed and litter carrier that runs the entire length of the building and may be extended outside the building. A feed room is located in the east end. While somewhat expensive to build, this is a most desirable house as it reduces labor to the minimum with large numbers of hogs.

The lower view shows a system of housing as used by Geo. V. Beckman at his ranch in San Joaquin county. The houses in this case are each large enough for a sow and her litter, both sides of the roof being hinged at the lower edge, so that one or both sides may be spread open at the gable, allowing both sun and ventilation in clear weather. In rainy weather they are drawn together as shown in the picture.



Corsa type, central farrowing house.

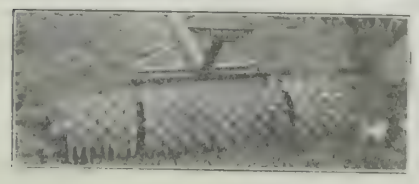


Individual type hog houses used on Geo. V. Beckman ranch, Lodi.

These houses are set in small pastures, feed troughs being placed next the driveway, and drinking water being supplied at troughs located at the division fence between each two pastures. While not compact, this system is favored by many because less work is required in keeping the quarters sanitary and more room is provided for grazing.

The P. P. I. E. reserve champion Shorthorn bull calf, Pacheco Lad, has been sold by the Pacheco Cattle Co. to E. N. Casares and Sons of Buenos Ayres. The calf is 13 months old, weighs 1150 pounds, and sold for $750.

The Cunningham Land Roller and Pulverizer.



Makes a Perfect Seed Bed
STOPS EVAPORATION—PRESERVES MOISTURE.
The Best Clod Crusher ever made for Farmer, Orchardist Vineyardist, Nurseryman and Seedsman
MADE IN ALL SIZES
Write for Particulars—Circular CC2.
Manufactured and Sold Exclusively by
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IMPERIAL STOCK FARM
Berkshires

Herd headed by a son of Laurel Champion, Winona Champion 13th, 211973. Excellent young stock to offer at $20.00 up. Only first-class shipped out on mail orders; all others made into pork on the ranch at a profit.

Write for particulars or call and see them.
R. J. MERRILL & SON, Morgan Hill, Cal.

The California Swine Breeders Association

Will hold its second sale of PURE-BRED HOGS of all breeds on MAY 24th at the
SECOND ANNUAL BUTTE COUNTY SPRING EXPOSITION
INDUSTRIAL EXHIBITS—LIVE STOCK AND POULTRY.
to be held at
CHICO, MAY 22-28th, 1916
COL. B. A. RHOADES of Los Angeles, Auctioneer.
Send Auction Entries to J. I. Thompson, Davis, Cal.
WRITE FOR PREMIUM LIST AND ENTRY BLANKS.
A. G. EAMES, Director General. CHICO, CAL.

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Bred right—Fed right—Are right.
Both sexes for sale. Prices very reasonable.
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Boars, Bred Sows and Gilts.
Herd Board ROYAL POINTER 2nd, 197092.
First Premium Senior Yearling P. P. I. E.
San Francisco Office, 1210 Flood Bldg.

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Large size, quick maturing, registered. Both sexes for sale. Older ones at farmer's prices.
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THE BELLA VISTA
Hampshire Herd

headed as it is by a Grand Champion 700-lb. son of General Allen, and a wonderfully fine young boar, America, descended from the great boar, Pat Molloy, with dams prize-winners themselves or descended from such stock, makes this an ideal herd from which to procure good stock.

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Hampshire Swine

Brood Sows, Gilts and Young Stock.
The fine Bacon Hogs. Reasonable prices.
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CHOICE O.I.C. SWINE

Weanlings of both sexes. Also a few bred sows with good records. Registered and crated free.
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Duroc Jersey Hogs

Both sexes for sale, from highly bred stock.
ED. E. JOHNSON,
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CHOLERA IMMUNE

Our herd is Cholera Immune, the only immune Berkshire herd in the State.
Fine herd boars in use and they are second to none on the coast. Our sows are of equal merit.
We know that we can supply what you want
Write Us or Call.
OAK GROVE DAIRY FARM
H. G. ARMSTRONG, Prop.
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Model Herd of BERKSHIRES

Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 180837 and Breed's Model 165859, both winners of blue ribbons at State Fair.
Descriptive catalog upon request.
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Are Money Makers.
THEY GROW.
Headed by the First Prize Aged Boar at P. P. I. E.
Tell us your needs.
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SUNNYSIDE STOCK FARM
BERKSHIRES

Prolific Prize-Winning Stock.
Watch for our hogs at Chico Fair and California Hog Breeders' Association Sale, May 24.
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DEL DAYO FARM
(Old Higginbottom Ranch)
BERKSHIRES

Fine registered stock.
Both sexes for sale.
STEPHEN S. DAY.
Box 1140, Sacramento.



Our Grand Champion Sow, Chicago International.
BRENDEL'S BEAUTY, 56072.

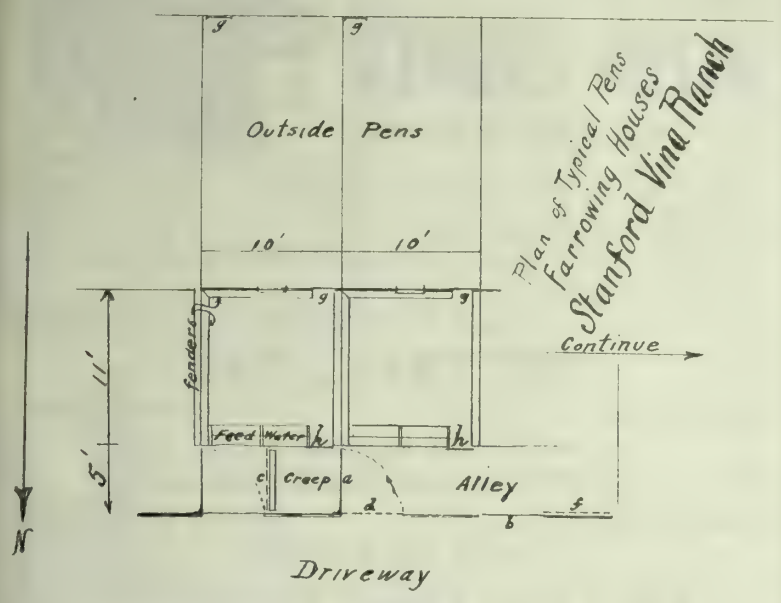
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You can buy GOOD INDIVIDUALS, WELL BRED, WELL FED at the RIGHT PRICE from us. If you want THE BEST YOU CAN GET IT RIGHT HERE IN CALIFORNIA.. Our breeding stock is unexcelled anywhere. It includes Chicago International Stock Show, Indiana and other State Show GRAND CHAMPIONS. We have never ahd any sickness in the herd. We have never had a complaint from a buyer. Write us your wants. If you want young mated pairs, brood sows, or boars, we will try to please you.
Address inquiries to BRUCE CORNWALL,
914 Kohl Bldg., San Francisco.
All prices f. o. b. Glenwood, Santa Cruz Co., California.

Farrowing Pens at Vina Ranch.

[Written for Pacific Rural Press by F. W. Holbert, Supt. Hog Dep't.]

At the Stanford University's ranch at Vina we have two farrowing houses. The buildings are of shed type, 13 feet high in front and seven feet at the rear. Each one is 250 feet in length and 16 feet from front to back. The floors are concrete. In each house are 25 pens 10 by 11 feet with a five-foot alley along the front. Over a part of the alley is a floor for storing baled hay.



The pens are equipped with fenders and at the rear of each pen there is a window two feet square and five feet above the floor. There is a horizontal sliding panel (g) at the back of each pen for closing the small door into the runs on the south side of the building. A vertical sliding panel made of one by six inch slats, closes the opening into the alleyway. This panel (h) can be fastened at different heights to allow the sow to enter, or to allow the pigs to pass under it into the creep.

When the pigs are old enough to eat grain, a creep for each pen is formed in the alley by swinging back the front gate (d) to a position across the alley (a) and placing a portable panel at (c). This portable panel will fit at (c) or in the doorway (d), and when not in use can instantly be fixed against the wall as at (f).

With this arrangement each litter is kept separate and there is no robbing. The pigs learn to eat grain and to drink skim milk in the creeps and when ready to wean, the sows are quietly and quickly taken away. The pigs are not disturbed and receive no setback. After a few days three or four pens are turned together so that the pigs can be fed in bunches of about 25.

The pigs of course have access to the outside runs, and as soon as they are large enough to rustle they are turned out on pasture in herds of about 100 head.

Before the creeps are placed, we have a clear alley the entire length of the building, and the feed is wheeled along the alley. After the creeps are in position we wheel the feed along the outside of the building. Water is supplied by hose, attached to hydrants along the front of the farrowing houses.

The arrangement is such that one man, by manipulating the panels and gates, can move animals through the alley, from one end to the other, without trouble. This is a convenience at all times and also makes the buildings quite suitable for breeding.

We have reduced the mortality of pigs from farrowing to weaning time about four per cent. Last season our mortality after weaning amounted to one-half of one per cent.

The Flaggler ranch of Corona is starting purebred Holsteins.

BERNSTEIN'S RANCH

POLAND CHINAS

Prize Winners. Money Makers.
Young stock, both sexes.
Boars ready for service.

W. Bernstein, Prop.

Hanford, Calif.

Poland Chinas

I have for sale a number of good boars ready for service and a fine lot of spring pigs, both sexes.

Will have the last of this month pigs sired by my new boar "Ontrall's Ideal," son of the famous Big Joe.

Pigs and prices are right. Let me know what you want.

N. HAUCK

Alton, Humboldt Co., California.

POLAND-CHINA WEANLINGS, from University Sunlight 3rd, No. 490446, and her registered daughters by Bouncer's Model, No. 205207, herd boar at University Farm. Write for low prices on these and other pure-bred Poland-China pigs. Louis K. Webb, Ranchito, R. F. D., San Jacinto, Cal.

REGISTERED

Poland Chinas & Durocs

Fine Stock Cholera Immune for Life.
Write for particulars and prices.

T. H. BECKMAN, Lodi, Cal.

Poland Chinas

250 lbs. in six months, our aim.
Imported sows. None better.

LINN & PORTER,

Route A. Modesto, Cal.

TREWHITT'S LARGE TYPE

Registered.

Poland Chinas

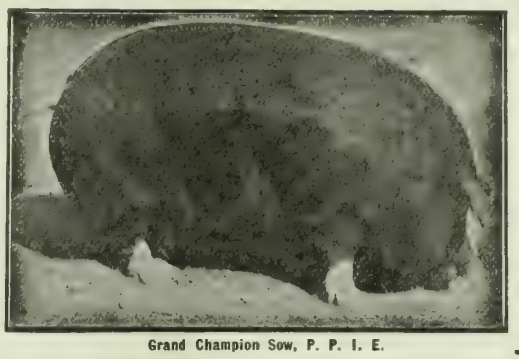
Prize-winners at Panama-Pacific Exposition.

Boars, Bred Gilts, Open Gilts, Clean, Smooth, Easy Feeders.
Boars transmit their good qualities. Sows have large strong litters.
No better stock anywhere. All stock guaranteed.

Inspection invited.

WRITE TO

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Grand Champion Sow, P. P. I. E.

Medium Type
POLAND-CHINAS

Choice breeding stock, both sexes, from Panama-Pacific International Exposition prize-winning strain. 12 firsts. Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows. $2145 cash awards. Write to

M. BASSETT,
Box P,
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Big Type Poland Chinas

Boars, Bred Gilts, Open Gilts, Brood Sows, clean, smooth, easy feeders. Boars transmit their good qualities. Sows have large strong litters. No better stock can be purchased anywhere at any price. Inspection of the stock invited. All of the stock is guaranteed.

The sows are bred to **IOWA WONDER**, my **Big Type Boar**, who is a son of the famous **A WONDER**, the Greatest Poland China boar living or dead.

The gilts are bred to **JOKER, the First Prize** boar in the **Under Six Months' Class**, at the Wisconsin State Fair of 1915. He is a son of **JUMBO HADLEY**, the **First Prize, Champion and Grand Champion**, in the **Two-Year-Old Class** at the same Fair. The Book, "The Poland China the Hog Supreme," free for the asking.

For further information, write

GEO. A. SMITH, Corcoran, Cal.



YOUNG'S
POLAND CHINAS

Large Type.
Herd Boar I. B. A. Wonder won first in Class and Reserve Champion at Panama-Pacific Exposition.
Weanling Pigs, $15.00 up.
None better.
Satisfaction or money refunded.

W. A. YOUNG,
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GLENVIEW POLAND CHINAS

Baby pigs from best families for sale worth the money. Pigs sired by Superba, P. P. I. E. Champion, and from my best sows.

WRITE ME.

C. R. HANNA, Route 3, Riverside, Calif.

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POLAND CHINA SWINE and HOLSTEIN-FRIESIAN CATTLE

DIMMICK BROS., Lemoore, Kings Co., Cal.

Registered Poland Chinas

Bred and selected for Economical Feeders. Weight per age.
High Dressing Percentage.

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BIG TYPE POLAND CHINAS

Gilts from Weanlings to one year old. Bred or open. Boars from weanlings to 8 months.

THE BROWNING STOCK FARM,

W. H. BROWNING, PROP. WOODLAND, CAL.

TUBERCULOSIS TESTING MUST BE OFFICIAL.

State Veterinarian Chas. Keane again advises us that tuberculosis tests made on or before October 1, by private practitioners, will not be recognized as official, in the enforcement of the new dairy laws which go into effect on that date.

He states that many dairymen are under the impression that these private tests will insure compliance with the law, but that such is not the case. After October 1, official testing of dairy cows may be secured free of charge, by applying to the State Veterinarian at Sacramento.

Questions About Pig Feeding.

To the Editor: I have 45 pigs between six and eight weeks old that are still with their mothers. I have just finished feeding old corn and shorts in shop, but will have to buy all feed from now on till the corn that I have planted gets ripe. Have been thinking that I would use milo to take place of corn. How would that do, also how should I feed it, as I have no concrete space that could be kept clean? Is there a preparation that should be kept before hogs to keep them healthy—copperas, salt, etc.—and how should one start with this so the hogs wouldn't get too much, or is there danger? Would like bulletins from the State Agricultural College. What is the address? Also, can there be any profit in fattening these hogs for market when feed is so high; milo $1.45 to $1.60 and shorts $1.85 per cwt? Would this be a balanced ration?—W. R. P., Hynes.

[Answered by Prof. J. I. Thompson, University Farm, Davis.]

[Milo maize at $1.45 to $1.60 per 100 lbs. is quite high in price to feed to hogs. If no pasture is available would suggest that some rape be sowed at once in order to provide pasture, which will lessen the cost of the grain part of the ration. If milo is to be fed it should be ground and may as well be soaked and fed in troughs. The amount of trough room to feed 45 head would not be enormous. In case barley can be bought for a lower price than milo it should be used. If the pigs are healthy and a reasonable amount of pasture such as rape or clover can be supplied, the gains even with barley at $1.40 should show some profit at the present price of hogs. However these pigs will just about be ready for market at the time the most of the stubble hogs are shipped in so that the price will undoubtedly be lower than now. The better chance of making a profit on these would, therefore, seem to be by hurrying them along.

Instead of buying shorts at $1.85 per 100 lbs., would suggest that tankage be secured, which will cost probably $2.00 to $2.25 per 100 lbs. This would seem to be higher, but it contains about 55 per cent protein, the material needed, where shorts contains about 15 per cent, so that it is much cheaper at the above mentioned price than shorts. If the pigs are fed a reasonable ration of barley or milo maize daily, allowed tankage in a box where they can eat it at will, and have plenty of pasture, they ought to make satisfactory gains.

Concerning the material to be kept before the hogs at all times, would suggest that instead of mixing a lot of things together, a box divided into several compartments be built with a cover above it, and in the separate compartments the following things be placed:

Air-slaked lime
Salt
Charcoal
Wood ashes
Bone meal, and perhaps
Copperas and sulphur.

There is a difference of opinion as to the value of the last two. The hogs will eat but little of any of these, and yet should have as much as they want whenever they seem to need it.

The experiment station work in Animal Husbandry is done at Davis, California. Available circulars and bulletins can be secured by addressing the station there or the Dean's office at Berkeley, Cal.]

Fast Hog Fattening.

[Written for Pacific Rural Press.]

Five to six thousand hogs per year are fattened by Geo. A. Long in Imperial Valley. About 3,000 per year are killed in his own packing house at Imperial. They are all vaccinated against cholera. They are raised on one of several big ranches and fattened mostly at the slaughter house. They average two pounds a day gain for about 50 days, according to Mr. Long.

When the hogs to be fattened are four to six months old they are graded according to size and put into the fattening pens. About six pounds of feed per day is given per 100 pounds live hog in three feeds. Two men do all the feeding, cleaning, loading, and unloading for the 1000 hogs generally being fattened.

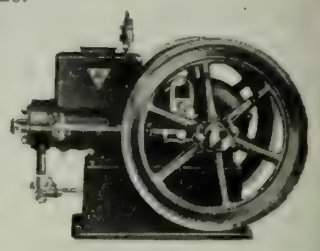
The ration is composed of about 5 parts whole milo corn mixed with 3 parts tankage, meats, waste from slaughtered animals, "soup," etc. This is steamed all together three or four hours and run out in two iron tank carts along a track to the fattening shed.

The shed contains 22 pens about 20 by 35 feet with an aisle along center and a track for the feed tank cars. The concrete floors slope rather steeply toward the outside and drain into a wide gutter outside the pens. Manure is scraped and flushed into this gutter, whence it is ricked with a Fresno scraper. The sides of the fattening shed are open, the roof is of corrugated iron high enough to work under conveniently. Fences between pens and along the outside ends are of woven wire. Fresh water is piped to a tank under the partition fence so that each tank supplies two pens. A trough is fastened in the center of each pen for the hot feed. Thirty-six to 45 shoats are kept in each pen. Self-feeders are constantly supplied with dry "rolled" corn run through a mill nearby so the corn is also distributed from cars on the same

Dependable Power

Can You Afford An Engine That Balks?

WHEN IT'S TIME to separate the milk, grind feed, cut silage or pump water for the stock or to irrigate, you cannot afford to waste time tinkering with an engine.
YOU WANT ONE that "will deliver the goods" any and all the time.



ALPHA ENGINES

Gasoline, Kerosene or Distillate

Are always "on the job" ready to deliver power when you want it.
NO BATTERIES OR COIL needed. All sizes are equipped with a "built-in" magneto that makes starting quick and easy without cranking.

1½ H. P. to 100 H. P.

THE VIKING PUMP

Self-Priming. **Positive Delivery.**
High Efficiency.
No Foot Valve or Priming Pump Needed.
James Barn Equipment. **Power Spray Outfits.**
WRITE FOR CATALOGS.

De Laval Dairy Supply Co.

San Francisco **Seattle**
"Everything for the Dairy"

DIGESTER TANKAGE

THE BEST HOG FOOD YOU CAN OBTAIN AT ANY PRICE.
We publish a sensible folder on hog feeding, and will send it free on request.

WESTERN MEAT COMPANY

ANIMAL FOOD DEPT., **704 Townsend St., San Francisco.**

HILLCREST STOCK FARM

Thornton S. Glide, Prop.
Davis, Cal.

SHORTHORN CATTLE

Shropshire and Merino Sheep

FOR SALE SINGLE OR CARLOAD LOTS



KING LANCASTER.
Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.
THEY HAVE GRAND CHAMPIONS BEHIND THEM.

BLACK LEG

LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials.
10-dose pkge. Blackleg Pills $1.00
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Use any injector, but Cutter's best.
The superiority of Cutter products is due to over 10 years of specializing in vaccines and serums only.
Insist on Cutter's. If unobtainable, order direct.
THE CUTTER LABORATORY, Berkeley, California.



REDWOOD TANKS. SILOS
Water Troughs, Windmills, Frames, and Towers. Steel and Wood. Prices the lowest.
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More Butter and Better Butter

YOUR HERD should average at least 500 lbs. of butter per year. A good Jersey herd will do even better—600 lbs. per year, and the butter will be of the finest flavor, texture, and color. There are many individuals of this breed producing 1100 lbs. They make good use of every ounce of feed, do not require fancy feeding, mature early, thrive in any climate, are steady producers, are beautiful and gentle. They pay big dividends on the highest priced land.



Our latest free book, "About Jersey Cattle," tells all about the development of this hardy breed. Send for it—*now*. You'll be glad you did.

American Jersey Cattle Club
388 West 23rd St., New York City



Registered Jacks

Range raised; Guaranteed satisfactory breeders. Field Jacks a specialty. Registered Shire Colts. Will trade for young mules, horses or land.

James W. McCord
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Imported and Homebred.

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63 prizes won by our horses at the Panama-Pacific International Exposition, including the premium championship for breeder.

Visitors and Correspondence Invited.
BLACK HAWK STOCK RANCH
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Brighton Herd

Registered Shorthorn
Bulls and Heifers
Berkshire
Boars and Sows
All ages for sale at all times.
H. L. & E. H. Murphy, Props.
Perkins, Cal.

Attention Dairymen!

Plant Sorghum for Green Feed or Ensilage.

SEED FOR SALE.

track. Filling these feeders takes about 15 minutes three times a day.

When feeding time comes, one man shovels it into buckets while the other distributes it in the troughs. This requires about an hour, two cars of hot corn and tankage being given at each feed.

PURPOSES AND AIMS OF SWINE BREEDERS' ASS'N.

[Written for Pacific Rural Press.]

The California Swine Breeders' Ass'n was organized at the University Farm at Davis, three years ago, adopting at that time the slogan "More and Better Hogs."

Like any young organization, it has taken time to secure a large membership and to work out a constructive plan for the advancement of the industry it represents. Unlike most livestock organizations, it is not entirely a purebred breeders' organization. A farmer who breeds for the market is considered as desirable a member as a breeder of registered stock.

At a meeting held in January of this year, C. B. Cunningham was elected president for the succeeding year and in order that readers may have a clear understanding of the contemplated future work, we quote Mr. Cunningham.

"The first thing as I see it," he states, "is to increase the following of the association from one end of the State to the other till it includes every raiser of hogs, whether he be large or small, near or far. It is not necessary, as I see it, that each one become a member of the State central association, but he should be a supporter of that association.

"To accomplish this we expect to appoint vice-presidents in each county, from our present membership, and through them organize county associations. We will endeavor to supply these local associations with literature and possibly at times with speakers, all tending to grow more hogs with the minimum of waste and the maximum amount of high-priced meat.

"And besides helping the producer to produce good hogs at the least cost, we are going to help him get a fair price for them. In other words, we will support anything that will advance 'More and Better Hogs' in California.

"Among other things that we hope to do for the breeder of purebred hogs is to secure better accommodations for him at the State and County fairs and inaugurate better selling methods."

At the present time the association has several hundred members, the annual dues being but one dollar, and according to Prof. J. I. Thompson, secretary of the association, with offices at the University Farm, Davis, the effect of past work is being noticed in the increasing numbers of swine growers who have been sending in their dues since the first of the year.

If you are a hog grower and have not as yet become a member of this organization, do so at once as it is only through strong organization that the above outlined program can be most effectually carried out.

A new Essex boar is being brought in to head the purebred herd of S. W. Millsap of Yolo.

"Remco" Air-Dried Redwood

PIPE For irrigation water, supply-power. Cheaper than any other pipe of equal size, capacity and endurance.

TANKS For all uses, in all sizes from 500 gallons to 500,000 gallons, and with towers if wanted.

SILOS For dairymen, stockmen, farmers. In sizes from 25 tons to 300 tons. The best silo made today.

All Remco products are built to your order. Only clear, air-dried redwood is used. Write us your needs and we will send you full information.

Redwood Manufacturers Co.
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Protection for California Livestock Owners

Having complied with all the requirements of the California Insurance Commissioner, and established general agency connections,

The Montana Livestock & Casualty Insurance Co.

is now ready for business in this State and is prepared to offer safe and sure protection to owners of all classes of Horses and Livestock, (with the exception of stock on the open range).

This Company is safe, sound, and has a reputation for the prompt payment of claims.

Some Facts About the Company that Stockowners Should Know:

The Montana Livestock and Casualty Insurance Company has
—paid-up capital in cash $108,530.75
—surplus as regards policy holders 118,829.07
—paid losses to stockowners during 1915 22,617.50
—the approval of the Insurance Commissioners of California, Washington, North Dakota, Utah and Montana.

Officers of the Company:

EDWIN NORRIS, Ex-Governor Montana - - - President
JACOB MILLS, Capitalist - - First Vice-President
WM. L. HOLLOWAY, Associate Justice Montana Supreme Court, - - - - - Second Vice-President
GEORGE B. CONWAY - - Secretary and General Mgr.
A. C. JOHNSON, President Montana Life Insurance Co., - Treasurer.

HOME OFFICE: HELENA, MONTANA.

For local agent arrangements,
Address DOUGLAS KEITH, General Agent,
602 Royal Insurance Building, San Francisco, California.



San Ramon Shropshires

WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second and Third. Champion Ram. Yearing Ewe, Second Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year First. Flock under one year, bred by Exhibitor, First Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total including American Shropshire Specials of 15 Firsts, 9 Seconds and 6 Championships.

PUREBRED REGISTERED RAMS AND EWES.
Individuals or Carload Lots.

BISHOP BROS., Agents. SAN RAMON.
Contra Costa County, California.
TED BALLARD, Shepherd. FRANK RUTHERFORD, Supt.

A NEW DAWN FOR THE PURE-BRED HOG.

(Continued from page 475.)

will have forgotten the fancier's prices of last fall for that game isn't his game. He hopes to sell to the farmer, the real producer of market pork, and that customer isn't paying $1,000, $500 or even two hundred dollars for boars. He has, it is true, raised his limit, but it still sounds more like $40 to $50 when he acquaints you with it.

As we have shown on another page, the possibilities of this customer and his market are unlimited, but he must be helped to realize the importance of producing the largest amount of marketable pork at the least cost and then work to get the highest price for his product.

To establish any right to offer it such help, breeders must sell right. Whether it be at private or public sale, the cull seed must not be offered. It may be all right for the butcher, but it is not going to further the purebred in the mind of the utility breeder. When he buys his first purebred he expects better results than he has been securing with the mongrel. If he is not disappointed he comes back for more.

Breeders, generally speaking, recognize this to be a cardinal principle in selling at private sale. Now that the auction sale holds out hope of a better method of distribution they must recognize the same condition. The auction method of selling livestock is undoubtedly a forward move and holds out many possibilities, but it needs a guiding hand to insure uniformly high quality, else the goose that lays the golden egg will stand a good chance of being prematurely cooked. The breeders alone hold the trump card in this matter. They can kill or cure.

An Education Campaign. — Producing the largest amount of pork at the least possible cost can not all be accomplished in breeding. C. B. Cunningham, president of the California Swine Breeders' Ass'n, is so strongly convinced of this that he has pledged his administration to carry on an educational campaign, centered principally on the two factors, feeds and marketing, that he hopes will reach every hog raiser in California.

This will be done in a constructive manner. Vice-presidents in each county will co-operate with the State central organization in distributing knowledge, first how to breed hogs, then how to feed them, and, above all, how to market them.

With due respect to all past attempts at hog promotion work in the State this is the most fundamental proposition that has ever been advanced by the breeding fraternity. It savors of the same principle as the national manufacturer who long ago recognized the need of developing his customers' field in order to develop his own. It gets to the very core of the whole situation, in that it builds, first and foremost, the utility end of the hog game. It recognizes the fact that when the producer is prosperous and expanding, the purebred industry is prosperous and may expand.

Never has the future of the man who breeds good registered hogs been brighter.

With the Live Stock Men.

DAIRYING.

A cow-testing association is practically organized in Glenn county.

Jas. B. Irwin, Holstein breeder of Minneapolis, visited R. F. Guerin of Visalia recently.

Butter shipments are being made from San Francisco to northern as well as eastern points.

The American Jersey Cattle Club has endorsed rigid enforcement of laws regarding oleomargarine.

A sale of Holsteins on the State Fair grounds Oct. 6 is planned by the Cal. Pedigree and Sales Co.

A Cleveland milk producers' strike was averted by agreement with city dealers, who yielded a better price.

Butter must be retailed in California in one- or two-pound squares hereafter rather than in fractional parts of pounds.

Chas. Bonaficio of Monterey county is to move his 100 high grade Holstein cows to the David Jacks Corporation ranch.

Southern Illinois milk producers struck April for an advance of 10 cents per hundred pounds to $1.40, which the dealers had refused.

Thirty-one Holstein heifers bred to King Pontiac Mayflower were brought to Sacramento recently from New York by Dr. E. J. Weldon for himself and F. W. Kiesel.

The 48th annual meeting of the American Jersey Cattle Club will be held at the Club House, 324 W. 23rd St., New York, Wed., May 3, at 11 a. m., writes Secretary R. M. Gow.

The Holstein, Sir Veeman Korndyke Pontiac, newly owned by R. F. Guerin of Tulare, is out of a 30-pound daughter of a 29-pound cow, and he has many 30-pound daughters.

F. M. Johnson of Napa will begin at once to test the five Jersey cows recently bought from the Sheldon Estate. His herd bull, bought in the East, is sired by Mary Maiden's 3rd Son.

Shipping butter from San Francisco to Chicago in boxes rather than tubs was the only criticism of a carload recently, which scored over 92 on arrival. An alfalfa flavor was noticed but not criticised.

W. E. King of Imperial Valley has engineered two deals in which 163 cows sold for $16,300, says the El Centro Progress. L. Oudries bought 70 cows for use in Imperial Valley and H. Bloemsma of Meloland sold 93 head to Reese Snowden of Lancaster.

Th Oakdale Creamery is having trouble to handle the increasing quantity of milk from that section, though the plant capacity was doubled a few months ago and has lately been putting out 2500 pounds of butter per day.

Another 1000-pound-butter Jersey, Sadie Crown Princess, has completed a record of 16,578.4 pounds milk, 876.7 pounds fat or 1031.5 pounds butter. She ranks tenth in the breed for butter fat, and ninth for milk. She is owned by H. F. Probert, Jackson, Mich.

A new herd of highly purebred Ayrshire heifers has been established by the Sullivan Investment Co. at Grass Valley, most of them having come from eastern Canada. The bull, Saladin of Steybrae, is out of May of Kelso which gave over 7,000 pounds of 4.3 per cent milk during her first lactation.

The second carload of butter shipped to Chicago by the Visalia Co-operative Creamery left Apr. 5 according to Mgr. N. J. Beck. The Lucerne creamery of Hanford helped make up the shipment. It will be remembered that the cream grading policy is what makes this butter keep after long distance shipment.

The J. H. Harlan Co. of Woodland have nine more Holstein cows in A. R. O. The Jr. 2-year Modjeska Crane 3rd made 19.14 pounds butter from 372 pounds milk in 7 days. The 4-year Margie Moori 2nd made 22.7 pounds butter in 7 days, and 90 pounds in 30 days. Tidessa Marjorain, 10 years old, made 25.44 pounds butter in 7 days and 104 pounds in 30 days.

BEEF CATTLE.

A. B. Hammond has bought 6 purebred Shorthorn cows for his Chico herd.

All states have removed all restrictions from the movement of feeding cattle into or out of Chicago.

What is said to be a new disease has recently killed 23 head of Kern county stock on two ranches. Is it anthrax?

The highest price of the year for baby beeves at Kansas City was $9.85 per cwt. paid April 3 for 50 heifers averaging 622 pounds.

Two fat steers prepared by Thornton Glide of Davis for the P. P. I. E., but not exhibited, were recently sold to the local butcher, above 1700 pounds at 16 and 20 months old.

Cattle losses for the past year are estimated by the U. S. Dept. Ag. at 2.2 per cent and 1.96 per cent from disease for California and the U. S. respectively. The 10-year averages are 2.4 per cent and 2.01 per cent. California must have been lagging, but is improving.

The Northern California Stockmen's Association met at Redding March 22 and elected the following officers: President, William Junkans; secretary, M. D. Lack; treasurer, George A. Grotefend; vice-presidents, Mrs. Rhoda M. Menzel, for Shasta county; William Forster for Trinity county; James Long for Tehama county, and J. B. Parker for Siskiyou county.

SWINE.

Bruce Cornwall of San Francisco has sold the O. I. C. boar, Pattern Maker, to H. S. Yates of Holt.

The Swineland Farm of Woodland reports hog sales excellent and a new crop of pigs coming along in fine shape.

Swine breeders of Imperial Valley will hold a hog show at El Centro May 26 and 27 under the auspices of the Farm Bureau.

Nate Hauck of Alton, Humboldt county, will have pigs the last of April, sired by his big type Poland China boar, Cantrall's Ideal, which is a son of the famous Big Joe.

A. M. Henry's big type Poland China herd is nominated in the Cal. Poland China futurity which will be held in connection with the next State Fair.

A. M. Henry of Farmington has recently bought two Poland China sows and a fine boar from W. J. Hather of Neb. and a boar from Peter Mouw of Iowa.

The Flaggler Ranch of Corona has purchased Duroc foundation stock from Peters, Lamson & Walker, a boar by P. & L.'s Defender and one by Ames Boy; also ten gilts.

Peters, Lamson & Walker of Devore have sold the Fontana Land Co. two yearling boars. Also fifty gilts to Mr. Thompson of Holtville and ten sows to Mr. Haag of Holtville.

Losses of hogs from disease the past year are estimated by the U. S. Dept. Ag. at 4.1 per cent for California as against 3.7 per cent for a 10-year average; for the U. S. the losses the past year were 6.63 per cent as against a 10-year average of 6.62 per cent.

The Tulare County Hog Raisers' Ass'n has drafted a county ordinance to help in controlling their two cholera outbreaks, and presented it to the supervisors, who passed it April 6, to become effective at once. It provides that every hog found dead must be cremated or buried three feet deep before sundown.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

BIG-TYPE POLAND CHINAS—One to a carload. Any age, either sex. 600 on hand. They have plenty of size, extra good hams and shoulders, strong arched backs, great length, depth and thickness of body, with good looks as well. Many are sired by IOWA WONDER, a 1000-poundsr in show condition. I believe his pigs are the best in California. Visitors say they are the best they have ever seen. He sires the kind that grow faster and larger, have more, better and stronger pigs, and are more practicable and profitable—the kind that are highly satisfactory. Extra special prices on account of being overstocked. I have hogs galore. Prices will surprise you. Satisfaction guaranteed. Write Geo. A Smith, Corcoran, Cal

BILLIKEN HERD OF IMPROVED CHESTER WHITES—The Money Makers. Everything registered and cholera immune. Nothing to offer for immediate delivery. Sows now farrowing. The pigs from these sows will be ready to ship during late May and June. Am booking orders now for these. The offering represents the very best and most popular blood lines the breed produces. Sires and dams by Champions and Grand Champions. Let me have your orders early. C. B. Cunningham, Mills, Sacramento County, California.

REGISTERED DUROC-JERSEYS—ALL AGES—We are booking orders for Spring pigs out of sows sired by full brothers of "I Am Perfection Wonder," sire of Grand Champion sow at Panama-Pacific, and from others equally well bred. Also offering about 30 exceptionally choice fall boars and gilts. This stock is in first-class condition, breeding guaranteed, and of the finest blood in existence. Prices reasonable. For particulars, write Haden Smith, Route 1, Box 97A, Woodland, Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES — World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

BIG TYPE POLAND CHINAS—My hogs are sired by California Wonder and Big Chief, imported direct from Iowa. There is no better blood. All hogs eligible to registration. C. A. Cooley, Durham, Cal.

BLATCHFORD'S PIG MEAL weans easily and safely; no trouble; no milk. Write for free folder, "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

REGISTERED PUREBRED BERKSHIRE PIGS — Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

LARGE, QUICK MATURING registered Berkshires. Both sexes, $10 each for weanings. Older ones at farmer's prices. J. M. Bomberger, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limied supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

RANCHO RUBIUS—Duroes all sold except one service boar and a few October pigs. Spring litters will be "best ever." Elmer Lamb, Ceres, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen S. Day, Box 1140, Sacramento.

ROSELAWN STOCK FARM—Registered Poland Chinas and Shorthorn cattle. Young stock, both sexes, for sale T. B. Gibson Estate, Woodland, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Price and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

REGISTERED BERKSHIRES—For sale bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

PIGS OUT OF SUPERBA—Panama-Pacific Grand Champion Poland China. Booking orders now. Chas. R. Hanna, Riverside, Cal.

BERKSHIRES OF QUALITY bred right, fed right, are right. Both sexes for sale. Prices very reasonable. U. Hartman, Ripon, Cal.

DUROC OF QUALITY—Predominating bloods of Defender, Buddy Ky, Crimson Wonder. C. T. Thompson, Bishop, Cal.

REGISTERED DUROCS of guaranteed breeding. Bred gilts, service boars and fall pigs. H. E. Boudier & Son, Napa.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal

REGISTERED POLAND-CHINA SWINE — Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

REGISTERED HAMPSHIRES—Winners at P. P. I. E. Stock of all ages. W. T. Gatton, Box 231, Gardena, Cal.

REGISTERED DUROC JERSEYS—All ages, either sex. Some very choice gilts and boars. R. R. Houston, Byron.

REGISTERED BERKSHIRES — Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

PURE-BRED BERKSHIRES—Stock of all ages. Bros. Bourne Ranch, Route 3, Box 172, Santa Rosa, Cal.

REGISTERED DUROCS—All ages. One yearling boar. Satisfaction guaranteed. Frederick M. Johnson, Napa.

REGISTERED BERKSHIRES — Prize-winning stock. Sunnyside Stock Farm, Perkins, Cal.

Humboldt sheep men are holding their wool on account of rising prices.

At the Napa County Livestock Ass'n meeting at St. Helena Apr. 1, Dr. B. J. Cady told the members that two things are necessary to eradicate cholera: information and co-operation.

The River Bend Farm, of St. Helena, has recently purchased a daughter of the great "Defender," recognized as one of the best of Duroc boars. This sow has been bred to "Orion's Pal." Napa county is certainly getting on the Duroc map with its twenty herds of these popular purebred hogs.

A. D. McCarty of the Riverina Farms, Modesto, writes: "Out of 44 Yorkshire sows that we have to farrow, eight litters so far have averaged 10½ pigs. One sow, Nema 8th, farrowed and is raising 12 sow and 2 boar pigs, making 57 pigs farrowed by her in four litters. One of her gilts farrowed a few days under a year old, 13 pigs, and is raising 12. Pearl 4th farrowed 11 and is raising 9."

J. P. Daggs of Modesto writes, "I just got a young Gold Model boar from Prof. H. W. Mumford of Urbana, Ill. Sales made in March, 1916: 10 sow pigs weaned and a boar, to Ed Dunbar, Manila, P. I.; 3 gilts and boar to W. W. Perkins, McFarland, $270; 1 boar to Wm. McIntyre, McFarland; 1 boar to J. F. Martin, Yuma, Ariz.; 3 gilts bred to the new boar, to S. H. McKenny, Long Beach, $300.

SWINE.

50 HEAD OF SOWS bred to IOWA WONDER for spring litters. 60 head of gilts bred to JOKER for spring litters. 50 head of open gilts. 300 head of young pigs three to four months old, both sexes. These pigs are sired by IOWA WONDER, a son of A Wonder. JOKER is the First Prize boar, in the UNDER SIX MONTHS CLASS at the Wisconsin State Fair of 1915, and is a son of JUMBO HADLEY the FIRST PRIZE, CHAMPION and GRAND CHAMPION TWO-YEAR-OLD at the same Fair. BIG TYPE. I am offering this stock at extremely low prices. The Book, "The Poland China, the Hog Supreme," free for the asking. Write Geo. A. Smith, Corcoran, Cal.

YOUNG'S POLAND CHINAS—Large type Boar, I. B. A. Wonder won first and reserve champion P. P. I. E., weighing 730 lbs. under 2 years in breeding condition. Weanling pigs, either sex—none better—$15 up. Satisfaction or money refunded. W. A. Young, Lodi, Cal.

DUROCS AND BERKSHIRES—Prize stock. Guaranteed. Young pigs, $10 each. One yearling Duroc boar, $20. Write for what you want. We have it. Perkins & Co., Perkins, Cal.

REGISTERED DUROCS — High model stock of both sexes. Twenty sows, bred or open, for sale. River Bend Farm, St. Helena, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED DUROC-JERSEYS — Service boars and fall pigs. Also two mature sows—bred. S. S. Southworth, Napa.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED BERKSHIRES—Big-boned. Cholera immune. Riccomi Bros., Mountain View.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRE PIGS—Write or call. Greenwood Ranch, Brentwood, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED POLAND-CHINAS—The kind that please you. J. M. Bernstein, P. O. 329, Hanford.

REGISTERED BERKSHIRES — Weanling pigs, $10 each. G. A. Casey, R. 7, San Jose.

REGISTERED POLAND CHINAS—Large type C. M. Ketson, Route "A," Ceres, Cal.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

REGISTERED BERKSHIRES — Young boars for sale. Alexander and Kellogg, Suisun, Cal.

REGISTERED BERKSHIRES — Young stock for sale. W. White, Elk Grove, Cal.

"BOARS"—Pure-bred Durocs. Write for description. A. Holdridge, Dixon, Cal.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

CHAS. GOODMAN — Breeder of high-class Berkshire swine. Williams, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. F. Harrold, Orland.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

READAKS RANCH herd of registered Poland Chinas. J. Hanna, Gilroy.

CLOSING OUT SALE of registered Durocs. Champion herd of Placer county. I am leaving for the East. 40 head to pick from. All sizes, all ages and all prices. For particulars write or call on F. E. Stevens, R. F. D., Lincoln.

LARGE TYPE POLAND-CHINAS—Now booking orders for Spring pigs from our Nebraska prize-winning sows. H. I. Marsh, Route A, 348, Modesto.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE—C. P. CONWAY, Ripon, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

BEEF CATTLE.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco, or H. J. Macomber, Paicines, Cal.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of imported Villager 295884.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON-NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

HEREFORD BULLS—H. H. Gable, Diamond G Ranch, Esparto, Ca.

GEORGE WATTERSON—Breeder registered Herefords, Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

FOR SALE—20 head purebred Holstein cows producing now 100 gals. 4 per cent milk daily. Also herd bull Prince Lorenzo De Kol, Reg. No. 136003 H. F. H. B. G. W. Stone, Byron.

WANTED—About 25 good dairy cows to be paid for in 12 equal monthly installments. Payment secured by mortgage on stock. Party reliable. Box 205, Pacific Rural Press.

VANDERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly records. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butters as two-year-olds. A. A. Jenkins, Tulare.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

FRANK MEACHAM, Petaluma, California — Breeder Red Polled Cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS — Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

BULL CALVES from a grandson of Celantha Johanna Lad and from a son of King of the Pontiacs. J. W. Benoit, Route C, Modesto, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

HOLSTEIN BULLS out of A. R. O. cows, sired by a son of King of the Pontiacs. Prices reasonable. J. H. Harlan Co., Woodland, Cal.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

ELEVEN REGISTERED HOLSTEIN COWS—Priced to sell as a bunch at very low figure. K. W. Abbott, Milpitas, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

HOLSTEIN-FRIESIAN CATTLE and Berkshire Hogs. H. B. Goecken, Breeder, Goecken Heights, Livermore, Cal.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

REGISTERED JERSEY BULLS from register of merit cows. D. F. Conant, R. "B," Modesto.

BREEDERS OF A. R. O. Holstein Freisian cattle exclusively. Dirk Dairy Farm, Lemoore.

WHICH?

TEMPORARY GATES.

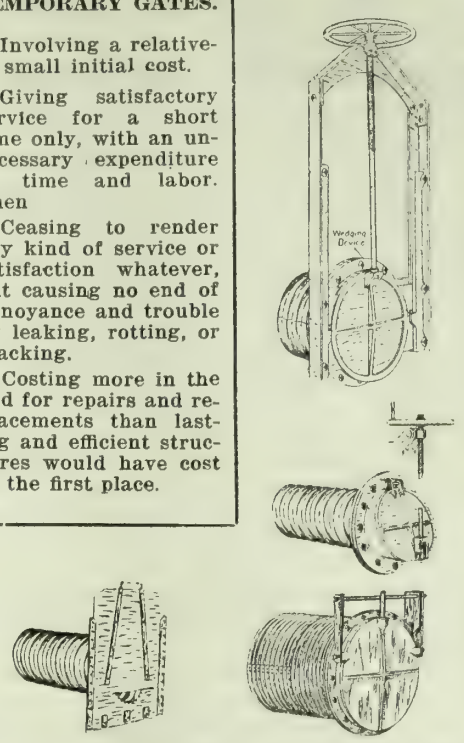
Involving a relatively small initial cost.

Giving satisfactory service for a short time only, with an unnecessary expenditure of time and labor. Then

Ceasing to render any kind of service or satisfaction whatever, but causing no end of annoyance and trouble by leaking, rotting, or cracking.

Costing more in the end for repairs and replacements than lasting and efficient structures would have cost in the first place.

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Rendering excellent service at all times, season after season, with a minimum expenditure of time and labor.

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REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

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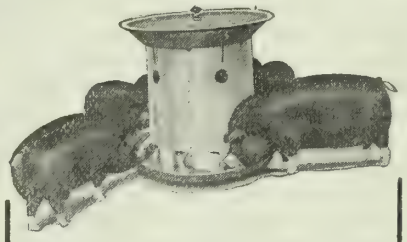
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MISCELLANEOUS.

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1915 VALUE OF DAIRY PRODUCTS.

Butter, 67,522,409 pounds	$19,378,932
Cheese, 6,105,775 pounds	860,944
Condensed, evaporated and powdered milk, 16,579,317 lbs.	1,352,959
Casein, 690,750 pounds	34,537
Market milk, cream and ice cream	12,000,000
Calves produced on dairies	3,000,000
Skim milk and butter milk	1,750,000
Total	$38,377,342

Grain and Concentrates for the Horse.

[Answered by Professor F. W. Woll, University Farm, Davis, Cal.]

The concentrates used in feeding horses in different parts of the country are: **Among the cereals,** oats, Indian corn, barley rye, low-grade wheat; **of other seeds,** Kaffir and other sorghum varieties, beans, peas, cow peas, cotton seed; **of factory by-products,** wheat bran and middlings, linseed meal, cottonseed meal, peanut cake meal, cocoanut meal, dried distillers' and dried brewers' grains, malt sprouts, dried beet pulp, and molasses.

Among the concentrates, oats are, in general, considered of a higher value in feeding horses than any other grain feed. They are eminently adapted for this purpose, and are relished better by horses than other cereals. Oats can be fed safely to horses, since the digestive tract of these animals does not hold a sufficient quantity to produce serious disorders. Owing to the presence of the hull, oats form a light and loose mass in the stomach, which makes it easy for the digestive fluids to permeate the mass and insure a more complete digestion. Oats should be fed whole to horses, or at least crushed or rolled, except in the case of old horses with poor teeth. If corn and oats are fed, the grain should be coarsely ground, as it may otherwise give rise to colic and indigestion when swallowed fast by hungry animals.

While oats form the common cereal fed to horses in most parts of the country, other grains are used in different sections and countries: Indian corn largely in the corn belt and the southern States, barley on the Pacific coast, in European countries, and North Africa. Barley is the common horse feed in Arabia, which is world-famous for its fine breed of horses.

In this State barley, or barley and oats, are more generally fed than oats, largely as a matter of economy, since oats are at least $5.00 to $6.00 per ton higher than barley, on the average. Both cereals make excellent horse feeds and may be considered of similar feeding value. Oats have an advantage in their higher protein content, while barley is higher in starchy components and, therefore, is a better supplementary feed for alfalfa hay than oats.

Indian corn is the main substitute for oats in the horse's ration in corn-growing states. Numerous trials have shown that it is a safe and satisfactory horse feed and that the best method of feeding it is to give a mixture of the two grains. Immense quantities of "ground feed" or chop (corn and oats) are sold every year in central and eastern States and fed to horses and dairy cattle, the proportion of each being dependent on the market prices of the grains.

All the other concentrates than those referred to above—**oats, corn and barley**—are of minor importance as horse feeds, being fed only in exceptional cases and as a part of the grain ration.

To the farmer or horse owner in this State only a couple of these miscellaneous feeds are of sufficient interest to be discussed here. The question of substitutes for barley is of no special interest so long as this is the cheapest available concentrate for horses on our market, as is generally the case. The only feeds of those mentioned that are likely to be lower in price are dried beet pulp, cocoanut meal and molasses. These cannot be fed as sole concentrates for horses, but may be fed in mixture with grain. Dried beet pulp will be rendered palatable to horses by adding an equal part of molasses: Two to three pounds of each will take the place of an equal amount of grain. Molasses has nearly a similar feeding value to grain, but must be fed in moderate quantities only on account of its laxative properties. Fed as suggested it serves both as an appetizer and a tonic for horses out of condition, and improves the palatability of the rations fed.

The other feeds mentioned may make up a part of the horse's grain ration when they are produced on the farm or can be obtained at a reasonable price, but they will never become general or important horse feeds under the conditions prevailing in this State, unless radical changes occur in the system of agriculture and the market conditions in the State. Farmers who are in position to try any of them should bear in mind that the horse is a creature of habit, and only gradual changes can be safely introduced in his ration. The results obtained in feeding horses, perhaps more than with other farm animals, depend largely on the feeder and the care and intelligence which he exercises in handling them. By a study of market quotations and of available feed supplies he may, however, at times be in a position to considerably cheapen the concentrate part of the ration without detracting from its efficiency.

As to the proportion of the concentrates for horses, the general rule is to increase the grain feed with the amount of work the horse has to do. Idle horses can get along with only a few pounds of the concentrates daily if a supply of good hay or other forage is available. The ration for hard-worked horses, on the other hand, must include a larger amount of concentrates than of hay. The simplest ration for common work horses in this State is about ten pounds of alfalfa hay and twelve pounds of barley, or its equivalent of other concentrates. In the case of horses doing very heavy work, it is often necessary to feed considerably more grain than this to prevent their losing flesh, but the quality of hay fed determines, to a large extent, the amount of grain that will be required.

Remarkable IHC Mower Record



LAST spring when Lester Brown, of Ottawa, cut his 40-acre alfalfa field with an I H C mower, he completed just about one-millionth of the total work done by I H C mowers during 1915. That interesting fact presents in a striking way the popularity of the reliable mowers and rakes sold under the old trade names—**Champion, Deering, McCormick, Milwaukee, Osborne** and **Plano.**

I H C mowers and rakes were the first ever made. Their sales have grown larger steadily, year by year, showing plainly what the farmers who use them think of them. They cut clean and close in all kinds of grass, clover, alfalfa, or other hay crops. With reasonable care they do good work for many years. It is always easy to secure repairs, new parts, or special service. They are sold by local dealers whose business it is to see that you are satisfied.

If you are already using I H C haying machines, we need say nothing except to remind you to look over your machines before you take them to the field and order now any repairs they may require. If you have not yet used any of them, see your local dealers, or write us for catalogues and other information about **International Harvester** haying machines.

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At Prices within Reach of Every Breeder and Dairyman.



A Grandson of Tilly Alcartra.

We have several splendid grandsons of this now famous cow which we can deliver to you at prices which will suit the pocketbooks of every dairyman wishing to improve the quality of his herd, whether it be a grade or pure-bred herd. These bulls are sired by our herd bull, Prince Alcartra Korndyke and out of A. R. O. cows, and are the only living grandsons of a cow having a record of over 30,000 pounds of milk in a year. Such an opportunity for increasing production has never been offered **DAIRYMEN AND BREEDERS** in California, price and quality considered. Buy one of these bulls and solve your low production problem. Write

J. S. GIBSON CO., Box 97, Williams, Cal.
"THE NAME GIBSON INSURES QUALITY."

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WATER PIPE

Positively lowest prices—all sizes. Finest water pipe, well and water casing, riveted and irrigation pipe, wrought iron fence posts, etc. Big stock. Prompt shipments anywhere. Write, phone or wire for quotations.

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What is the use of preparing a good seed bed and planting seed that cost good money if you let squirrels and gophers eat your profits. These pests are a constant danger to crops and a constant menace to the family's health.

Carbon Bisulphide

has for over 30 years proven to be the most effective—the only sure killer of squirrels, gophers, rats, prairie dogs, ants, moles, yellow jackets, moths, weevils, lice, etc. It is easy and safe to use.

Write today for interesting folder and learn how this profit saver works.

Wheeler, Reynolds & Stauffer
624 California Street
San Francisco California



Pedigreed Holstein Bull $250

I am now offering a very fine bull out of a high-testing dam, who was sired by King Pontiac Premier, one of the best sons of King of the Pontiacs, 165 A. R. O daughters. His dam's present record is 21.09 pounds, average test, 4.11%, made at four years old. This record was made under verw unfavorable circumstances, and she will make around 25 pounds with next calf. On the sire's side the bull has the blood of Pietertje Hengerveld Count De Kol, 99 A. R. O. daughters; and dam Deutschland Creamelle, is out of Creamelle Vale, the former world's championship milk cow. This young bull is almost white in color and is ready for service. His high test breeding will count in your herd.

Write or come and see him.

F. STENZEL.

San Lorenzo, California.

THICK, SWOLLEN GLANDS



that make a horse Wheeze, Roar, have Thick Wind or Choke-down, can be reduced with

ABSORBINE

also other Bunches or Swellings. No blister, no hair gone, and horse kept at work. Economical—only a few drops required at an application. $2 per bottle delivered. Book 3 M free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Cysts, Wens, Painful, Swollen Veins and Ulcers. $1 and $2 a bottle at dealers or delivered. Book "Evidence" free.
W. F. YOUNG, P.D.F., 86 Temple St., Springfield, Mass.

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GOMBAULT'S



Caustic Balsam

A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*

Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

A CHANCE TO BUY TUBERCULIN-TESTED COWS.

[Written for Pacific Rural Press.]

The supply of tuberculin-tested dairy cows has been limited for several years and dairymen who maintained tuberculin-tested herds have found it exceedingly difficult to secure good producing and tested animals at prices within reason.

With the enforcement of the new dairy laws which go into effect October 1, this condition promises to become more acute as the demand will be greatly increased and prices correspondingly higher.

For these reasons the owners of the Rancho Dos Rios herd of Jerseys at Modesto expect a large gathering of buyers at their sale of registered and unregistered cattle, to be held at their ranch May 6, as most auction sales, especially of unregistered animals do not contain tested animals.

All of the 125 head to be offered in this sale have been tuberculin tested during the past month, thus insuring the buyers against possible loss from this source.

As producers at the pail the animals in this sale are out of the ordinary as they represent years of culling, and were it not for the fact that a large number of heifers are about to freshen, in the herd of over 400 head on the ranch, together with a shortage of feed, these cows would be kept in the milking herd as at present.

Mr. Mailliard, owner of the herd, advises us that by the time this appears the catalog will be ready for mailing, in which pedigrees and full descriptions of each animal to be sold will be given.

NOT AFRAID OF CHOLERA.

[Written for Pacific Rural Press.]

There was hog cholera within half a mile on both sides of Peters, Lamson, and Walker's purebred Duroc herd of 600 hogs near Holtville last January, and big flocks of blackbirds were flying back and forth. L. L. Lamson, who has charge of the ranch, didn't wait for the hogs to get sick. He cleaned them out thoroughly with sulphur, charcoal, and condition powders to prepare them for vaccination. He finished immunizing the last of the 600 on Jan. 7. No grain was fed for 10 days after vaccination. The hogs were run only on their usual green alfalfa pasture "to prevent overtaxing their digestion."

The few suckling pigs were not vaccinated, as, according to Dr. R. W. Ritter who did the work, they resist cholera while suckling. They are better vaccinated with serum alone when ready to wean, and again 60 to 90 days later with the double treatment. He used over 30 bottles of 500 c.c each of serum from Kansas City, on the Peters, Lamson, and Walker herd.

None of the pigs became much sick on account of vaccination; and all are now free from danger.

An additional precaution of Mr. Lamson, that should be on every hog farm, is the box in which a gunny sack is kept soaked with a disinfectant. Visitors are expected to carefully wipe their shoes on this sacking before entering the pens. It takes only a minute, and should be invariably insisted upon.

Rancho Dos Rios

SALE OF

Jerseys at Auction

Modesto, Cal., Sat. May 6, '16

REMEMBER, THIS IS A FOUNDATION SALE. The animals in this sale have been selected for our own dairy and are the result of years of careful breeding and selection.
THEY ARE HEAVY AND CONSISTENT MILKERS, and we would not part with them if it were not for the large number of heifers on our ranch, which will soon freshen. **Most of them are fresh or in calf to our herd sires.**
40 HEAD OF REGISTERED ANIMALS ARE INCLUDED in the offering, only four or five of that number being bulls, and each male we offer is a **REAL HERD HEADER.** Among the lot is our great proven sire, Dos Rios Pogis, a great grandson of Hood Farm Toreno, who has 34 daughters in the list of test cows with records up to 1047 pounds butter.
85 HEAD OF UNREGISTERED COWS will be sold. This is the finest opportunity ever offered dairymen in California as the breeding of most of this lot is the same as that of the registered animals in the sale. They are of pure breeding, but not eligible to registration in A. J. C. C..
For full pedigree and description of each animal to be sold,

125 HEAD,

95 Per Cent Females, all Tuberculin Tested

Send for BIG CATALOG NOW READY.

Rancho Dos Rios

MODESTO, CAL.

Auctioneer: COL. BEN. A. RHOADES, Los Angeles.
Assisted by M. P. Keppford, Modesto.

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providing you Vaccinate your hogs with I. S. V. Co. hog cholera serum, made under government supervision, License No. 25. We guarantee your hogs immune against cholera. Have your banker ascertain if our guarantee is good. We teach the farmers how to vaccinate their hogs FREE. Write for FREE BOOK on Hog Cholera. Costs you 22 cents per head to immunize your pigs indefinitely, when three to ten days old.

Address L. B. Green, Mgr., or Dr. W. J. Embree, V. S., 429-30 Bryson Bldg., Los Angeles, Cal., Inter-State Vaccine Co., of Kansas City, Mo.

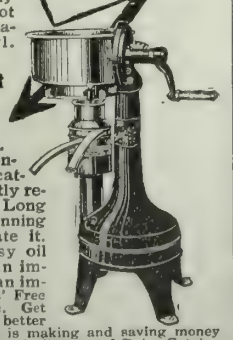
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EMPRESS LASS, Grand Champion Jersey Cow at Alaska-Yukon Exposition, and several times at California State Fair, gave 82.32 pounds fat during December, 1915, under dairy conditions.

Her Grandsons and other Bulls from good producing cows for sale.

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Holstein Cattle
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Poultry for Profit---Producing and Marketing.

HOW BEST TO MARKET SMALL BROILERS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

During the early spring months, there is a big demand for small broilers. The small broiler should weigh 1 to 1¼ pounds; but when the quantity is scarce they are acceptable if a little under one pound. This year prices and demand have been very good.

For those who live far from the city, commission charges and express have very much reduced the profit. So to get the full price for the product of your toil, it is far better to take the time to make a business trip to the city and look up a market of your own. Get closer to the consumer than is possible by passing your broiler through several hands.

Open Markets.—In all large towns or cities there are what are termed "markets." This means a place that handles first-class meats, poultry, game, etc., direct to the consumer They are both wholesale and retail dealers, and when possible they always buy from producers who are not so far away. Usually they pay a little higher than market price, besides paying the express charges and returning coops.

Possibly, also, there are a few pounds less in shrinkage, for we all know that if an animal or bird is kept without food or water while it is passed along and weighed on several scales, it will lose more than if weighed just once and the figures put down.

Advertising. — The next best method is to advertise for bids from clubs, high-class restaurants and hotels for a certain number of small broilers per week.

Have some neat letter-heads printed and envelopes with the name of your farm and your own name in the left hand corner. This is businesslike and will make a good impression on those who receive it. In your letter state what variety of fowls you keep; give color of skin, legs, etc.; and ask whether they desire the broilers alive or dressed. If you contract to furnish a club, restaurant, hotel, or hospital with a certain quantity and quality of broiler and get your price right—and unless you do get right prices don't contract—you have a steady, profitable business as long as you keep up your standard, for if one man happens to go out of business another will take his place and he will want your broilers because his customers will call for them.

Parcel Post.—I don't really believe that there could be any sort of trade in small broilers through parcel post. During the rainy season, our mails are too uncertain, rural routes are too long for carriers with heavy vehicles, and light ones would not carry much weight. Outside of the first zone the parcel post offers no inducements to the producer who wishes to reach the consumer with poultry products, except eggs.

DO PIGEONS HARM TREES?

To the Editor: Can you give me some information as to the habits of pigeons and the amount of feed required for squab raising; what is the composition of the "squab feed" sold by dealers; and would the pigeons harm the trees in my 40-acre orchard?—G. W. J., Halleck.

[Answered by Geo. H. Croley.]

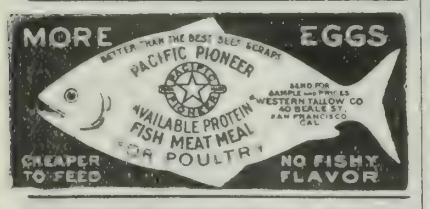
[They breed in pairs; and for squab raising pay best when confined in a small wire enclosure or aviary at one end of which is a shed or house that is completely closed and draft proof except in front, which is often entirely open; some breeders partially close this front. Pigeons require an abundance of fresh air, but quickly sicken and die from the effects of drafts. It is roughly estimated that each pigeon eats 35 pounds of feed each year. The commercial pigeon and squab food is a balanced ration composed of 15 or 20 sorts of peas, grains, and seeds; to successfully produce squabs, the parents must be furnished with a great variety of properly assorted food stuff including some peas. We never heard of pigeons injuring orchards.]

POULTRY NEWS NOTES.

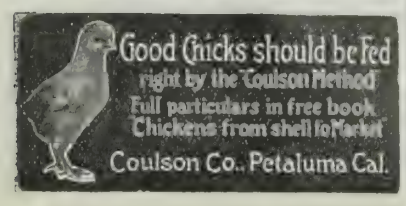
[Answered by Geo. H. Croley.]

A number of small hatcheries that have recently started near Turlock and Ceres report a ready sale for all the chicks they can hatch.

It is worth going miles to see the flocks of fowl belonging to D. E. Terrill of Denair; so says Mr. F. L. Hall. Mr. Terrill says he feeds no waste products, but uses only dry mash, scratch feed, and greens, with







Poultry Breeders Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

WYANDOTTES—Beautiful, useful and profitable. Best for showing; best for egg-laying; best for table. Largest Wyandotte Farm in the Southwest and the only complete family of Wyandottes known. Eleven varieties and each from the finest strain bred in the United States. Hatching eggs and baby chicks reasonable. Write us for full particulars. VILLA WYANDOTTE FARM, Villa Road, Lamanda Park, Cal.

ALL KINDS OF BREEDING and laying hens, roosters and pullets. Petaluma incubators, new and used. Baby chicks of Brahmas, Orpingtons, Anconas, White and Barred Rocks, Rhode Island Reds, Black Minorcas, Buff, White and Brown Leghorns. Best quality. Prices reasonable. Immediate deliveries. Brown's Poultry Yards, 2550 San Pablo Ave., Oakland, Cal. Closed Sundays.

MAKE BIG MONEY with our White Orpingtons. Best breed for every need. 'Lay most when prices highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for early maturity and heavy laying. Eggs and chicks. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 647, Los Angeles.

BABY CHICKS—White Leghorns, $9.50 per 100; $45 per 500; $90 per 1000. Express prepaid and full count of live chicks guaranteed at destination. Oswald Miller Robertson, Roseneath Egg Ranch, Arlington, Cal.

SOME BABY CHICKS!— Roofden Poultry Ranch announcement. Old customers and new crowded us with business during March, but with added capacity can care for more orders now. We specialize on R. I. Reds, Barred Rocks, Black Minorcas, Brown and White Leghorns, the best utility breeds for meat and eggs. Breeding stock well mated, eggs well hatched, and we know how to pack them for safe delivery. Write for particulars and prices (express paid when requested); any quantity from a dozen to thousands. Price and quality will suit you. Roofden Poultry Ranch and Hatchery, Campbell, Cal.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired Heavy Winter Layers. W. C. Smith, Prop., Corning, Cal.

ANCONAS—Standard-bred—UTILITY 213 Egg strain official Missouri State Record. The BEST to be had REGARDLESS of PRICE. Unequaled for large egg production. Satisfaction guaranteed. REDUCED PRICES on Breeding Stock and Eggs for April and May. Write now. G. F. Leckner, Tulare, California.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396, Los Gatos, Cal.

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BABY CHICKS—All sturdy youngsters from good stock and hatched right. Rhode Island Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

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WHITE LEGHORN BABIES and Hatching Eggs from Hoganized, heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

FOR SALE—Barred Rock eggs from fine large prize-strain. Extra fine layers. $1.50 per 15; $7.50 per 100. Miss F. W. Buckley, R. F. D., Box 71, West Berkeley.

BABY CHICKS AND EGGS—Hoganized Black Minorcas, White Leghorn stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Calif.

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EAST SACRAMENTO HATCHERY—Capacity 16,000. Special low price for large lots of chicks. Box 1205. M St., Road, Sacramento, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

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WHITE WYANDOTTES—Blue-ribbon winners. Eggs, $2 o $5. Chicks, pullets, cockerels. R. W. Stawetski, Route 2, San Jose, Cal.

SPECIAL Barred Rock and Rhode Island Red Chicks $12.50 per 100. Safe arrival guaranteed. O. L. Hawley, Madera, Cal.

TRAPNESTED LEGHORNS — White and Buff Stock. Eggs, chickens. Arthur R. Schroeder, Box 179R, Mountain View, Cal.

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SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

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BUFF DUCKS—Weigh like a Pekin and lay like a Runner. Winners at Panama-Pacific and Los Angeles. Lay large white-shelled eggs twelve months in the year. Eggs, Baby ducks. The Ferris Ranch, R. 2, 144D, Pomona, Cal.

BOURBON RED TURKEYS The best Bourbons west of the Rockies. Four firsts on males at Panama-Pacific and Los Angeles this season. Eggs, $4 per 12; $7.50 per 25. Poults. The Ferris Ranch, R. 2, 144D Pomona, Cal.

HART'S BRONZE TURKEYS — Vigorous young stock. Eggs by the setting or incubator lots. Circulars free. Albert M. Hart, Clements, Cal.

FOR SALE—Thoroughbred Rouen Duck Eggs, $1.25 per dozen, $10 per 100. W. J. Miller, Farmington, Cal.

MAMMOTH BRONZE TURKEY EGGS from selected stock. Also young Toms. M. M. Belman, Planada, Cal.

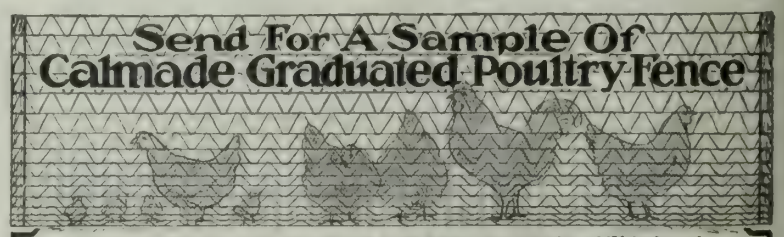
PEKIN DUCK EGGS for hatching, $1.00 per dozen. L. D. Collins, R. F. D., 54G, Denair, Cal.

PHEASANTS—Golden and Ringneck. Egg from April on. T. D. Morris, Agua Caliente, Cal.

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LEADING RABBITRY IN AMERICA—Flemish Giants and New Zealands. Cut your living expenses. Catalogue free. Empire Rabbitry, Empire, Cal.

BELGIAN HARES—Young stock for sale. Hurd Bros., St. Helena, Cal.



10 inches graduated in mesh from ½ inch to 1½ inches then 20 inches of 2½ inch mesh, topped by 4½ inch mesh for the height of the fence.

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remarkable results. He regularly sprays the houses and cultivates the yards. His fowls are in beautiful condition and paying remarkably well.

E. W. Kelly reports that the percentage of egg fertility this season has been a record breaker in the Hollister district.

The poultry industry in the vicinity of Oroville is growing rapidly. At Bentz, Earl McClain reports extensive sales of baby chicks, and Frank Park has added 1600 White Leghorn chicks to his outfit.

In the small back yard of her home in Los Angeles, Mrs. Helen Maxwell is making a success of raising pheasants and thereby secures a good part of her living.

The hatcheries in the Santa Clara valley report that it is difficult to obtain enough suitable eggs for hatching to keep up with the demand for baby chicks. Many shipments of chicks have been made to Utah, Idaho, Nevada, and Arizona. There is an increasing local demand for the larger breeds.

WHY THE HOG LOOKS LIKE A GOOD BET.

(Continued from page 473.)

more satisfactory to sell good goods. In those days packing was only incidental to block hog butchering.

"Since then the prejudice has grown, notwithstanding the change in methods of pork curing here on the Coast. In face of this do you blame us for displaying Eastern cured meats? It's far easier to drift with the tide than to swim up stream and you certainly have to swim against a strong tide of public approval when you try to push California cured bacon or ham."

What the Women Think.—To illustrate his point, ask the housewife why she buys Eastern cured pork. The answer 99 times out of a hundred will be, "Why, because you can't make good bacon or ham from a California hog. In the East, you know, they feed corn and that's what makes good pork." Seems strange that she knows so much about it when she probably never saw a California hog fed, doesn't it?

But does she know all about it? If she doesn't buy California bacon or ham, who does eat the $4,000,000 worth which is annually packed in this State? Surely there is some outlet for it or millions of dollars would never have been spent in constructing large, modern plants.

The Pork Joke.—What is the answer? Go to the packer. Is he in a frenzied state of mind over the situation? Not so you could notice it! He even laughs when you broach the subject, and you do, too, when he explains that the staunch supporter of the corn-fed hog is a poor deluded creature who has been buying California bacon and ham without knowing it.

Oh, no, you are not a victim! You don't buy California-cured meats. Haven't you repeatedly watched the retailer tear an Eastern wrapper off the bacon, and didn't your last ham have an eastern brand on it? Of course it did, and it was fine eating for breakfast, too. Just as good as any you ever tasted. Is it a shock, then, to tell you that you're mistaken? That it is very probable that the hog from which it was cut was raised in your own county, or mayhap on your own alfalfa patch.

Seems like a far-fetched story, it is true, but that is the situation here today. The packer doesn't feel at all excited as to whether California-cured meats are as good as corn-fed ones or not. He knows that a good barley-fed hog is just as tasty as a corn-fed one, because he has your assurance for it in the amount you consume and the way you unconsciously laud its merits.

Is it necessary to quote cured-meat authorities as to the standing of the Danish, barley-fed hog or to dig up a lot of distant data to establish the fact that barley makes just as good pork as corn? We think not. But it is necessary to acquaint the consuming public with these facts and this is a work that our hog promotion interests must take up. If a product has a black eye at home, expansion of outside markets is necessarily more difficult.

Pork for the World.—As soon as the public is apprised of the true situation, through the public print and by publicity campaigns, their loyalty to home-cured pork will not be a questionable matter. Neither will it be longer necessary for the packer to clothe his barley-fed hog in a corn-fed sack or wrapper.

And when his product goes to other states or countries, as it inevitably will, it will advertise California as a hog State just as Sunkist oranges now advertise us as a citrus-growing State.

Like the Sunkist orange though, a certain responsibility rests upon the producer's shoulders. His product must be properly bred and properly fed to meet the requirements of the packer. Also as with oranges, the man who grows this high quality product will be rewarded for it in an advanced quotation for his pork. That hog is grain-fed, and carries more weight than the block hog which has been most in demand in the past. But he is coming and the farmer who first realizes it will be the first to profit by the new order.



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"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

IRRIGATION EQUIPMENT—For pumps, oil engines gas engines, friction clutch pulleys, etc., write us We can save you money Commercial Iron Works, 481-497 Fifth St., San Francisco.

APPLES!—Buy direct from producer. Newtowns, 90c; Bulk pack, 4 and 4½ tiers, equal proportion. No. 2 grade for cooking, 65c. In 5 box lots 70c and 50c per box. Edwd A Hall, Watsonville, Cal.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

FOR SALE—Two 40 in. by 60 in. Russell Threshing Machines, with penumatic stackers. For particulars write to owner. H. P. Mohr, Amador Valley, Alameda county, Cal., Pleasanton P. O., Box 277.

FOR SALE—Used Ranch Tools, Windmills, pumps, engines, new galvanized tanks: 1000, $22.50; 2000 $32 50; guaranteed. Save half. Demmitt Company, 120 North Main, Los Angeles.

CONCRETE MIXERS—2 brand-new mixers at manufacturers prices. Write at once. Commercial Iron Works 481-497 Fifth St., San Francisco.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds $3.00 delivered. Order with remittance, WM. J. SCHROTH CO., 112-B Market St., San Francisco.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars Pacific Co-operative League, D236 Commercial St., S. F.

WINDMILL FOR SALE—16 feet power aermotor and 40 feet steel tower, A1 condition, at bargain. Ogden Bolton, Jr., Route 6, Santa Rosa, Cal.

SAMSON TRACTOR—4 H. P. has not run over ten miles. Price, $450. Kellogg Orange Acres, East Bakersfield.

TREES AND PLANTS.

FOR SALE—Spineless Cactus Plants. Prices right. B. C. Engbert, Byron, Cal.

FRUIT AND ORNAMENTAL TREES and all kind of nursery stock, especially suited to Central and Superior California conditions. Buy from a responsible firm. East Lawn Nurseries, Box 418, Sacramento.

NURSERY STOCK—None better. 2-year-old Navels Valencias and Lemons, ⅝ and up, 25c, balled or packed in moss. Ask for prices on carload lots. J. C. Johnson, Azusa, Cal.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo F. Rice, R. 1, Box 76, Reedley, Cal

20,000 NAVELS AND VALENCIAS—12½c. TERMS, IF WANTED. Large two-year-old stock; choicest ever grown. Lem A. Brunson Co., 1120 Haas Bldg., Los Angeles. Phone F4003.

SWEET POTATO PLANTS for April and May delivery. California Yams, $2.25 per thousand, 35c per hundred, prepaid. J. Braswell, R. D. No. 2, Lindsay, Cal.

HUSKY TOMATO PLANTS—"Stone" twice transplanted, 5 inch, $1.00 per hundred postpaid. J. F. Swett, Martinez, Cal.

FOR SALE—Orange trees from selected two-year-old stock. K. Matsuoka, one mile west of Sanger, Cal.

PROFICHI FIGS, 1916 crop for sale. Limited quantity. T. H. Lynch, Box 21, R. R. 8, Fresno.

SEEDS AND BULBS.

WE BUY ALFALFA SEED containing Dodder, Mustard and other noxious seeds. Send us samples of any high or low grade seed you may have; also of mustard, burr and sour clover seed, flax, etc. Signed Mercantile and Warehouse Co., Fifth and Poplar Streets, Oakand, Cal.

SEED BEANS—We have choice Red Mexican and Blackeyes grown on sandy land, producing a heavy crop. Well cleaned and in good order. Write for prices to THE GRANGE COMPANY, Modesto, California.

LIPPIA LAWNS—Best for California climate. Thrive where bluegrass dies. Ask U. C. experts. Write for booklet. J. F. Swett, Martinez, Cal.

TEPARY BEANS FOR SALE—Eight cents per pound Robert Paulson, Lockewood, Cal.

SEED TEPARY BEANS—Six cents. Haffenden Bros., Honcut, Cal.

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WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. R. Humphrey, Principal, Stockton, Cal., Box 704.

LAND FOR SALE

FOR SALE—Feather River Dairy proposition. New iron-roofed barn 60x64, cement floor and stanchions for 20 cows. Holds 100 tons hay. In section where alfalfa can be bought cheaper than you can grow it yourself. Small house, tank house—3000 gal. tank with water piped all over. Windmill, electric motor and lights. 7 acres land suitable for grapes, berries and poultry. On electric railway. This place a money-maker. $2000 part time. Call or write owners. Parsons & Co., R. F. D. 1, Biggs, Cal. Also alfalfa land and pasture to lease, if required.

DAIRY BUSINESS FOR SALE—60 head of cattle, consisting of 38 head of milk cows, 1 full-blood Holstein bull, balance young stock, horses, hogs, chickens, turkeys and machinery. Will sell part or as a whole. Located near Sacramento. Lease can be had if desired. Information of Lilly, 725 J St., Sacramento, Cal.

COLVILLE INDIAN RESERVATION, Washington, opening for settlement by United States Government. Million acres fruit, farm and dairy land. Copyrighted map and description; instructions how to locate any homestead without aid of land locator. Postpaid, $1, Smith & McCrea, Spokane, Wash.

160 ACRES GOOD LAND—6 good springs, house, 60 acres plow land, balance fine pastures, near school, store, postoffice, in foothills, fine climate, $1600—$600 down. A few good Government land relinquishments, $400 to $700 cash. W. Wallace Baldy, Raymond, Madera Co., Cal.

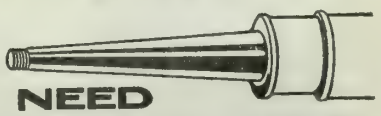
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116 ACRES AT GRIDLEY, CAL.—All in alfalfa. Abundance of water and shade trees. Splendidly drained. Good improvements. Absolutely right and high-class. Owner, Paul Goodloe, Route 13, box 28, Cupertino, Cal.

FREE NEW WHITE BOOKLET—Tells "How," "Why," and "Where" of overlooked STATE, SCHOOL, GOVERNMENT and INDIAN Land Bargains NOW on market. Write JOSEPH CLARK, Sacramento.

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The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends:

Until after Easter, all the stores seem to vie with each other in showing new, attractive spring garments. Silk coats are very much in style again and they range from the practical black in conservative cut to gay colored evening garments that are almost like a circular cape with an apology for a sleeve. These are trimmed with heavy silk fringe and ostrich feather bands and make one feel festive just to look at them.

Georgette crepe is proving to be a strong rival of taffeta for popularity. Some of the exclusive shops are showing entire dresses of this material in shades of white, blue, rose and gray, with bead trimmings. These are made in very simple styles—full skirts with bands of the same material or tucks and soft blousy waists with long sleeves.

It is astonishing how the vogue for long sleeves continues—practically the only dresses you see for women that have short sleeves are the house dresses made of gingham or percale. I saw some very good looking ones of striped materials, as low as $1.95.

For girls from fifteen to twenty, one-piece dresses are shown of linen or crash in many different shades. Many of these are in solid colors—the plaids seem to be used more for the younger girls. Petticoats of thin muslin with flouncings of either embroidery or rows of fine lace are plentiful for dress-up occasions, but the practical garment for common use is made of corded pique, with a circular flounce on the bottom finished in a buttonholed edge. These sell as low as $1.50 and are very durable.

Ostrich feather fans are on display in many of the stores and at one very good shop a combination of silk party bag and ostrich fan is displayed as a Paris novelty.

Corduroy seems to be holding its own in popularity—at this time of year, the white is so pretty and if handled correctly they can be washed very satisfactorily, and, best of all, if the quality is good, they dye beautifully and for a small amount, you have practically a new skirt. Devotedly, **Rosabella Best.**

VACATIONS.

The vacation season is almost here and how fortunate all city dwellers are who can spend that period in the country, far away from the routine of their daily life.

What we all need for vacation is change from our ordinary manner of living—so what better could country people plan than to come to the cities, especially those that have the ideal summer climate—like San Francisco.

The theatres, the large stores, the parks, the fine churches all furnish either entertainment or recreation and the cost of such a trip is small compared with the benefit derived from it. Why not spend your vacation this summer in the city? Make double use of your time — see the sights and do some shopping. Many of the largest stores run special sales during June, July and August.

ENGLISH PORK PIE.

Make a pie crust, not very rich, and put around the sides of a deep pie-dish. In the bottom and above put layers of thin-sliced bacon, thin-sliced potatoes, onions chopped or sliced very fine, lean fresh pork cut into small pieces. Season with pepper, salt and sage. Fill the dish with any good gravy left from waste, or with water thickened for the occasion with some butter added. Cover with crust and bake about 1½ hours. Cover the pie with thick brown paper, if it gets too brown.

WASHING WHITE CORDUROY SKIRTS.

Take a generous amount of lukewarm water in a large receptacle—a bath tub is ideal except for the stooping, and in this, place your garment to be washed. Use Ivory soap and a clean, stiff brush. Go over the entire skirt with the brush well covered with lather, being careful to brush downwards with the nap—never against it. Do not rub between the hands nor on a board. You can get the dirt out that way, of course, but you ruin the appearance of the corduroy. After the skirt seems clean, rinse in two waters, but do not wring. Hang the skirt up perfectly straight and let it drip. At the same time, dry your brush and when both articles are perfectly dry, brush vigorously with the nap of the goods.

This method keeps the garment looking more like new than the ordinary way of washing.

EASTER EGG DECORATION.

All the drug stores carry dyes that can be used to color eggs for Easter—some of them on transfer paper while others are in powder form. But if you want to have something different, try working out an original design in relief on the shell. Draw only the outline of the figure or letter desired and keep the design simple. Melt candle wax and spread over the design, being careful that you keep your outline clear. Then soak in vinegar for an hour and peel the wax and the design will stand out in relief against the rest of the shell.

FLASH LIGHTS.

For use in a household where there are little people who need attention at night, the flash lights are a great convenience. They come in several shapes, one being narrow and flat, intended to be kept under the pillow, and a still newer design in the shape of a candlestick with the bulb at the top. With any of them a slight pressure on the slide produces a ray of light that is very valuable in a dark room.

HOUSEHOLD HELPS.

The food scrapers that can be bought for ten cents that are made of a piece of rubber set into a wire handle should be in every household. They are almost a necessity on fine china, and even on ordinary ware their use is recommended.

Soap shakers made of heavy wire and with a long handle solve the problem of how to use up small and broken pieces of soap. They are fine for dishwashing.

SUMMER SCHOOL.

The Bulletin of the Summer Session of the University of California is about ready and will be sent to any address upon application to the Recorder of the Faculties, Berkeley, Calif. The school lasts from June 26 to August 5, and tuition is $15.00 with no entrance examinations required.

The usual courses will be offered, with particularly interesting programs in Chemistry, Physical Education, Public Speaking, English, Graphic Art, Music, Manual Training, Home Economics, Education, Public Health, Agricultural Education, German and History.

Strangers wishing assistance in search for suitable boarding places will have all inquiries answered by the Dean of the Summer Session, California Hall, Berkeley, Calif.

LAUNDRY SETS.

The leather stores are showing a novelty in pocket-book form of laundry sets, consisting of half a dozen tiny clothespins, not more than two inches long, and a card of linen cord with two glass push tacks. This is put up in a small leather case and is for use in your own room for dainty articles. It sells for fifty cents.

GLASS COOKING DISHES.

Pyrex is the name of a new, clear, transparent substance of which baking dishes are made. It will stand the heat of a very hot oven and enables one to see how the contents of the dish are progressing toward completion. It comes in many sizes and shapes and is recommended very highly.

HIS NUMBER.

Teacher—I'm surprised at you, Sammy Wicks, that you cannot tell me when Christopher Columbus discovered America! What does the chapter heading of the week's lesson read?

Sammy—"Columbus—1492."

Teacher—Well, isn't that plain enough? Did you never see it before?

Sammy—Yes'm, yes'm; but I always thought it was his telephone number.

Two men were once talking over their respective sons' careers at college, and one remarked, "Well, I sometimes feel like saying as did Aaron in the wilderness, 'Behold, I poured in the gold and there came out this calf.'"

White of egg applied to burns gives great relief from pain.

FLORAL DEPARTMENT.

[By Gorge N. Tyler, Los Gatos.]

The Rural Press has made arrangements with Mr. Tyler, formerly of Alameda, but of late years living at Los Gatos, to conduct a floricultural column weekly in this department. Mr. Tyler will give cultural directions covering plants, bulbs, and shrubs, also will answer questions germane to the department. As Mr. Tyler has been for a long time a recognized authority in this line we believe our readers will secure many valuable hints by following his teachings.—Publisher.

Asters.—It is now time to plant out asters. Get the young plants from the florist. The comet and branching asters give the best results. The bed should have been prepared last fall, with a heavy application of manure,—horse manure for heavy clay soils and cow manure for light sandy soils. Before planting give a good application of hydrated lime—do not under any consideration use green manure for asters. Lime in itself is not a fertilizer, but it puts the soil in a good mechanical condition for working and releases all available plant food, so the plants can take it up; it also sweetens sour soil, and puts it in condition so that the denitrifying microbes can work, and release all available nitrogen, etc. In setting out the young plants, firm the soil around them and leave a little hollow, so that you can water as soon as planted out, afterwards filling this hollow with dry soil which acts as a mulch. Always water any plant as soon as set out, as the water settles the earth around the roots. After the plants have become established, water freely and cultivate after every watering. In about a month or six weeks, give a liberal application of bone meal and work it in with the rake or hoe. Do not use any kind of manure for a mulch, as this causes yellows and bull-headed flowers. Further directions for feeding will be given later.

Pelargoniums, in pots, are coming into flower now. Give them lots of air, full sun and also work a level teaspoonful of bone meal into the soil at the top of the pots. This increases the size of the flowers, the plants make a vigorous short-jointed growth. Do not under any consideration wet the flowers or foliage.

Pansies should have an application of an inch to one and a half inches of cow manure, so as to keep the roots cool and moist. The size of the flowers can be greatly increased by using the liquid manure, as described in my last article on mums.

Roses should be thoroughly enriched with bone meal, and then a good dressing of manure applied. The foliage should be sprayed in the forenoon of bright days, but never in the late afternoon, for moisture on the foliage causes mildew. Mildew is caused by sudden changes of temperature. Dust the plants with flowers of sulphur early in the morning, while they are moist with dew as a preventive. Use a piece of cheese-cloth, making a bag; put the sulphur in this and strike it with a stick which makes the sulphur sift gently down over the plants. For green aphis use a strong spray of water and wash them off, or use soapy water, or any of the tobacco extracts according to directions.

DOUBLE VISION.

My grandma's spectacles are queer—
  It's almost like a game;
She says she has two pairs of them,
  Although they look the same.
One pair makes tiny things seem big,
  "Enlarged," she says it's called;
The other makes big things seem small—
  I s'pose they are ensmalled.

I never see her change them,
  But she always seems to know
Just when to see things pretty small—
  And when to make 'em grow!

Some days folks think I'm 'quisitive,
  And bother 'round a lot;
Her specs just twinkle as she 'splains,
  "She's such a little tot!"
But when she gives me gingerbread,
  Or cookies, for a treat,
She says, "A great big girl like you
  Needs lots and lots to eat!"

I saved some choc'lates for her once—
  Some teeny little ones—
She said I was "an angel" an'
  They looked "as big as buns"!
But when I dropped my mug, and made
  A big spot on the mat,
She said, "It won't be seen at all,
  A little thing like that!"

I'm saving all my pennies,
  And I'm going to buy two pairs
Of spectacles for father—
  The kind my grandma wears.

—St. Nicholas.

WHY THE HORSE WHINNIED.

Adelaide was tired of shopping. Stores are so large, and there are so few places where a little girl can sit down to rest! If mother had been shopping in the toy department it would have been different; but sheets and pillow-cases are stupid though necessary. So mother left Adelaide at father's office while she went back to the shops and sheets and pillow-cases.

Father is an editor, and he sits at his desk writing, writing, always writing. When Adelaide was younger she supposed he was doing his writing lesson, as she did twice a week; but now she knows that he writes down all that happens the world over, so that the printers may know what to print in the columns of the evening paper.

When one calls on father, one must sit very quietly by the window, looking at pictures in papers and magazines or cutting them out for paper dolls. One must not interrupt father unless it is absolutely necessary,—like a cut finger, or a pin that hurts,—and one must never, never fret, not even if it is a quarter of an hour past luncheon-time.

This morning Adelaide seated herself with the mucilage-bottle and the big desk shears and some lovely tissue paper rescued from the waste-basket, to make a dress for a lady doll cut out of a magazine. As she sat there working she heard a horse whinny in the street below. Some whinnies mean, "Please, master, I'm tired of waiting here."Others are "How-de-do's" to passing horse acquaintances. Adelaide wondered what this one meant.

She colored the lady doll's eyes blue and her cheeks red with her father's colored pencils. Then she heard the horse talking again. The window was so high and the sill so broad that she could not see down to the street below. She wished she knew what the horse wanted. All the time Adelaide was making the lady doll's gown—blue with a white yoke—that horse whinnied.

The dress was just finished — it was lovely!—when father laid down his work, got up from his chair, and asked, "How about luncheon?"

The nicest part of visiting father is going out to luncheon with him. One goes to a funny little restaurant where instead of pictures on the wall are framed signs reading "Oysters," "Chicken Salad," "Coffee Rolls," and names of other delicious dishes. One sits at a little round table with father and orders either from these sign-pctures or from the bill-of-fare, which is fine print and harder to read.

So when father laid down his work, got up from his chair, and said, "How about luncheon?" Adelaide quickly laid down her work, slipped out of her chair, and replied, "Oh, yes."

They went down in the elevator and through the large hall. As they reached the sidewalk that same horse whinnied again, and this time Adelaide knew what he was talking about, for she could see him. Just out from under his nose a fruit-vender had set up a stand of pears, large and yellow and fragrant.

"Oh, father," cried Adelaide, "he has been teasing for a pear for the longest time, and I heard him; but I didn't know what he wanted because I couldn't see him or the pears either. Your poor horsey, how dreadful to have all that smell and not a single taste!"

"What would we better do about it?" asked father, smiling.

"You know, father," she said, "that while you drink your little cup of coffee that is just like my doll's cups, I have a glass of milk and a banana or an orange or a peach."

Father remembered.

"Now I think I will have a pear today, and, if you would just as lief, I will have it now and give it to horsey because he wants it so badly."

Father said he was feeling rather rich today and perhaps he might afford to treat both the horse and Adelaide to dessert. He bought two pears of the fruit-seller,—they were two for five cents,—and Adelaide took one by the stem and held it up to the horse. He pushed out his lips, as horses do, and seized the fruit in them. While he ate he blinked at Adelaide in a contented fashion. After he had eaten the second pear and Adelaide and her father were walking on he whinnied again, but this time the whinny said, "Thank you."

"Didn't he enjoy them!" said Adelaide. "I guess, if you really feel rich enough to afford it, I will have a pear myself while you drink your doll's cup of coffee, instead of a banana or an orange or a peach."—Mary Alden Hopkins, in Congregationalist.

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FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS.

San Francisco, April 12, 1916.

WHEAT.

Unfavorable crop indications in the East have caused a firmer tone there, but the war situation is not encouraging for heavy speculative buying, and values show little change in either local or outside markets. Trading here is very dull.

Cal. Club, ctl.	$1.62½ @ 1.67½
Northern Bluestem.	1.90 @ 1.92½
Northern Red	1.85 @ 1.95

BARLEY.

The spot movement here is limited to current needs, with buyers taking very little interest. However, offerings are pretty firmly held at the former level, the supply being of moderate proportions.

Shipping, ctl.	$1.40 @ 1.42½
Choice Feed, ctl.	1.35 @ 1.37½

OATS.

Local consuming requirements are light, and as most buyers are amply supplied for current needs there is little interest in the market. Considerable stock is offered, and the market shows a tendency to weakness.

Red Feed	$1.35 @ 1.37½
Red Seed	1.45 @ 1.65
White	1.45 @ 1.50

CORN.

Yellow, either Eastern or California, is in fair demand as last quoted, though inferior grain, either of this or the Egyptian type, is not readily salable. Good Egyptian and Kaffir corn is moving well in the country.

Egyptian Yellow, ctl.	$1.80 @ 1.85
Milo Maize	1.40 @ 1.45
Kaffir	1.60 @ 1.65
Egyptian	1.50 @ 1.57½

BEANS.

(On wharf, San Francisco.)

Bayos, per ctl.	$4.50 @ 4.60
Blackeyes	2.90 @ 3.00
Cranberry Beans	4.65 @ 4.75
Horse Beans	3.00 @ 3.25
Small Whites (south)	6.00 @ 6.10
Large Whites	5.75 @ 5.90
Pinks	4.20 @ 4.30
Limas (south)	4.35 @ 4.45
Red Kidney	6.50 @ .675
Mexican Reds	4.50 @ .465
Tepary Beans	4.00

SEEDS.

Melilotus Alba, lb	23 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	5 c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Alfalfa, per lb.	22 @ 24 c
Sudan Grass	40 c

HAY.

The first carload of the first cutting alfalfa arrived in this market a few days ago, and arrivals are expected to increase rapidly from now on. Buyers are still holding off a little, fearing that the new hay may be imperfectly cured; but those who receive it say the quality is much better than usual for first cutting, and with good curing weather an excellent lot of alfalfa is expected from the San Joaquin. Conditions for the grain hay crop have been bad, as there is great need of rain in most districts. There is said to be a great shortage of hay in the Portland market, and shipments up the coast have cleaned up the local surplus, causing a much better feeling in this maket.

HEAVY GRAIN FED HOGS IN FAVOR.

Hog arrivals have been of such a mixed nature locally that packers could not come out with the nine-cent top and as a result a shaving of prices is noted this week. A large number of lightweights have been slipped through, making it difficult to profitably handle the large volume killing from a packer's standpoint. The demand for good, heavy, grain-fed hogs is still good and will probably continue to be, but a nine-cent top must not be expected. Lightweights continue in bad repute, and find little, if any, demand from the packing sources.

No. 1 Wheat	$13.00 @ 16.50
No. 2	12.00 @ 14.50
Tame Oats	12.00 @ 18.00
Wild Oats	12.00 @ 14.00
Alfalfa	12.00 @ 15.00
Stock Hay	6.50 @ 8.50
Straw, per bale	.25 @ 40

FEEDSTUFFS.

(Wholesale prices per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$22.50 @ 23.50
Alfalfa Meal, per ton	20.00 @ 21.00
Alfalfa Molasses Meal per ton	21.00 @ 22.00
Bran, per ton	24.50 @ 25.50
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00 @ 25.00
Cracked Corn	40.50 @ 41.50
Middlings	33.00 @ 34.00
Rolled Barley	29.00 @ 30.00
Tankage	45.00
Rolled Oats	29.50 @ 31.00

VEGETABLES.

A decidedly firm feeling is noted in several lines of vegetables, owing to a large movement to the Eastern markets. This is true in part of asparagus, though the cannery price has been as low as $1.25 on heavy receipts; and string beans and green peas are higher on account of the shipping demand.

Cabbage, ctl.	70 @ 80 c
String Beans	20 @ 22½ c
Peppers, bell, lb.	20 @ 25 c
Rhubarb, box, Bay	50 @ 65 c

POTATOES AND ONIONS.

New potatoes are now coming forward in considerable quantities, causing a very sharp drop in prices. Old stock also is a little higher, but on the whole the market for good old potatoes is in fair shape.

Asparagus, box	1.50 @ 2.00
Artichokes, doz.	20 @ 40 c
Celery, crate	2.50
Lettuce, small, crate	.75 @ 1.25
Eggplant, lb.	15 @ 20 c
Peas	3½ @ 5 c
New Potatoes, ctl.	$2.50 @ 2.75
Oregon Burbanks	1.75 @ 2.00
Delta Burbanks	1.25 @ 1.75
Sweet Potatoes, ctl.	2.50 @ 2.75
Onions, Delta, ctl.	1.25 @ 1.50
Onions, Oregon	1.30 @ 1.50
Australian	3.25 @ 3.50
Garlic, per lb.	8 @ 9 c
Tomatoes, Mex., box	3.00

POULTRY.

Really good turkeys would bring a premium, but practically no attractive stock is offered. Arrivals of Eastern chickens have been very light this week, and with a good demand the market is very firm on everything but small young stock, which is coming freely from local points. Broilers have dropped a little, but fryers are steady, and both hens and roosters show a sharp advance. Ducks also are a little firmer, and Belgian hares are in demand.

Turkeys, dressed	27 @ 28c
Live Turkeys, lb.	20 @ 22c
Broilers, 15 lbs. to doz. and less, lb.	30 @ 33c
do, over 15 lbs. to doz.	35 @ 36c
Fryers	30 @ 35c
Hens, extra, per lb.	21 @ 22c
Small	20 @ 21c
Smooth Young Roosters, per lb.	25 @ 30c
Squabs, per doz.	2.00 @ 4.00
Geese, per pair	2.25 @ 3.00
Ducks, young, lb.	20c
Old	18c
Belgian Hares	10 @ 11½ c

BUTTER.

Local prices have rather suddenly taken a 1½c. drop, owing to increasing arrivals and an easier feeling in Eastern markets. The shipping movement has continued until very recently, however, large quantities going to Seattle, while occasional carloads are still going East. The difference in values now is too small to offer much inducement for Eastern shipments, but the goods are moving on buying orders from New York and Chicago.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	29	29½	30½	29	29½	28
Prime Firsts	28½	29	30	28½	28½	27½
Firsts	28	29	29½	28	28	27

EGGS.

The market is rather uninteresting, as prices have been maintained steadily on extras, with only a slight advance on pullets. There is still considerable outside demand, which with the movement into storage is taking up all surplus offerings.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22	22	22	22	22	22
Sel. Pullets	19½	19½	20	20	20	20

CHEESE.

Flats have been coming in quite freely for some days past, causing a sharp decline, while the other grades remain as last quoted.

Y. A.'s, fancy	18½c
Fancy Calif. Flats, per lb.	14½ c
Monterey Cheese	15 @ 16½ c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu
Butter	28	28	28	28	28	28
Eggs	21	21	21	21	21	21

DECIDUOUS FRIUTS.

There is nothing new in the market as yet, though some cherries are said to have been shipped from early growing districts. Strawberries have declined rapidly, as arrivals from all three districts mentioned are growing fairly large. Most of the berries so far have been of attractive quality, and find quite an active demand in the local market. Loquats are easier, and apples stand about as before.

Strawberries, S'n, crate.	$ .75 @ 1.00
Fresno	1.25 @ 1.50
Watsonville, chest	8.00 @ 12.00
Apples:	
Pearmain	.85 @ 1.00
Baldwin	.75 @ 1.00
Loquats, crate	2. @ 2.25

DRIED FRUITS.

The dried fruit market is decidedly in the doldrums at present. What may be taken as a somewhat favorable indication is an advance in spot pears, which would seem to reflect a shortage in some other lines. Spot prunes also show a little more firmness, and peaches have been marked up about ½c, as the spring consuming demand is making itself felt, and the trade in distributing centers is recovering from its scare. There are still some peaches left in the country, and some good-sized lots of prunes, but these are expected to move off in good shape before the new crop comes in. Values for futures are still very uncertain. Some of the packers have had buyers in the field the last few days, but report that the growers generally are refusing to sell, partly on account of the prospect of short crops in several lines, and partly from expectations of better marketing conditions later on. The present attitude of the growers is having some effect on Eastern markets, apparently, and it is expected that short sellers will have trouble in making deliveries.

Apples	5 @ 5½c
Apricots, per lb	6 @ 10 c
Figs, white	Nominal
Black	Nominal
Calimyrna	Nominal
Prunes, 4-size basis	4 c
Peaches	4 @ 4½c
Pears	5½ @ 7½c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6¾ c
London Layers, 3-crown, 20-lb. box	1.25
Imperial Clusters, 6-crown, 20-lb. box	2.50
Bulk, layers, 50-lb. box	2.75

CITRUS FRUITS.

The shipments of oranges to the east have been very heavy for some time, averaging nearly 300 cars daily. It is expected that the navel crop will be nearly all shipped by

Special Livestock Market Report.

There is very little buying activity in cattle, only a very few of the choicest lots of grassers being contracted for. Some of these are bringing as high as 6¾ for early delivery. Cattle for immediate shipment are in strong demand, there being a scarctiy of light cattle at the present time.

The market on sheep is about the same. The southern districts report an exceptionally early drying up of feed, but it does not seem probable that many will have to be carried over. In view of the prices which lambs were contracted for they are not carrying near the weight they should. Practically all of the lambs in the country are contracted, and the same condition applies to sheep, although not in such a broad sense.

WOOL.

There is a little buying in the country, but hardly reportable. The London sales opened five per cent off April 11, but it is too early at this writing to say what the ultimate condition will be. Boston reports a fair volume of business at old prices. It looks to be a waiting market.

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the middle of May. Prices are ruling good on acceptable fruit, but large sizes are holding down the average. At New York on Monday, April 10th, the auctions averaged from $1.80 to $3.65 per box for navels, and from $2.25 to $2.60 for lemons. At Chicago the same day prices averaged $2.25 to $3.75 for navels, and lemons from $2.75 to $3.50 per box.

Oranges, Navels	$1.50@2.75
Tangerines	1.25@1.75
Grapefruit	1.50@2.50
Lemons, box	1.75@3.50
Lemonettes, box	1.25@1.75

HONEY.

Water White, comb	13@15 c
Amber	8@12 c
Water White, extracted	7@8 c
Light Amber	3@4 c
Dark	2@2½c

NUTS.

(Prices f. o. b. San Francisco.)

Almonds (1915)	Nominal
Walnuts (1915):	
Budded; per lb.	17½c
No. 1	14 c
No. 2	11 c
Jumbo	17 c

HORSES.

Little stock has come in for several weeks past, but a small lot of heavy drafters appeared a few days ago. They were disposed of at about the range quoted, but there appears to be no very great interest in any class of horses locally, and it is hard to dispose of anything except first-class stock of the types most in demand at anything like satisfactory prices. A recent country sale is said to have shown poor results.

(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs and up	$ 250
Drafters, 1550 to 1650	150@200
Chunks, 1350 to 1500 lbs.	150@175
Wagon horses, 1050 to 1350 lbs	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@75
Farm Workers	50@100

HIDES.

Buyers are still taking an active interest, and local offerings are kept pretty well cleaned up, values being well maintained.

Dry, 15 lbs. and over	30 @31 c
Kip, 10 to 15 lbs.	31 @32 c
Val, 7 to 10 lbs.	33 @34 c
Calf, under 7 lbs.	34 @35 c
Wet Salted, Steers	17 @18 c
Cows,	17 @18 c
Kip	19 @20 c
Calf and Veal	22 @23 c
Bulls and Stags	13 @14 c
Horses, dry, large	$1.25@2.25
Sheep, long wool	1.25@1.40
Medium	1.00@1.25
Shearings	.45@.55

LIVE STOCK.

(Prices, paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)

Steers, No. 1	7½@8 c
No. 2	7¼@7½c
Cows and Heifers, No. 1	6½@7 c
No. 2	5¾@6 c
Bulls and stags	4 @5½c
Calves, light	8½@9 c
Medium	7½@8 c
Heavy	6½@7½c
Hogs, grain-fed:	
100 to 160 lbs.	8¼c
160 to 175 lbs.	8½c
175 to 250 lbs.	8¾c
250 to 325 lbs.	8½c
Prime Wethers	7½@7¾c
Spring Lambs, f. o. b. country points	$5.00@5.50
Steers	11¾@12 c
Veals, large	12½@13 c
Small	13 @14 c
Prime Wethers	13½@14 c
Spring Lambs	16½@17½c
Hogs	11 @12 c

WOOL.

Local dealers report a very quiet market, but note some slight advances in some classes of wool.

(Prices paid in the country.)

Red Bluff, year's	23@25 c
Sacramento Valley, yr's	19@21 c
Mendocino, year's	25@26 c
Mendocino, 7 mos.	22@23 c
Southern, year's	21@22½c
Southern, 7 mos.	16@17 c
Imperial Valley, year's	17@19 c
Imperial Valley, 7 mos.	14@15 c
Nevada	21@23 c

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	28.60	28.00		28.20
" 9	25.33	26.66	26.00	28.10
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	28.66	36.33	28.00	36.66
Feb. 6	26.68	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25
" 20	29.00	32.00	27.16	32.00
" 27	29.10	30.90	27.00	35.25
March 6	27.00	24.08	25.25	24.16
" 13	24.66	29.91	24.00	28.83
" 20	23.00	28.33	22.50	27.16
" 27	22.91	28.50	23.00	28.08
Apr. 3	23.00	28.50	22.23	28.83
" 10	23.08	29.31	22.00	28.00
" 13	23.00	28.90	25.10	28.00
" 20	23.60	23.66	23.58	20.33
" 27	21.40	20.30	20.80	18.50
March 6	20.50	18.33	19.00	18.00
" 13	20.66	19.50	19.00	18.91
" 20	21.00	20.00	19.66	19.08
" 27	20.83	21.41	18.50	20.83
Apr. 3		21.75		21.00
" 10		22.00		21.00

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 30	28.16	36.33	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50

Publisher's Department

Number of new subscribers added to our list the past week was 149. While we are all working to increase the subscription list, it would seem as though the eastern paper manufacturers were the ones who were reaping the rewards at this time. In common with other material the price on paper has steadily advanced for the past three months till now it is nearly 50 per cent higher than last year. This office was lucky in having several carloads on hand before the prices commenced shooting skyward, so we welcome every new subscriber.

This issue is given largely to Swine in California. After reading it you may want more information. In case you do, send for our California Hog Book, price $2. Our next issue will print a lot about the Hay Crop.

Chrysanthemums!

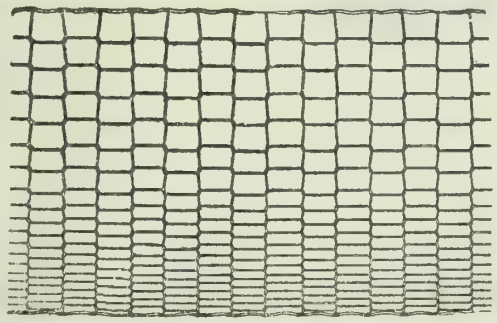
20 rooted cuttings, my selection, for $1.00 postpaid. 12 from 2½ inch pots, my selection, for $1.00 by express. This special offer includes both singles and pompons. Send for price list of latest novelties in show, commercial, exhibition, pompons and single Mums.

GEO. N. TYLER,
Brookdale Nursery, Los Gatos, Cal.

Save Money on Wire Fencing!
-send for WHITING-MEAD'S Free 1916 catalog showing how to save money on Building Material

HOG FENCING, 50c ROD

4 FOOT HIGH—LIKE PICTURE.



—With the rapid advance in price of all kinds of fencing, this is an even more important offer than might seem at first reading.

—We are fortunate in being able to secure an unusually large amount of this fencing, so can fill large orders promptly.

—Picture to the right shows just how it looks However, there is a heavy barbed wire at top and bottom not shown in picture. This prevents cattle from pushing **down** and hogs from **lifting up** this fencing when in use.

—Only best Number 9 and 12 gauge wire used, fully galvanized. This price applies in 20 rod rolls.

WHITE ENAMELLED ROLL RIM SINKS $1



—Another evidence of buying in quantities impossible to small dealers. Roll rim sinks, just like the picture, white enamelled inside and deep blue enamelled outside. Made of best pressed steel. We've sold thousands and despite the war are able to quote the low price of $1.00

Enameled Steel Bath Tub. Our Famous Special. $8



—For years this has been our most talked-of bargain, in fact, we have reason to believe we are the only people on the Pacific Coast selling these tubs.

—Made of finest 24-gauge galvanized steel. Inside white enamelled, outside finished in rich sky blue enamel with handsome bronze trimmings and hardwood rim. Price, ... $8.00
larger sizes, $8.50, $9 and $10.



Low Down Enamel Steel Toilet Combination..... $11.50
Complete to floor—wonderful value.

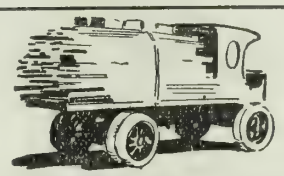
Low Down Vitreous China Closet Combination..... $15.50
Special value—worth $22.50

Big value in High Tank Toilet Combination $11.50
Complete to floor—a bargain.

Special Bankrupt Stock of Kitchen Sinks. All sizes— from..... up $1.00



Best Quality Porcelain Lavatories; every one guaranteed— $10 down to..... $3.75



About Our Lumber

—Just as we have been telling you for some time we now have one of the finest lumber stocks in Southern California open for your selection.
—Do not let anyone mislead you. We can prove our lumber to be all we claim it. It is all new and strictly up to grade. Get our prices before you build.

Standard House Paint $1.50

—Regardless of the increased price on paints we are still able to quote you our old prices on the famous Standard and other paints.

—Standard House and Floor Paints, $1.50 per gal.

—Standard makes of varnishes at 25% off regular prices.

Everything in Paints, Wall Tints. Brushes, etc., at big savings to you.

Dutch Kalsomine, 4½c per lb.
Black Graphite Roof.— per gal.*..... 50c
Standard Roof Paints— red, green, gray — per gal.* 85c
Shingle Stain, made from pure ground colors per gal 50c



*In 5 gal. lots only at this price.

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—Roofing like this is being sold by many firms for 20% to 40% more. The European War demand is sending the price of all roofing up by leaps and bounds, but by reason of our large stocks we can quote these low prices:

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3-ply, double-sanded, per roll of 108 square feet	1.80
1-ply, "King" smooth, per roll of 108 square feet	1.40
2-ply, "King" smooth, per roll of 108 square feet	1.65
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—Send for free sample.

Wall Board—2c Sq. Ft.

—It's the very same wall board that many dealers charge you 3c for. But we buy such immense quantities that we can afford to sell it at this low price.
—Makes the neatest inside finish, far better than plaster, burlap, or lumber. Now only, per sq ft..... 2c

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The back-bone and mettle of a motor car, after all, can only be shown up on country roads.

The new 3400 r. p. m. Chalmers, by facing all kinds of conditions on all kinds of roads without whimper, apology, or flinching, has proved that she's got the stuff in her.

She has proved that she is no mere citified, boulevard performer; for no car on earth of her price or size has ever gone about its business everywhere with her energy, endurance, strength and spirit.

Her conquest of hills and rut-riven roads is the talk of every county seat. She has climbed hills on high gear and pulled through country roads on "high," where conditions were so bad that the running boards dragged.

These are two of the reasons why the 3400 r. p. m. Chalmers is such a sensible car for the farmer to buy. She does not boast of fantastic records of performance made by a tuned-up, doctored-up, professional-driven car on the race-track. Her achievements have all been recorded with ordinary drivers at the wheel and ordinary roads beneath her tires.

Owners throughout the country have driven her over roads on which they admitted it was a shame to drive any car, and she has made amazingly good.

The 3400 revolutions per minute of her engine, recorded without skipping and with absolute safety, prove tremendous engine-strength and precision.

Long engine-life and high engine-speed have always been twin features of the most successful engines of all kinds. 3400 r. p. m. means long life because it reduces side-thrust of the crankshaft to the minimum, and side-thrust means wear and tear.

The 3400 r. p. m. Chalmers is a sturdy, long-lived piece of machinery, built not only to endure, but to economize.

You get 18 miles of light-footed going out of every gallon of gas. You add many miles to the life of your tires because of the smooth velocity with which her engine delivers might.

The same throbless, fretless engine-action, whether you travel at the rate of 3 or 60 miles an hour, whether one or five are aboard, means riding comfort that springs, good leather and 9-inch cushions only partially explain—riding comfort that has never been dreamed of before in a $1050 car.

Her pick-up responds with the same velvety obedience in the Dakotas as on Michigan boulevard. She economizes with fuel over Kansas gumbo, just as on Fifth Avenue.

From every angle, you'll find the 3400 r. p. m. Chalmers a sensible, practical, value-delivering car to own and drive.

Drop in and see her at your Chalmers dealer's the next time you go to town.

One look—one ride—and you'll realize why she's cast her spell over 100,000,000 Americans.

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Vol. XCI—No. 17 Forty-sixth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO APRIL 22, 1916. LOS ANGELES

California State Library 7-1-

Rotation; Driving-Wheel of Prosperity.

Rational sequence of crops and fertilization will make open land continuously profitable and enable it to help sustain fertility in land permanently planted.

[By J. W. Gilmore, Professor of Agronomy, University of California.]

THE writer once listened to a Japanese agriculturist relate some of the differences that existed between the agriculture of Japan and that of America. Among other things he stated that in Japan they cultivated soils, while in America it appeared to him that we cultivate crops. In view of the fact that the agriculture of Japan is old, while that of America is young, and in view of the fact that Japan has supported her dense population on an area of arable land amounting to less than 15 per cent of the total, this statement has some significance. Its significance is in the fact that permanent agriculture is wrought with the problem of treating, husbanding, or cultivating the soil in such a way as will at least maintain its crop-producing power.

When a complete survey of the methods of maintaining crop-producing power of the land is made from the records of experience as well as from experiments, it will be found that among other factors the diversification of crops and the keeping of domestic animals are two that stand out prominently, and that in addition to this there must be a correlation between the weight of live animals fed on the land and area of land cultivated.

The problem in California is complicated by the fact that there is a demand not only in other parts of our own country, but also abroad, for the products of the soil in the form of grain seeds and forage. Hence, we are of apparent necessity selling away from our lands elements of plant food large in amount as well as in value. If it may be granted that half of our barley crop is sold from our lands and all of our wheat crop, then we are removing each year more than one million dollars' worth of fertility in the wheat crop (at the rate of $3.43 per 1000 lbs.) and more than two million dollars' worth in the barley crop (at the rate of $2.60 per 1000 lbs.) This is sufficient illustration without mentioning a large number of other crops by which plant food elements are removed.

The future of California agriculture therefore involves a consideration of the problems relating to the maintenance of the crop-producing power of our soils. It is believed from all the experiments and experiences that can be assembled that this may be accomplished by the use of a variety of good crops, by the feeding upon the land of farm animals in a ratio of numbers suitable to the area cropped and the kinds of crops produced and the placing upon the land from time to time such mineral and organic fertilizers as are required. In this enumeration it is assumed that the land is not charged with excessive amounts of water or alkalis and that no organic matter is burned or wasted.



General farm crops are fundamental to permanent agricultural prosperity, because they provide rotation of cash crops, remove competition from fruit growers, and supply feed for live stock, which supply fertility for the fruit and general crops.

Why Rotation is Rational.—The demand for rotations and diversifications are usually brought about by depleted yields or qualities, and these arise out of deficiencies in the soil or from the presence or infestation of insect enemies or fungous diseases. The purposes to be attained through a diversification or rotation of crops may be briefly enumerated as follows:

I. Reasons bearing upon the crop-producing power of the land:

a. Cultivated crops, cover crops, and forage crops should alternate in order to maintain an optimum humus content in the soil.

b. A legume crop should appear on the land one year in four in order to maintain as nearly as possible the supply of nitrogen.

c. Alternate crops of different culture methods in order to maintain good physical condition. This also includes crops of different food requirements.

d. Under some conditions a summer fallow must be included in order to conserve moisture and to augment available food supply.

II. Reasons bearing on the control of enemies:

a. Employ crops having different culture methods, seasons, and structural characteristics, for the control of weeds, insects, and fungous diseases.

III. Reasons bearing upon economy in farm management:

a. Crops should be varied in order to insure continuous returns in time as well as amount.

b. A succession of crops should be planned so as to distribute as equally as possible both man and horse labor throughout the year.

Instances of Depletion.—One does not have to travel very far in California to see the evil effects of continuous cropping. At the University Farm, Davis, continuous cropping to wheat since 1908 has resulted in the following figures.

(Continued on page 516.)



Cave Life or Civilization

Civilized man is distinguished from the cave man by his habit of co-operation.

The cave man lived for and by himself; independent of others, but always in danger from natural laws.

To the extent that we assist one another, dividing up the tasks, we increase our capacity for production, and attain the advantages of civilization.

We may sometimes disregard our dependence on others. But suppose the farmer, for example, undertook to live strictly by his own efforts. He might eke out an existence, but it would not be a civilized existence nor would it satisfy him.

He needs better food and clothes and shelter and implements than he could provide unassisted. He requires a market for his surplus products, and the means of transportation and exchange.

He should not forget who makes his clothes, his shoes, his tools, his vehicles and his tableware, or who mines his metals, or who provides his pepper and salt, his books and papers, or who furnishes the ready means of transportation and exchange whereby his myriad wants are supplied.

Neither should he forget that the more he assists others the more they can assist him.

Take the telephone specialists of the Bell System: the more efficient they are, the more effectively the farmer and every other human factor of civilization can provide for their own needs and comforts.

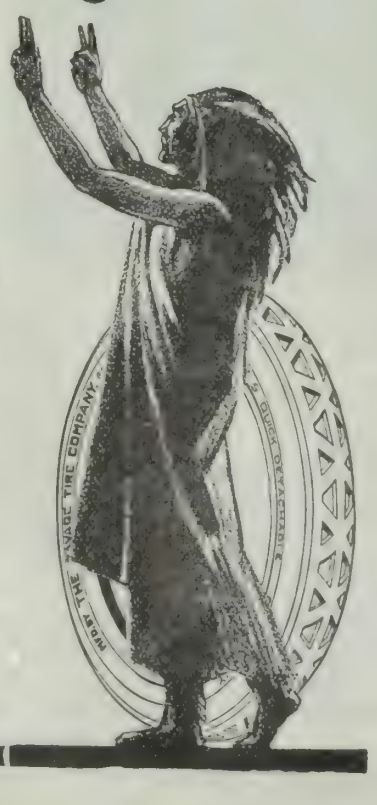
Or take our government, entrusted with the task of regulating, controlling and protecting a hundred million people. It is to the advantage of everyone that the government shall be so efficient in its special task that all of us may perform our duties under the most favorable conditions. Interdependence means civilized existence.

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Why Take A Chance?



WHEN you buy your grain binder this spring, do not make the mistake of experimenting with an untried or cheap machine. You cannot make money that way. A binder is useful for one purpose only—to get all the grain cut and bound in the short time allowed for the harvest. That is no time to risk experiments, especially when you do not have to. Choose your binder from one of the old reliable, yet up-to-date in every way, **International Harvester** binders sold under the trade names—

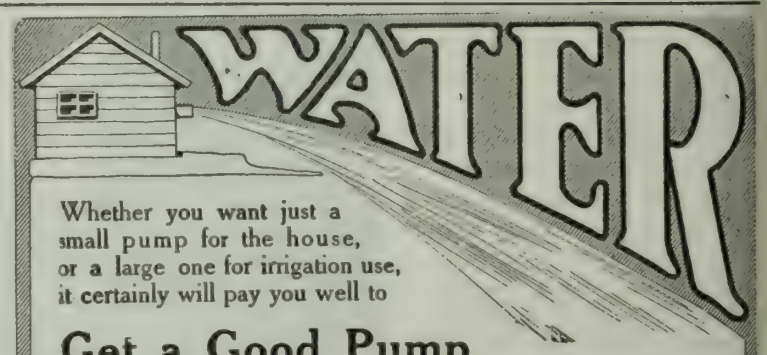
Champion Deering McCormick
Milwaukee Osborne Plano

You will find practical farmers, who know what particular harvesting difficulties they must overcome each year, urging the use of some binder with an **IHC** name. Years of building and betterment have resulted in these machines that insure as complete a harvest as it is possible ever to get, even under worst field and grain conditions.

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(California)

MICA AXLE GREASE

Pacific Rural Press

SAN FRANCISCO APRIL 22, 1916. LOS ANGELES

The Uniqueness of California Hay.

Seventh of a series of sketches in which the Editor presents suggestions drawn from long experience, of what Californians should think and do for the advancement of California Agriculture.

SIGHT.—Perhaps the rudest shock which early American entrants to California received was from their discovery that it was a land devoid of greensward. Most plains-crossers received this shock in aggravated form, because the breaking up of winter was usually the signal for a start overland from the eastern states and spring migration resulted in summer and fall arrival in California—the pilgrims being the more deeply impressed because they first hailed verdant mountain meadows of California as the joyful ending to weeks of dusty distress in plains-crossing and hastened onward toward the heart of the new paradise to find that organ feebly welcoming them to palpitating heat-waves amid bare, rounded foothills and then to a tawny ocean of arid plains, islanded by scattering oaks which cast naught but dry and dusty shade. All this they saw and felt—keenly remembering, too, that at the very time of their arrival in California the fields whence they came were verdure-clad with growing grains and clovers and the air redolent of new-mown hay.



"Alfalfa is in a winning race with 'grains cut green' for they are in the last decade of their leadership, probably."

And there came others by ship and ocean, arriving as the rains were falling and they saw the valley plains park-like—illimitable lawns, flower-spread and tree-set. Theirs it was to be joyful over the contrast between this sight and memory of home-fields drear and snow-mantled until, to gather flowers, they stepped out upon the naked soil uncushioned with turf even where grew the thickest grass.

And so, to those who arrived in summer, and in winter also, the conviction came that this land of mines could never be a land of farms, for what they saw offended the traditions of all humid countries—"no sod, no grass; no grass, no cattle; no cattle, no manure; no manure, no grains; no grains, no life for civilized man."

Insight.—There is no space to outline the awakening to insight which came to nearly all whose mistaken conclusions gave to California a bad name for agriculture in the very early years of American occupation, nor to record the expressions of it at any length. Much of the new truth which was learned pertains to pasturage, and of that we are not writing now. And to those who did gain some early insight, conviction was slow: it was conversion—with doubts. A few words from the distinguished Horace Greeley written in 1859 in his "Overland Journey to California," give us the hay connection which we desire:

"Such a thing as an honest, straight-out barn has not blessed my eyes in connection with any farm since I left civilized Kansas—if even there. A Californian would as soon think of cutting hay for the sustenance of his family as for that of his herd. In fact winter is, after spring, his cattle's best season—that in which they can best take care of themselves with regard to food. From August to November is their hardest time. But the herbage which rendered the hills and plains one vast flower garden in spring is, though dead and dry as tinder, still nutritious; its myriad flowers have given place to seeds which have the qualities of grain; and, if the range be broad enough, cattle which have naught to do but forage, contrive to eke out a pretty fair living. But it were absurd to suppose that a single crop of dead herbage can afford, acre for acre, equal nourishment with the constantly renewed grasses of an eastern pasture."

But Mr. Greeley runs out of the meadow into the pasture and we cannot follow him, even to dispute the accuracy of his conclusion—for we are not shelling that cathedral now. Suffice it to say that most early Californians began to think about it that way and naturally they went from lamentations to somewhat systematic efforts to make turf grasses grow in California that they might have something like the eastern Timothy meadows from which to cut hay. They failed everywhere except in valleys in the extreme north of the State and in more strictly mountain valleys high up in the Sierra on the eastern border of the State where one finds many eastern grasses now established and thriving as they possibly have thrived ever since the first seed was shaken from immigrants' hay at camping places near the overland trails. Turf grasses are also to be found on some low lands in the valleys where continued summer moisture comes from below as a substitute for the summer showers which the clouds deny. But this also refers more to grazing than to hay making and interesting facts concerning such establishment of exotic grasses must be reserved for another occasion.

What, then, for Hay?—Oh, well, it was not so hard to take a hint. After the lamentations over the loss of eastern meadows were forgotten in the anger over the cussedness of eastern grasses which would not show delight at being brought to California, the wise ones fell into the Mexican way of taking things as they found them and soon found that they could cut wild-oat hay, of which there was more than they could use, whenever there was a decent annual rainfall. The pioneers soon found that wild oats were just as hard to get out as eastern meadow grasses were hard to get in, and there was therefore no lack of hay and why worry over the fate of Timothy and the other foragic apostles? Cronise in his Natural Wealth of California (1868) gives this picture to illustrate the way a botanical providence provided for the California pioneers when they consented to take a hint from the Mexican pre-occupiers:

"When California became first known to Americans the face of the country was nearly everywhere covered with wild oats. Though parched, in the long summer, the grain held firmly in its capsule, giving good pasture. The wild oat has bearded projections with bended joints like the legs of a grasshopper. The first rains limber out the

(Continued on page 512.)

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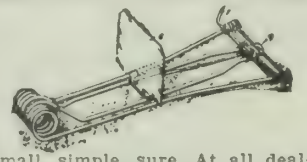
Nitrate of Soda

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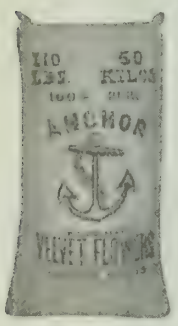
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R. F. WILSON, Stockton, Cal. Phone 2957.

The Latest About Citrus Scaly Bark.

[Written for Pacific Rural Press by Prof. H. S. Fawcett, Whittier.]

The cause of scaly bark, also known as Psorosis, of orange trees, is as yet not definitely known. Until we have been able to determine the cause of this disease, the treatment will also remain in an unsatisfactory condition. We have been investigating this disease and had hoped before this to be able to find out as definitely as we have for lemon gummosis the cause of the trouble.

First Stage.—The first evidence of the disease is a roughening of the bark over a small area on which the outer bark is broken up into scales and pushed off with formation of a new bark underneath. These areas at first are only a few inches in diameter and do not cause any noticeable effect on the foliage of the tree.

Second Stage.—This cracking and loosening of the outer bark goes on from year to year, usually very slowly, only an inch or so each year, before an area of any importance is formed. It finally, however, entirely surrounds the trunk or limb, and small drops of gum begin to form, especially at the advancing edges of the areas. The disease usually advances to the second stage in which a band or zone of affected bark completely surrounds the trunk or limb before it begins to make any appreciable effect on the growth of the tree.

Third Stage.—In the first and second stage, there is often no particular injury to the wood underneath the bark, except the formation of little pockets or rings of gum. As the disease continues on the tree, however, for five to ten years or more, the third stage is reached, in which the wood underneath shows a dark discoloration which may finally involve a greater portion of the wood directly under the affected areas. During all this time, the new bark tends to form under the old. This new bark is not normal, but is filled with small gum pockets and presents an irregular, roughened exterior.

Treatment.—If the disease is take in the first stage, or when the outer bark only is affected not more than a third the distance around the trunk or large limb, it may be cured by entirely dissecting out the affected bark and treating the area with Bordeaux paste or other good fungicide that is not injurious to the remaining bark. After the edges begin to heal, the exposed wood should be covered with asphalt paint or other good covering.

If the disease has gone to the second stage, or so far that the trunk is entirely encircled, the affected bark cannot be entirely cut off, since this would result in girdling the tree so treated and cause its death. If the wood underneath is not yet discolored, the disease may often be checked, but not always cured, by carefully rubbing off or scraping off the cracked, outer bark without taking off the live cambium underneath, and treating with a fungicide. To cut enough without cutting too deep requires a careful workman. The results that have been obtained in the treatment of the disease at this stage have varied and seem to have depended largely on the care with which the advancing edges were attended to before the application of the fungicide.

Third Stage Hopeless.—If the disease has advanced to the third stage, or so far that the wood underneath is beginning to be discolored and to die, there is, as far as I know, no way of getting rid of the trouble, unless the affected part is pruned out. If the trunk is in the first or second stage of the disease, it may be practical to treat it in accordance with the suggestions above. If it is in the third stage, it will usually be best to look towards finally taking out the tree. Sometimes a severe pruning back of the tree will seem to give it new vigor for a while, but I do not believe it will ever entirely cure a tree, the trunk of which has gotten to the third stage.

Active in Late Spring.—It is well to keep in mind that the scaly bark, or Psorosis, disease is most active, as a rule, in the late spring and summer when the tree is growing rapidly, and that it seems to be inactive in late fall and winter when the tree is more dormant. No matter what treatment you give it, therefore, the disease appears to be cured in the dormant period of late fall and winter, and this often accounts for there being so many reported cures for the trouble. Any remedy that is used must stand the test of a year or a year and a half before definite conclusions can be drawn.

This description of the progress of the disease and suggestions for the treatment, based on the best information we now have regarding the trouble, should be considered as only tentative. We are now carrying on a line of investigations and experiments which we hope will lead, before long, to a better understanding of the disease.

Preventive.—As a preventive measure, it would seem that the orchards subject to this disease should be given frequent tree-to-tree inspections, so that the trouble could be detected in its first stage, when it may be cured. The fungicide we are suggesting for use in the first and second stages of the disease, is Bordeaux paste made as follows:

Dissolve 1 pound bluestone (copper sulphate) in three quarts water in a wooden or earthen vessel. This can best be done by hanging it in a sack at the surface of the water. Slake 2 pounds unslaked lime in about three quarts of water. Stir together when cool, making a light blue mixture the consistency of whitewash. Mix up fresh each day or two as the mixed paste tends to deteriorate. It may be applied with a large brush like whitewash. This may also be used on healthy bark as an additional preventive.

The Durham district, not including the Chico district, produced 370 tons of almonds from 500 acres last year, reports F. L. Martinette. Some 5000 acres there are rapidly coming into bearing and it is estimated that the crop will be 1000 tons in two years and 2000 tons in four years. Considerable sentiment is being worked up there in favor of marketing through the State Exchange.

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Tehachapi Apples and Pears.

[Written for Pacific Rural Press.]

An apple and pear district about isolated from danger of insects nd diseases as the Imperial Valley, Tehachapi Valley and its three anches, known as Bear, Bright's, nd Cummings Valleys.

Standing in Tehachapi, you seem be in a grand basin surrounded lofty old mountains, over which ehachapi peak stands guard, 7800 et high and clothed in white snow om November to May.

For 50 years the 3500-acre basin as been farmed to grain. A few the farmers planted family orhards long ago, of which only pears nd apples have survived in conderable numbers. C. T. McKinnie stimates 200 acres of trees 20 to 0 years old scattered over the four alleys in small lots. Horticultural nspector L. J. Kanstein mentions he 10-acre Kiser orchard 40 years ld, from which 1000 boxes of mixed ngraded, unwrapped, and unsprayed pples were sold last year in Bakerseld at $1.50 per box.

Some 2500 acres of commercial orhards half apples and half pears, ave been planted on the floor and lopes of the valley in the past eight ears, mostly five years old. Only artlett pears and red apples are lanted, with a few sour cherries. ome Beauties, Jonathans, Winesaps, Ganos, and Delicious, in the orer mentioned, are the favorites. bout 125 acres of currants will ruit this year unless frozen.

Nursery stock undergoes drastic nspection which surprises some peole who are accustomed to lax enorcement of the quarantine laws nd consequently get careless about nspection before shipment.

"We have no pests or diseases here ow that worry us," says Mr. Kanstein. "While we dislike to inconvenience the nurserymen, they know the law; and our duty is to keep this valley clean, since we have such a wonderful opportunity.

"We turned down a shipment of 2200 currants and gooseberries day before yesterday because they were badly infested with greedy scale. Wolly aphis, which anyone could see, is holding up 125 apple trees received today. We inspect and handle every tree."

A little pear blight was found last fall by a tree-to-tree inspection in which all of it was cut out and a few old trees pulled out under direction of County Horticultural Commissioner K. S. Knowlton.

Until last year very little damage had been done by frost, though snow is expected until late March. The damage done last year and this suggests the need of cultural methods to delay spring growth or else the usual frost-fighting equipment to be used when danger comes. The late spring cold spells are making people think more of planting on the slopes rather than in the trough of the valley whither the cold air drains.

As the valley was originally a lakebed, and as the surrounding mountains are made of limestone and granite, the soil is a deep mixture of decomposed granite and sediment from weathered limerock. The east end of the valley is more clayey, while Cummings valley near the west end is of looser texture.

Irrigation is necessary for fruit. There are about 25 pumping plants in the district and the Tehachapi Fruit & Land Co. figures the cost of one irrigation at $1 per acre for pumping and distribution, using ¼ inch per acre. Their outfit supplies 1600 acres. Two irrigations and occasionally three are applied. The lift is about 100 feet—more, higher on the slope; less, below. The natural reservoir of snow on Tehachapi peak drains mostly into the valley, but is not much available for summer irrigation.

Most of the growers are taking good care of their orchards according to Mr. Kanstein, old trees receiving renewed attention. They are alive to suggestions for improvement of cultural practices. They believe in maintenance of their present practical immunity from pests and diseases; and they support the horticultural inspector in his determination to allow none of them to be imported.

ALFALFA IN YOUNG TREES.

[Written for Pacific Rural Press.]

It is a great mistake to let alfalfa grow close up to young walnut trees after the third year, thinks W. S. Herring who has a 25-acre orchard 9 years old in the Covina district of Los Angeles county. On ten acres where alfalfa was left four or five years, some of the trees got too dry and were killed, while others suffered.

Yet this soil four years later takes and retains moisture better than any of the rest. Judging from this and from the experience of a neighbor whose orchard was planted a year later, he thinks the neighbor's way was best, and that alfalfa three years is the best thing that can be done for a young orchard, especially where planted on land previously farmed to grain for 30 years as this was.

The neighbor threw up a ridge about two feet from each side of the young tree rows at planting, and sowed alfalfa in the open space.

Thus, the alfalfa and the trees could be irrigated independently. The trees needed water about every three weeks; but if alfalfa had to be watered at the same time, it would interfere with hay cutting.

KILLING REDWOOD SPROUTS

To the Editor: I have read an item in the Press concerning the killing redwood sprouts by F. L. L., Bethany. Let him bore three or four 1½-inch holes pointing downward a foot deep and tamp them full of saltpetre, then plug just above the ground. I have known this to be done in case of Redwood stumps and in killing timber and afterwards burning. The roots burn for months and I have dug out good charcoal from the burned roots.

Oakley. M. F. Lockwood.

Cucumbers grown under 100,000 square feet of glass at Hollywood are selling at $2.25 per dozen, according to Louis Derocher who manages the outfit. He was in Imperial Valley recently looking up the prospects.

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Prune and Apricot Growers on Their Way

The mass meeting of prune and apricot growers in San Jose April 14 was an exceptionally alert and interested assembly and notably unanimous in its transactions. Its purpose was to demonstrate to the growers of these fruits that they should be on their way and to show them the way to go.

President J. H. Bone, of the recently organized "Information Bureau," occupied the chair; Secretary G. E. Merrill was demonstrator of the way, as affirmed by the Bureau; Col. Weinstock and James Madison were chief advocates of its adoption as a working plan and about 600 growers constituted the participating body.

In a general way, the purposes and powers of the organization are expected to be as follows:

"To buy, pack and sell dried and green prunes and apricots and other fruits both for its own account and on commission for others; to operate warehouses and packing-houses wherever necessary or expedient in order to store or dispose of green and dried prunes, apricots and other fruits; to purchase, acquire, own, hold, lease and control real and personal property necessary for the transaction of the business of the corporation; to loan money upon and to negotiate loans upon green and dried prunes and apricots and other fruits and to establish domestic and foreign agencies to carry on the general purposes of the corporation."

The association shall agree to pay its members such minimum price per pound for their crop as may be equitable, less a certain percentage to cover the cost of operations; and the association shall further agree to pay, upon the delivery of the crop, such proportion of the agreed minimum price as may be determined upon, making the balance payable by interest-bearing notes. The price actually secured for the prunes in excess of the minimum price per pound, less the cost of operations, shall be remitted to each grower at the end of the fiscal year. Failure of a grower to deliver shall be covered by a definitely fixed penalty, as liquidated damages to the association.

Members of the association are to subscribe for the capital stock at the rate of, perhaps, $10 per acre; ¼ of said amount to be payable at the call of the association, the balance in three annual installments, to be covered by interest-bearing notes of the subscribers, and the payment of such to be annually deducted from crop returns. The members of the association shall receive interest or advances from the association on their paid-up capital. The capital of the association is to be used, as far as possible, in making advances to growers for purposes of cultivation and harvesting. The stock of the corporation will be divided into 25,000 shares of a par value of $100, 10,000 shares of which will be preferred and 15,000 common stock shares.

The agreement which will be put forth to be signed by the growers stipulates that unless subscriptions to the common stock amounting to $750,000 are made by March 1, 1917, and contracts for the sale of at least 75 per cent of the prunes and apricots grown in California for a period of three years, are entered into, then the agreement shall terminate.

California will be divided into seven districts, two members of the board of trustees to be chosen from the growers of each district except the district including Santa Clara county and the neighboring counties, which, on account of its predominance in the industry, will have 12 members on the board. These trustees will be elected by the membership of the different districts voting by mailed ballots. The trustees shall elect seven directors to conduct the association.

The Bureau of Information Ordered to Proceed.—When the exposition of the general plan of organization was complete, a motion was promptly made to adopt it. An amendment was submitted that the State Market Director instead of the Information Bureau should undertake the promotion of the corporation. Col. Weinstock explained that with nearly a dozen groups of producers pressing for organization it was impossible for him to do this. His position is advisory. By his appointment the State did not intend to displace initiative on the part of producers but to assist its development. The motion was withdrawn. Before the vote was taken another amendment was submitted that the mass meeting name fifteen members who should assemble at once as a nominating committee and name three who should undertake the promotion of the new organization. Being put to a vote this amendment was unanimously negatived. It was clearly the purpose of the mass meeting that the Information Committee should proceed to organize the controlling corporation.

The Bureau will undertake this work and without interfering with the function for which it was created, it will give definite details to the plan of organization and submit a complete organic act for the incorporation, a subscription sheet for stock-takers, a pledge for crop-signing and a soliciting force to submit the propositions to individual growers. The conditions which will make these signings forceful on March 1, 1917, have already been stated. Thus the plan goes to those who can give it the breath of life.

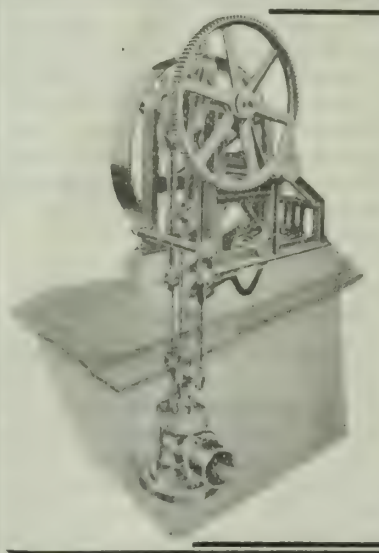
WHITE BERRY GROWERS QUIT.

The berry business has gone mostly to the Japanese in Los Angeles county. One of the last white men to give up was Judge T. B. Cannon, whose remarkable work with Crandall blackberries was described in Pacific Rural Press about August, 1913.

"I came here six years ago," said the Judge recently. "The first year, I sold 700 crates of blackberries and Loganberries. I had a little over $400 after all bills were paid. During the last few years I've been making less and less from the berries. Last summer the figures on one shipment of 24½ crates stood like this: Picking, per 30-basket crate, 30 cents; boxes 11 cents per crate; freight 3 cents per crate; commission for selling, 10 per cent of gross sales. This made the picking and marketing of the 24½ crates cost either $12.40 or $12.60. The returns were $10.40. The next 8 crates brought losses at the same rate and I quit shipping. I advertised that anyone could have my berries at 50 cents per crate on the vines, and sold $50 or $60 worth that way.

"This Gardena country is the greatest place for berries in California, but white men can't live and work like the Japanese do. However, they attend to their own business."

Secretary G. E. Harvey of the Pacific Rice Growers' Ass'n says that the crop in hands of growers will be cleaned up by April 26 and advises all holdings to be sold by about that time. The price for paddy is above what the price on cleaned rice justifies, owing to a strong demand from Louisiana. The California mills are buying for the season's needs at the advanced prices. The sales report April 12 shows prices up to $1.92 per cwt. W. H. Gilstrap sold 5,000 bags to the Gridley mill at $2.00.



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WORLD'S TRADE IN CALIFORNIA FRUITS.

By George Robertson, State Statistician.

The following is a brief summary of U. S. Exports of cured fruits almost exclusively produced in California, and imports of fruits with which our products are in competition:

	EXPORTS		IMPORTS.	
	Raisins.		Raisins.	
Year	Pounds	Value	Pounds	Value
1913	16,594,394	$1,006,509	3,564,298	$ 288,338
1914	21,688,429	1,485,417	3,873,784	267,329
1915	58,497,249	4,240,068	1,604,803	167,516
	Prunes.		Figs.	
1913	94,344,157	$5,551,208	19,162,494	$ 948,460
1914	35,228,737	2,582,560	20,506,563	968,448
1915	50,775,637	3,592,541	8,327,870	390,327
	Apricots, dried.		Olives.	
1913	21,325,523	$2,308,779	3,517,899	$1,589,090
1914	16,541,222	1,598,405	5,743,130	2,528,390
1915	25,747,600	2,323,001	3,713,315	1,551,152
	Peaches, dried.		Olive Oil (edible)	
1913	5,152,147	$ 341,215	5,179,209	$6,776,842
1914	7,387,161	458,983	6,780,936	8,421,499
1915	18,720,272	1,120,534	6,368,872	8,105,834

Exports of figs, olives and olive oil being small, are not shown separately in the custom returns, but included in "all others." Imports of prunes, dried apricots and peaches are not given.

Most of the edible olive oil comes from Italy, the quantity in 1915 being 4,654,761 gallons, France, 803,674 gallons, and other countries, 910,437 gallons. The value of imported olive oil for manufacturing purposes is $438,628 for 1915.

Of dried fruits in 1915 the bulk went to the United Kingdom. Of apricots 7,000,000 pounds went to the United Kingdom, 2,900,000 pounds to France, 2,000,000 pounds to the Netherlands and the balance to other countries.

Of prunes, in 1915, 15,000,000 pounds went to the United Kingdom, 10,000,000 pounds to Canada, 1,800,000 pounds to France and 18,000,000 pounds to other European countries.

STATE-WIDE OLIVE GROWERS' MEETING.

[Written for Pacific Rural Press.]

An all-day meeting of ripe olive growers is called for 10 a. m. April 24, at the assembly room, Sheldon Building, 461 Market St., San Francisco, by the Cal. Ripe Olive Ass'n. It will be a meeting of directors and representatives from the local associations and all olive growers are urged to attend. Market Director Weinstock will address the growers at 2 p. m. It cannot be a complete growers' organization unless growers come and ask all the questions they want to, and get acquainted with the State Association whose object is to work out state-wide standards for olive packing and to market the standardized goods.

In olive districts, where no associations are yet formed, it is urged that growers have a meeting and appoint delegates with power to act on important matters. The membership fee of $10 is suspended and may be changed, along with other provisions of the by-laws.

CALIFORNIA CURED FRUIT EXCHANGE DOING BUSINESS.

[Written for Pacific Rural Press.]

The Cal. Cured Fruit Exchange, whose cashier was recently jailed, held a meeting of directors and representatives from locals of the Exchange, April 11. All directors and all but one representative were present. Their recent financial difficulties caused by what is charged as criminal defaulting of the cashier, were investigated, the special auditor's report considered, and satisfactory arrangements made to carry on the business to close the 1915 crop. The attachments made by the late cashier on the fruit still held by the Exchange, have all been lifted.

Greatest harmony prevailed and the new Secretary-Cashier, W. J. Hill, is working in perfect accord with President A. E. Ogden. Mr. Hill is a fruit grower and has been president of the Shasta county Fruit Ass'n. since it was organized. He was one of the directors of the State Exchange from its organization until the late cashier succeeded in removing him last spring, when the defalcations are charged to have begun.

WINTER TOMATOES.

[Written for Pacific Rural Press.]

Sixty acres of tomatoes on North Whittier Heights supplied the Los Angeles and Pasadena markets until mid-January, long after most other districts had dropped out. These were grown among young orchard trees.

Among the growers is G. C. Smith, who planted four acres among lemon trees about Oct. 1, 1915. A crop of White Rose potatoes had already netted him $200 from this same piece in the summer of 1915 after all shipping expenses were paid.

Two rows of tomatoes were planted six feet apart in each center, and furrow irrigated once right after planting. They were cultivated and allowed to run flat on the ground.

The one light frost did not greatly injure the vines, but heavy rains in January stopped shipment on account of rot.

Elevators to handle grain in bulk to save the expense of sacks and sacking are being proposed pretty generally over the State. J. W. Jennings of the Ramina Ranch, Tehachapi, put one into very satisfactory operation for last year's crop. The Sacramento Valley Development Ass'n heard exhaustive reports on all phases of the subject April 15. Prof. B. H. Crocheron of the University has made a thorough investigation of doing away with grain sacks; and reports that the only hindrance is a lack of elevators such as dot the prairies of the Middle West.

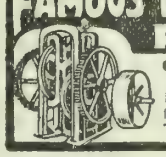
Late sown grain in Sacramento Valley needs a rain. Some of it is not yet sprouted. Half the usual crop is expected.

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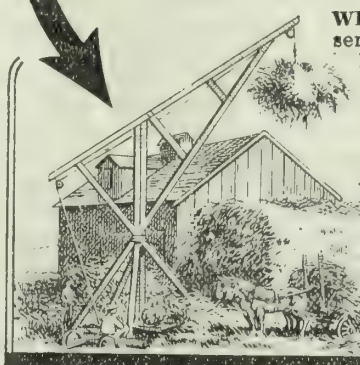
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The Uniqueness of California Hay.

(Continued from page 507.)

joints which, being again dried by the sun, shrink, causing the berry to jump about giving it wide distribution over the land—and falling into cracks in the soil is preserved in these natural receptacles from birds, squirrels and other animals."

And if hay could be made of wild oats which the Lord had endowed with such particular ability to hold on from year to year without perennial roots, why not sow barley and wheat to cut for hay when continued haying of wild oats took away the seed and reduced the yield too low? Evidently it was proper enough to help the Lord and one's self by sowing grain for hay and so the question of how to get hay in California was settled, and remained settled for a long time, and is now only disturbed by the growing greatness of alfalfa. And yet there were for a long time some twinges of the agricultural conscience. It seemed so unnatural a thing to cut in its youth a plant which seemed destined to hold aloof the golden grain. And did it hold to reason that such an immature thing could be fully nutritious and satisfying to the stock? Was it not something like serving a veal chop to a man with a mouth watering for a tenderloin steak? Men who had a chance to see their animals performing on such a diet soon lost their doubts of the desirability of grain hay, but the quidnuncs who specify army supplies were different. It required nearly half a century to convince these wise men that grain hay was good enough for a government mule!

The steps of hay development and the increase since the census crop of 1909 are shown in this way:

	Tons	Acres.
1850	2,038	.....
1860	305,655	.....
1870	551,773	.....
1880	1,045,119	758,024
1890	2,218,285	1,431,574
1900	3,035,266	1,431,574
1910	4,327,130	2,533,347
1914	5,265,000	2,700,000

What Our Hay Is Now Made of.—Before saying more of kinds of hay it will be well to note what our present considerable hay product is made of. The following classification of kinds, production and value is from the U. S. Census of 1910:

Hay Plants	Tons	Value
Timothy	20,001	$ 185,579
Timothy & Clover	73,183	629,575
Clover	20,380	212,289
Alfalfa 1,639,707		13,088,530
Millets	2,688	27,483
Other tame grasses	119,415	1,253,428
Wild grasses	281,033	2,028,494
Grains cut green..2,019,526		24,056,727
Coarse forage	60,611	438,095
Root forage	90,586	266,015
Totals 4,327,130		$42,187,215

One cannot be quite sure of the accuracy of this classification, because the schedule is the same as used in all parts of the country and enumerators may have had to throw figures somewhat to get them in. The product of "Timothy and clover" and of "other tame grasses" seems too large and "coarse forage" is too small to include fresh-fed and siloed corn and sorghum, bean straw, etc. The chiefly interesting thing in the table is the relative standing of hay from alfalfa and from "grains cut green" and their total compared with the total product, of which it is, roughly, five-sixths—which shows that the pioneers were strictly "agin nature" when they dreamed of installing eastern hay-meadows in California. For even the spread of irrigation has given us little more to speak of of humid region grasses—except in suburban lawns: Irrigation has simply magnified alfalfa, a plant as strange to the early easterners when it was brought from Chile in 1851 as was any plant they found growing here. It is now in a winning race against "grains cut green," for they are in the last decade of their leadership probably.

The Hard Row of Alfalfa Hay.—Without going into a discussion of the relative nutritive value and availability of these two hays for feeding purposes (a matter which belongs of right to the specialists on nutrition and feeding practice) a few things may be said about their standing in the public mind which has affected commercial value at different times. The present popularity and wide use of alfalfa hay is in sharp contrast to its disfavor thirty or forty years ago. During the latter seventies the writer remembers the arrival in San Francisco of a committee of dairymen from the Sacramento river region sent down to overcome the discrimination against their butter by city receivers who charged that its ill flavor made it impossible to sell it at anything like the price of coast butter and intimated that the cream must be "doped" in some way. As that was the time of the first wave of anger against bogus butter the intimation became, by inference, rather specific—especially as some city people claimed that they had seen casks of too fragrant oil going up the river to the dairy districts. This committee proved that they were feeding nothing but alfalfa and alfalfa hay and succeeded in shifting the indictment from themselves to the plant. The trouble was corrected by changes in feeding materials and methods and in handling the milk and cream and was no longer heard of. During the decade following 1880 there was great trouble over bad butter in the then new alfalfa district around Fresno. "Country butter" was declared too bad for good axle-grease and "city butter," sent through San Francisco from the coast dairy districts, was declared to be indispensable to good house-keeping. Here again alfalfa and alfalfa hay came under indictment which endured for a time, until the large, well-equipped creameries were opened to the alfalfa districts and began their conflict with the coast establishments for standing both in quantity and quality of product—and thus the prejudice against interior valley butter faded away.

Then alfalfa hay for horses came under indictment and city teamsters would not use it. Not only did it make the horses washy and prone to undue perspiration, but the public objected to have the pavements splotched and sprayed with ill-smelling green paint instead of being dotted with neat round balls, which long familiarity had rendered inoffensive. But though alfalfa hay can be advisedly used in a proper way even for horses at hard-hauling in the city streets, its unwise use has created a lasting prejudice against it—which it is hard for horse feeders in the alfalfa districts to consider reasonable because they rely upon it largely for their country work horses. However, as city motors are now so largely fed on gasoline the city hay supply is a diminishing quantity, both in use and in public interest. On the whole, alfalfa hay may be said to have made good for all purposes, to a degree far beyond early expectations.

Unique Popularity of Grain Hay.—The fact has been noted that the only enduring opposition to hay made from "grains cut green" was put up by the supply experts of the U. S. Army, and this existed until very recently. When the Spanish war and the occupation of the Philippines made it necessary to ship hay across the Pacific it took some effort by our congressmen to get Pacific Coast contractors a chance to file bids and longer still to admit the "grains cut green" to the place occupied by the sainted Timothy on the army schedules and we understand that oat and even barley hay are now admissible to the government mule menu. We mention this fact to emphasize the contrast between the conservatism of the army and the ready acceptance of grain hay by the California pioneers. They saw what the Mexicans did with horses and the "grain cut green" which they used for hay and had no doubt of their quality. But the more specific demonstration came later when the race-horse magnates put a test on the "efficiency" of California grain hay and stopped at no expenditure to secure the advantage of it. Joseph Cairn Simpson, who was probably the greatest equine-philosopher of the last century, was firmly convinced that the supremacy of California horses, which was so clearly demonstrated a few decades ago, was due in good part to the climate and the feed, and he used to like to point to the practice of expert horse men as supporting his contention. In one of a series of articles for the Sunset Magazine in 1901 Mr. Simpson gave these facts:

"A test between Timothy hay imported from Oregon and wheat hay of California resulted in a decided preference for the latter. That estimate has been endorsed by many trainers from the east. Hickok, Marvin, Goldsmith and Salisbury, after one trip east with trotters, when eastern hay had to be used, became so well satisfied of the superiority of California hay that in subsequent eastern trips they took a season's supply with them. There were differences of opinion as to which kind was best: wheat, oats, wheat and oats, and wild oats each had its advocates. The crowning testimony of its excellence was when

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dward Corrigan, known all over the nited States as one of the most uccessful managers and trainers of ace horses (which achieved many otable victories on every prominent ace course from San Francisco to ew York and from Chicago to New rleans) shipped a detachment of is horses from California to Eng- nd. Accompanying the horses ent several carloads of California ay—enough to last his large stable or a year. This was because his orses did not do as well in distant arts as they did when trained in alifornia, and this he could only scribe to the superiority of the hay, s all the other conditions in distant arts were favorable."

And farther comment seems unecessary to establish the quality of alifornia "grains cut green" for ay. These famous horsemen staked illions on it, before Uncle Sam ared officially spend a few thouands for it as meals for his mules!

A Bogus Timothy.—But though he recognition of value in "grains ut green" came early and with such mphasis as the above quotation rom Simpson shows, there was still longing for hay-meadows and for true grasses" instead of grasses ommonly called "grains." When he old eastern Timothy failed it was oped that a new Timothy might be ound. With much delight, therefore, the committee on awards at the State Fair of 1857 "called attention to a fine sample of California Timothy, grown on the farm of M. Williams, San Joaquin county, with heads large, heavy and plump and stalks sweet: full evidence that the grasses indigenous to the country have only to be noticed and cared for to fill a want in California agriculture becoming each year more imperative." Contemporary writers do not support this claim that hay grasses were increasingly called for. Pasture grasses of summer verdure were and the committee probably jumbled the two—but that is another story. The fact is that this "California Timothy" deserved neither the praise nor the prophecy based upon it. For, as Dr. H. M. Hall of the University kindly advises us, the reference is to Phalaris angusta, of which Thurber, in the Botany of California (1880), says: "Its better name is canary grass and it has some resemblance to a coarse, large-headed Timothy."

And yet wild grasses are of some hay value in California, of course, particularly on low, wet lands where they do make a coarse turf. But, as our table of kinds of hay shows, the area of such grasses is only one-tenth of the area or one-twentieth of the value of the total hay production. They do sometimes serve a very good purpose. Cronise wrote in 1868:

"Natural meadows of great extent are found interspersed among the watery tule lands. The grass is heavy, wiry, coarse and of inferior nutriment, but at times it is of priceless value. The year 1864 was one of famine to cattle; the rains were scant and the natural feeding grounds barren. Some enterprising men cut 50,000 tons of this coarse grass—saving a large number of cattle and yielding great profit to the adventurers."

These low lands serve a similar purpose whenever there is a very dry year and in 1898 cattle were driven and hauled even from the south coast district to the tule lands to save their lives—but that is largely a grazing proposition and out of place here.

More Anon.—But space limitations compel us to make hay of this article by cutting it between the milk and the dough. We have room neither to complete our "observations" nor to set forth the great moral and agricultural lessons which they justify; so we shall expect to finish at another time. And even that is a reflection of California hay conditions: if you fail to cut and cure all your hay horizontally, it will cure itself standing up!

HAY-MAKING WITH LITTLE SUNSHINE.

Notwithestanding the old saying, "Make hay while the sun shines," the best quality of hay would result if the hay could be cured without the sunshine, according to Professor J. E. Larsen of the Oregon Agricultural College. "It is easy to overdo the sunshine business, and the best green hay product is often ruined by too much sunshine in the curing. The quality of the hay depends very much upon the making, the best quality undergoing a certain degree of fermentation. Extreme light and sunshine prevent this and also destroy the natural green color, which should be kept in the cured hay as largely as possible. Good color and good quality are closely associated. Hay, especially grain and vetch, allowed to lie in small bunches until completely burned out, is low in value. It looks about like excelsior and is worth about as much for feed."

NATURAL RE-SEEDING OF COVER CROPS.

[Written for Pacific Rural Press.]

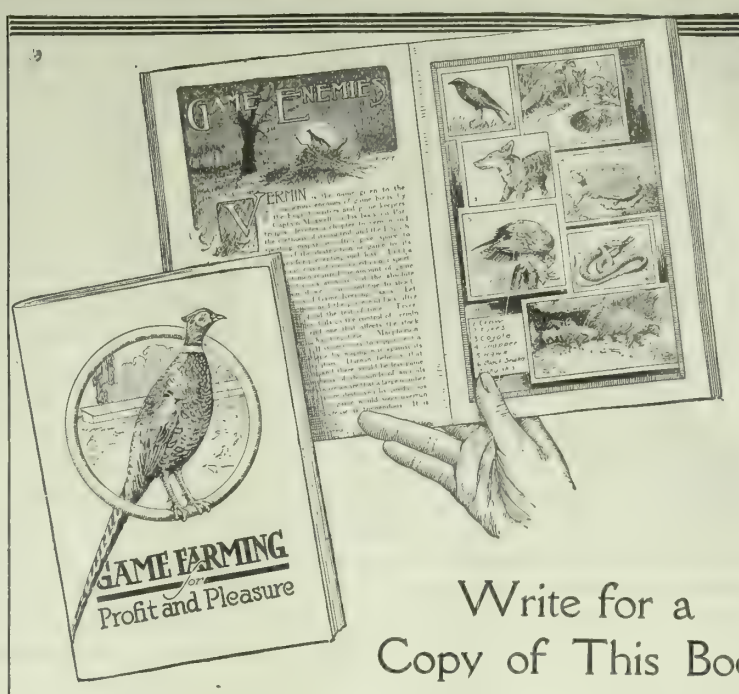
Leaving the middle of every other row in the orchard uncultivated during the entire spring and summer seasons, in order to allow the growing and reseeding of green forage crops is being practiced by some of the fruit growers in the Newcastle district of Placer county.

In order to irrigate, a strip five feet wide is plowed on each side, close to the trees. The water is run in furrows made in this strip of plowed ground. The following year the strip left unplowed is handled in the same manner.

The advantages of this system, as claimed by those following it, are: that the green crop is much larger than ordinarily obtained; that it insures the reseeding of that crop and that it prevents erosion on the hill side by heavy rains.

Mr. Jerilson of Newcastle, the originator of this system, has been following it for the last seven years. Several other fruit growers in the district have also taken it up and claim that a difference is noted in the health of the trees and as a result larger crops are being harvested.

A lime experiment on peas by Ernest Peters of the Carneros Farm Center shows that the liberal application increased growth over the plot receiving a light application, which in turn beat the plot having no lime added at all, according to Farm Adviser H. J. Baade of Napa.



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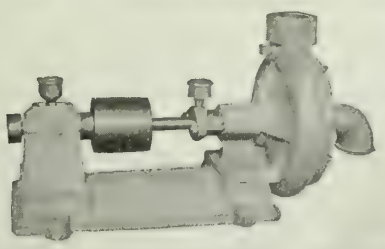
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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., April 18, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	.84	36.93	41.15	60	40
Red Bluff	.02	19.73	22.57	84	44
Sacramento	0	18.16	18.28	80	42
San Francisco	0	27.05	20.77	78	46
San Jose	0	16.30	15.63	80	36
Fresno	0	11.73	8.52	78	42
Independence	.20	10.32	8.43	78	—
San Luis Obispo	0	26.85	8.65	76	38
Los Angeles	0	19.89	14.79	72	48
San Diego	.01	12.54	9.32	70	50

THE WEEK

THE most conspicuous event of the week is certainly the mass meeting of prune and apricot growers and the forward march toward a growers' selling organization of which the general direction is sketched elsewhere in this issue. Two things were conspicuous in the transactions of that popular assembly: first, that a selling organization be undertaken; second, that the Information Bureau, established by the mass meeting of January 19, undertake the initiative in determining whether the selling organization can be realized or not. As this fact will be determined by the attitude of the growers on March 1, 1917, it is evident that the Bureau is expected to maintain promotive effort for nearly a year. Some growers have communicated to us an apprehension that the Bureau, which they thoroughly approve, and for the outlay of which they have enthusiastically contributed, may neglect or decrease the effort for timely and exact trade information, which will help each grower to do his own selling while they are working for the more potent and complete organization, which, perhaps, they are not yet convinced should be undertaken at this time. They are also apprehensive lest the funds which they contribute for information be expended for promotion. In the nature of things we cannot give any guaranty that such apprehensions are unnecessary because we have neither voice nor influence in the conduct of the Information Bureau, but we can perhaps administer this sort of assurance: first, that we have faith that men of standing and acuteness like those composing the Central Committee of the Information Bureau will not be diverted from the main purpose entrusted to them, viz.: to ransack the universe for facts which will affect the wise marketing of the crop of 1916; second, there are, among these men, those who are so staunch and conservative that they can always distinguish between direct sunlight and a rainbow, and will never agree that funds given for a present purpose shall be expended for a prospect, be it never so bright and promising. This is, of course, a matter of great importance, because if the Bureau dims the victory which we expect it to attain in its own line this year, it will thereby lessen the chances of growers signing up for the greater effort of 1917. From this point of view the Bureau now holds not only the chance of its own achievement, but the erection of the superstructure for which its achievement would be the foundation. For this reason it does not seem to us necessary to apprehend that the Bureau will relax its primary purpose, nor that it will divert funds from that purpose. Promoting the future organization will make the officers of the Bureau work harder and longer, but that, we believe, they are willing to do for the good of the industry which trusts and honors them. As for the funds to be expended, we have no doubt they will be separately provided by patriotic people and institutions, just as they have been most recently for the promotive work of the peach-growers' organization. Our advice to enquiring friends therefore would be :trust the men of the Information Bureau to do their work right loyally, and do not think they will be false to their little old sweetheart because their duty calls them to kiss the hand of a queen.

AMONG THE FUNDAMENTALS.

WE ARE excavating toward the economic and historic foundations of California's "general agriculture" this week, as we previously declared it to be our intention to do. Professor Gilmore leads us down into the subterranean chambers of agricultural policy that we may see the need of making our policies align with the requirements of soil productivity and crop success. The underlying ideas and demonstrative facts which Professor Gilmore sets forth are of course primarily suggestive of what every individual owner of land should consider for his own greater reward, but beyond that they cast illuminating glances upon California agriculture as a whole. Because, though there is most direct suggestion of policy with annual crops as they succeed each other, there is also in rational rotation on annually cropped lands, most direct connection with the maintenance of fertility on lands which may be held for decades without change in surface vegetation. Rotation sequence, diversification, the golden tread of the stock, the trenching and aeroplaning of the legumes, yes, even the shattering dynamite and the gas-bombs of fertilization—all these have a bearing not alone upon common staple food crops, but upon the most elegant and unique products for which we bring back to California the gold, which from more than half a century ago until this day, California is sending abroad throughout the world. Let no reader think for a moment that a rational general agriculture for California has only to do with things common to the earth all over the world, for upon it rests the future of the things in which we take so much pride because they are characteristic and different.

We set beside Professor Gilmore's philosophic dissertation a gossipy sketch of our own on the subject of hay in California, because, of all crops gathered and marketed in natural form, hay is nearest to the soil most fundamental in its relation to the power which gives industrial service to our more highly developed products. Of course, from the point of view of agriculture, it is regrettable that a product from the firmament under the earth should be largely displacing hay, because gasoline makes no manure, feeds no higher crops, and therefore serves no rotations, save those of trucking, tractoring and joy riding. And yet our hay product is very important and twice in value the gold output of the State. Besides, this product is so unique in its source and characters that knowledge of its origin, its humanistic relations, and its distinctive qualities, as popularly demonstrated, must be important—particularly to younger or newer comers who are apt not to know the pathways by which present things were attained.

IRISH STEW FOR MUNITIONS.

WE WERE quite puzzled the other day over the receipt of an inquiry from a canner in Wisconsin asking that we send immediate information as to whether "a large quantity of carrots could be bought in California," and "what part of the State carrots were largely grown, either for feeding live stock or for other purpose." We had to answer that we did not know of any large supply left from last year's crop and that, though carrots are grown in many parts of the State in moderate amount, we did not know of any particular carrot-belt—but we had that carrot in our neck for several days, wondering about it. On Friday last there came in the press dispatches one from Eau Claire, Wisconsin, stating that the cannery in that town was "being remodeled to turn out twenty-six million quarts of good old Irish stew, at the rate of half a million cans a week, for the Canadian soldiers on the European fronts." "The contract was awarded by the Canadian government, and it was expected that the first half-million cans would be ready by the middle of May to go abroad via Halifax. But that is not all of it, for Irish stew seems to be a great munition, and the Wisconsin canners have only one end of the contract. It is announced from Seattle that all the available onions and carrots in Western Washington had been shipped to the canning plant at Ladner, B. C., and that 8,500 tons from Oregon and California had gone to Ladner. Under the circumstances we presume we shall soon be short on hold-over carrots; but that one contract, at the rate of half a million cans a week, will take a year to fill, and it might not be a bad idea for Californians, who will have new onions and carrots ready before any one else can, to see how badly the Eau Claire cannery wants them. It may be that old-fashioned, yellow French carrots may be required, but, under the circumstances, White Belgians ought to be accepted without question.

WHAT TO DO WITH THE OLD WORLD?

IF WE understand aright all the financial figures which are now afloat, it really seems that we should frame some reasonable conclusion as to what we should do with the "old world" when we get it. It looks as though we might have to foreclose our mortgage, and a mortgagee is always credited with prophetic figuring as to what he should do with your property when he gets it. Have we loaned all the money we should to those riotous, wasteful

wners across the Atlantic, or should we give hem more to hasten the reversion of the prop- rty to us? They are not treating us as benefi- ent and benign capitalists ought to be treated. They are nosing their thumb-ends and wiggling heir fingers at us. They are making us empty f carrots and full of prunes. They are mock- ng at us in all the ways they can think of, and et we are making them continually able to in- dulge in their destructive prodigality at home nd their insolence abroad. Should we not foreclose on the property and run them off the world? This question adheres to the report of new French loan of two hundred million, which raises another question as to how long his country can continue to finance Europe. Comptroller of the Treasury Williams says: "The surplus reserve held by national banks would give a further loaning power of three o four billion dollars. Despite loans of sev- ral hundred millions, there is no sign of dverse effect, for the banks of this coun- ry were never stronger." He says farther hat the mere increase in reserves of national banks during the last year exceeds the total resources of the Bank of England, the Bank of France, the Bank of Russia, the Reichbank of Berlin, the Bank of The Netherlands, the Bank of Switzerland, and the Bank of Japan. And this seems to mean that our national banks have gained, over and above their normal re- serves, $3,000,000,000, which is more than the aggregate resources of the great banks of Europe on which exact figures are obtainable, and this country holds the balance of power. We have to confess that we do not know ex- actly what these immense figures mean, but timid people, who are shivering over the fear that after the present war each of the belliger- erents will proceed to invade the United States, either abreast or in tandem, should re- member that they would have to borrow more money from us to pay their fare!

"HER BREATH CAME IN SHORT PANTS."

WE ARE probably quoting from the text of some long-forgotten novel in which this memorable passage welcomes the hero who has arrived along the ridge just in time to balk the villain who is trying to throw the heroine over the cliff into the boiling brine. We have always refused to accept the words as merely descriptive. We have felt that they concealed some portentous prophecy. We thought we saw the fulfillment of it over forty years ago when Dr. Mary Walker was facing a crowd of persecutors in her characteristic garb on Washington street. We are now convinced that Doctor Mary was only an omen, and that the principle of women's right in personal adornment, for which she contended, has but just reached its great victory, and the idea of a woman's capable defense against ruffianism is still dominant. We read in a Washington dispatch that Mrs. J. Hungerford Millbank, head of the "American Women's League for Self-Defence," which has been holding weekly drills all winter, recently asserted that the clothing worn by women was not suited for self-defense. Others denounced dresses as a "curse and burden" to women. "When your husbands go to the front," said one speaker, "you will have to guard your home against marauders. It will be man's work and you cannot do it in dresses." The question came then on the adoption of a proper costume for endangered women and the vote for trousers was carried by an overwhelming majority. This decision will be hailed as reasonable by many California farming women, who have already acted on their own experience that to do a man's work one must have the freedom of man-like clothing. The report from Washington, however, does have one feminine touch, for one of the speakers "objected to trousers on the ground that such a uniform would be opposed by husbands." But that apprehension does not seem to us well placed. Current fashions make it impossible for a man to tell whether a lady is encased in a skirt or in pantaloons. It is the psychological moment to make reforms, for a man cannot detect the necessary changes and will not growl about it.

Queries and Replies.

Querists must give name and address.

Sour-Sap in Apricots.

To the Editor: Among our apricots planted last year, a considerable number failed to start this season. All did exceptionally last season and those which started are doing remarkably well now. We are told that the cause of the trees failing is "sour sap." Will you enlighten us on causes and methods of control?—N. L. C., Nuevo.

We have frequently discussed this trouble, but perhaps newer subscribers may like a re-statement. Sour sap results from interference with normal circulation and induces fermentation of the cell contents and injures or destroys the tissue. The most frequent cause is the rotting of the root hairs by water standing in the soil. If this condition is partial or transient, the tree may lose part of the top-growth by die-back and recover vigor by the restoration of normal root function. If the injury is greater, it may kill the tree outright. There is no treatment except cutting back the top, which may lessen the burden on the roots until they recover sufficiently to push out good new growth. The preventive is under-drainage to rid the soil of surplus water or, rather, to prevent its accumulation. Another preventive is to have apricots on myrobolan which is able to survive considerable soil saturation. The reason why some trees are injured and others not is because the safe trees are in places naturally free from standing water. This of course does not mean water standing on the surface, but in the soil. Soggy places will cause the trouble whether on hillside or on flat land.

Young Trees Not Fruiting.

To the Editor: We have in our garden a couple of fig trees—a Brown Turkey and a Black Mission. The trees are four years old and have borne very few figs. The figs on the Brown Turkey set but have never matured. The black fig has matured a very few. We have also several strawberry guavas four years old. They are large, healthy shrubs and blossom profusely, but only two have borne and those very little. Can you suggest the cause? —Suburban, Los Angeles.

If your trees have a healthy aspect, clean large leaves and good new wood-growth, the probability is that they will fruit better as they get older. The stronger the growth of a young tree the less likely it is to hold on to its fruit, because its vegetative activity is too great. If you increase this activity by too generous fertilizing and watering you are not helping the plant to fruit but you are postponing the fruiting. If so, stop fertilizing and use less water and do not prune at all. If you help a plant to realize that its mission is not riotous living, it will give you more fruit. An old tree usually makes better use of generous treatment than a young one.

Oil and Gasoline Under Oak.

To the Editor: I am worried about one of my fine oak trees. I have discovered that gasoline and oils have been dripping from tanks kept under the tree, and I fear this has been going on for a long time. My attention has just been attracted to the condition, and I am wondering whether I could apply anything to the soil that would have a tendency to overcome the injurious effects that might be produced by the oils. I cannot guess as to the quantity of oil that has been absorbed by the soil; it may be that the quantity is negligible but on the other hand the dripping may have been considerable.—Suburban, Santa Clara.

We should first prospect the situation by digging to ascertain by feel and smell whether any considerable amount of soil had been saturated—removing all such as far as feasible without too much interference with roots, and refill with clean earth. You probably will not find any considerable amount, for heavy oil spreads very slowly and getting out all you can this way would probably head off injury. If you do find earth which should be removed treat the excavation freely with wood ashes and water before filling with fresh earth. This will saponify whatever oil it catches up with Whatever may be present could be disposed of by digging up and exposing the soil to the air. Unless the tree shows signs of sickness we would not be apprehensive of trouble.

As for the gasoline, although it is very destructive of roots, its tendency to vaporization will limit its extent and duration of injury. and tend to render it inocuous.

Spring-Sowing of Alfalfa.

To the Editor: I have red loam with a little red clay or adobe mixed with it. Is it too late this year to plant alfalfa and would it be advisable to plant a light crop of oats or barley with the alfalfa? I irrigate from wells.—F. H., East Nicolaus.

It depends upon the land and what shape it is now in. If it is low, moist land, it could be surface worked now and a good catch might result if we have some late showers to bring up the seed. If it is upland, plowed last fall or winter and harrowed after plowing, there might be moisture high enough to hold a good stand with late showers until the plant is high enough to irrigate to advantage. If it is plain land not yet broken and dried out badly by this long dry spell, it would be too late to begin now to get it into shape. In any case do not sow any grain with the alfalfa seed: it would only help to dry it out.

Peach Moth on Almond.

To the Editor: I send you almond buds which have some little worms in them. Kindly tell me what they are and what to spray with to kill them and also when to spray.—G. W. S., Brentwood.

They are the larvae of the "peach moth." They work in the buds and new growth twigs causing them to die. Later they tackle the fruit. They are killed by spraying with winter-strength lime-sulphur, just as the buds are beginning to swell, for the worms are then coming out of burrows in rough bark. If this spraying is well done the killing is large enough to make summer treatment unnecessary.

Rotation; Driving-Wheel of Prosperity.

(Continued from page 505.)

	Bushels	Rainfall inches
1908	48	13.5
1909	37	23
1910	22	11
1911	11	23
1912	9	9.5
1913	4	9
1914	11	29

It will thus be noted that the yield has gradually diminished irrespective of the rainfall except for the two dry years of 1912 and 1913.

The classic experiments of continuous cropping at the Rothamsted Station in England and covering a period of more than sixty years, yielded these results:

	Wheat alone per acre (bus.)	Wheat with manure per acre (bus.)
1844-53	15.89	27.11
1854-63	16.66	37.40
1864-73	12.88	35.20
1874-83	10.45	29.73
1884-93	12.15	38.66
1894-03	12.27	39.53

From these results and from my experiences in travel and study in other countries it is pertinent to state that permanent and consequently profitable agriculture cannot be maintained by continuous cropping when nothing is returned to the land. It behooves all who are interested in the welfare of agriculture and the State to see to it that the lands are not ruined before steps are taken to maintain their fertility.

Available Crops for Rotations.—California agriculture suffers to a certain extent because of the relatively small number of crops that will do well during the summer months. The climatic conditions especially as related to moisture supply, are such that the latter part of the summer finds the country barren of crops except where irrigation water is available. The summer crops that do best, therefore, are those of short growing period that can be planted early and that will mature a crop before the moisture supply is exhausted. Three very promising crops that have these characteristics and which find a place in our farm economy at the present time, are beans, Sudan grass, and the grain sorghums. The value of these crops is being more fully recognized from year to year, for California is rapidly striding towards leadership in bean and sorghum grain production.

Among the varieties of beans that are especially well adapted to the summer growing conditions of San Joaquin Valley, are the blackeye, pinks, and red Mexicans. The teparies are well adapted, but they are not of the best quality.

Among the grain sorghums that are suitable may be mentioned dwarf milo, feterita, brown durra, and shallu. All of these are short season crops and if well cultivated should leave the soil in good condition.

Other crops that lend themselves to rotations according to uses and adaptations are alfalfa, cotton, corn, sugar beets, potatoes, Sudan grass, small grains, flax, buckwheat, sunflowers, and hemp. It is worthy of note that all of these have not only a money value in their production, but aid in general agriculture, rendering communities more permanently established as well as prosperous.

Importance of Organic Matter.—Organic matter is the heart of the land; without it the land becomes dead. It fluctuates widely in both temperature and moisture relations and becomes gritty and of impossible physical condition. An optimum amount of organic matter in the soil results in a soil of good tilth, of good moisture-holding capacity, and there is usually an available supply of plant foods for reasonable crops.

While it is evident that organic matter is important, yet under our climatic and soil conditions the maintaining of a suitable supply is not easy; and with diminishing yields, whatever means may be adopted may not prove profitable. In many parts of the interior valley where biennial cropping is necessary it is difficult to secure sufficient moisture in the soil to rot the stubble and straw that is grown upon it. Consequently, the practice of burning straw is so largely followed on the grain lands. While this practice is conducive to profitable crops for a while, yet in time it must stop, for under it the soils are gradually losing their supply of organic matter and are consequently diminishing in yields.

A few years ago some experiments in grain production were conducted at Ceres, Stanislaus county, in the course of which the influence of organic matter on wheat yields was demonstrated over a period of two years that both the kind and quantity of organic matter had a decided influence on the yield of wheat. In the last six entries the crops were plowed under and not harvested as crops:

Crop or Treatment	Bu. per Acre.
Wheat after wheat	32.7
Wheat after fallow	41.6
Wheat after horsebeans	43.1
Wheat after field peas	43.3
Wheat after wheat	38.6
Wheat after horsebeans	42.3
Wheat after rye and vetch	44.4
Wheat after burr clover	48.2

Storage of Nitrogen by Leguminous Crops.—The benefits of legumes in rotation are two-fold. In the first place leguminous plants usually carry a larger amount of nitrogen in their substance than most other plants and when they, or any of their parts are returned in a rotted condition to the soil, the soil is enriched not only by the organic matter, but also by the nitrogen thus added. In the second place, by bacterial growths upon their roots, these plants restore a considerable amount of nitrogen to the soil by the rotting of these parts. The species of this family of plants, however, differ widely in the amounts of nitrogen that they contain and return to the soil. The sweet clovers, alfalfa, vetch, bur clover, and the cowpeas excel most of the others as soil renovators. When a crop is grown to be turned under some choice should be exercised. Usually the considerations of cheapness of seed, season of growth, and value as a renovating crop are considered.

A classical experiment showing the amount of nitrogen stored up by legumes is that reported by the Rothamsted Station in England. After a period of twelve years, sweet clover had stored up 702 pounds of nitrogen per acre valued at more than 105 dollars. Alfalfa had stored at the expiration of the same period 1916 pounds valued at 287 dollars, while vetch had stored 911 pounds

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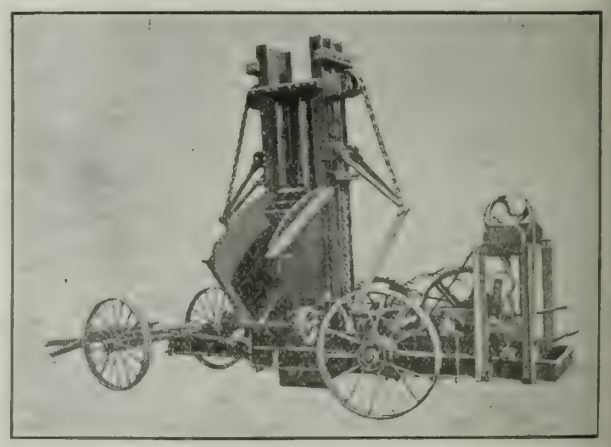
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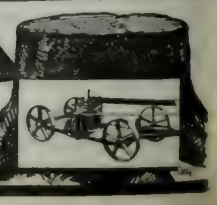
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valued at more than 136 dollars. Another experiment shows the enrichment of a soil by 303 pounds of nitrogen in a period of five years by the growing of clover.

When it is remembered that alfalfa is a perennial crop and has to be reseeded only once in a number of years, while the others are annual crops, it will be recognized that alfalfa has a high value in addition to its value as a forage crop. In fact alfalfa in California should be employed both as a forage producing crop as well as a rotation crop. When the crop reaches a stand of less than 75 per cent it should be plowed under and followed by several annual crops, such as grain, potatoes, and sugar beets, then restored to alfalfa. For short rotations, vetches, cowpeas, or beans are more adaptable.

Crops of Different Habits.—The desirability of growing sugar beets, from the point of view of soil betterment, cannot be denied. It was at first supposed that the beet would impoverish the soil but the fallacy of the statement was disproved in the course of time. Although granting that the beet draws heavily on the plant foods in the soil, the beneficial results more than compensate for this. Summed up they are: The opening up of lower layers of soil by the rootlets, the bringing to the surface soil of plant foods from deeper down in the ground, the humus value of the rootlets and the tops, the aeration and better wetting of the soil, the deep plowing and thorough cultivation, and the deep subsoiling given when harvesting.

In Montana Agricultural Experiment Station Report for 1903, F. B. Linfield reports that a series of 1-acre plats which were used for a 6-year rotation experiment during six successive years were sown to oats. After wheat the yield was 1,590 lbs. of grain per acre, after peas 3,405 lbs., after clover 2,760 lbs., after barley 1,335 lbs., after oats 1,952 lbs., and after sugar beets 2,620 lbs. of grain per acre. From this it can be seen that the yield of oats after sugar beets was only surpassed by the yield of oats after leguminous crops, viz: peas and clover.

Varied Crops and the Distribution of Labor.—Although the tractor is competing strongly with horse labor on the level lands of the valley, yet in either case the continuity of employment for these forces on the farm is an important factor of success. The great decrease in the acreage in wheat during recent years is due not only to the unprofitableness of small yields, but also because on many of the large grain farms, a relatively large number of horses are kept throughout the year for a relatively short period of service. This system entails a loss not only in the investment in the animals themselves, but in the keep of the extra horses while they are idle.

By investigations conducted both in New York and in Minnesota it has been shown that by arranging a rotation of crops so that both man and horse labor might be employed nearly continuously throughout the year, not only was the number of horses reduced, but the crop yields increased, and there was a considerable saving in the keep of the animals relative to the work they did. This saving is even more noticeable where dairying is included in the farm operations. An idle horse on the farm should be looked on in the same light as a hired man asleep in the shade of a tree. Where a cropping system is arranged in such a way as to continue the land preparation and planting season throughout the fall, winter, and spring months, and the cultivating and harvesting season throughout the summer and fall, this arrangement along with the care of livestock will insure a more even distribution of labor throughout the year.

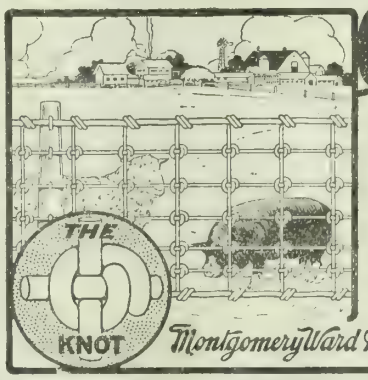
The Influence of Livestock.—The best system of diversified farming is one which includes both crops for sale as well as forage crops for live stock, and the greatest economy comes from feeding the livestock on the farm rather than in selling the forage crops from the land. Thus in the production of alfalfa, sorghums, and the coarser fodder crops, the farmer is compelled to keep livestock on the land. The investigations of the United States Dept. of Agriculture, as well as several experiment stations, indicate that the largest labor income, that is, the net proceeds, are paid from those farms where there is a rational balance between crops produced for sale and those produced to feed to livestock on the land.

Another point of importance in the relation of livestock to general farming is the prevention of waste. The one crop farm is unusually subject to wastes owing to the urgency of work at particular times, such especially as harvest. Thus the sugar beet farmer can make no use of the crowns and tops, except at best to plow them under. The potato farmer can make no use of the culls, but has to leave them in the fields where they perpetuate disease. In the bean harvests there are shattered beans as well as large quantities of straw which if used with economy must be fed on the place.

Perhaps one of the greatest benefits to be derived from crop rotation is that it teaches system and efficiency in organization to the farmer. A crop rotating system when worked out successfully requires the closest study of all the factors involved in crop production. Cost accounting and the balancing of farm operations are the outcome of this study and these large factors in the success of farming.

SOIL-COLOR NOT SPICE.

Cinnamon Hill is the (copyrighted) name adopted by County Horticultural Commissioner G. W. Harney of Yuba county for a new ranch located on the State Highway between Marysville and Wheatland in Yuba County. The buildings, wide-porched bungalow, tower, etc., recently completed, occupy a commanding site on a high knoll overlooking the highway and the countryside. The ranch consists of about forty acres and is planted to almonds, Bosc and Comice pears and berries. The name is taken from the color of the soil.



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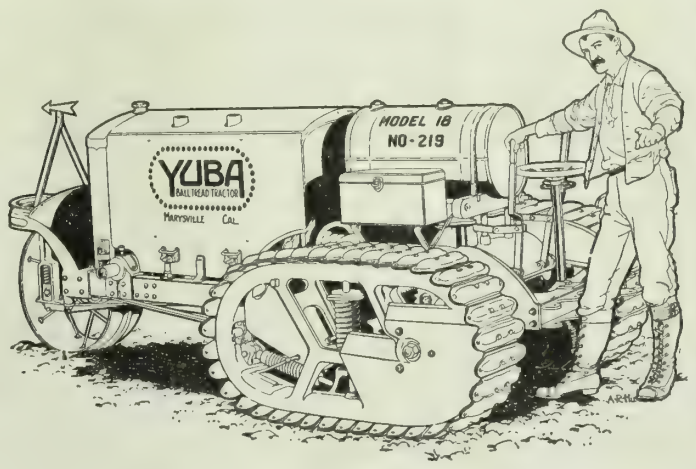
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General Agricultural Review.

GRAIN AND FIELD CROPS.

The San Joaquin county potato acreage is smaller than usual.

Sudan grass may be planted till June according to Farm Adviser Rubel of Alameda county.

The Salinas Journal prints the statement that California consumes $25,000,000 pounds of rice per year.

Alfalfa hay in Yolo county is normal in quantity and quality. Some of it is being sold for $6 in the shock.

The Sperry Milling Co. have heartily endorsed the grain elevator idea and are planning a system of local elevators for their own grain.

On Dixon ridge fall sown grain looks fine. It would have to be made into hay if a hot wind should come, though very little grain hay is usually made.

The Turlock Merchants and Growers' Ass'n has leased the land and let contracts for a warehouse and loading platforms 400 feet frontage on the S. P. Ry. at Turlock and 200 feet at Keyes. They are also building a warehouse at Denair.

Eastern mustard manufacturing companies have contracted for most of the mustard seed to be grown in Santa Barbara county. The Lompoc district supplies the world, having an annual output of about 1,500,000 pounds.

The average condition of winter wheat in U. S. on Apr. 1 was estimated by the U. S. Dept. Agr. at 78.3 per cent of normal as against 88.8 a year ago, 95.6 per cent two years ago and 87.3 average for the past 10 years on Apr. 1.

Arakelian Bros. of Fresno, who expect to handle $5,000,000 worth of cantaloupes this season, plan to put a sticker on each one. They are said to control ¼ of the 3500 acres planted to cantaloupes in Cal. A publicity campaign is to help stimulate consumption.

The general opinion of grain men about Woodland, Arbuckle, and the adobe land south and east of Dixon is that unless it rains pretty soon there won't be ¼ of a normal crop. If it rains and everything is favorable, there will be chance for ½ or ⅔ of a crop.

The Fresno Broom Factory is to put in 1,000 acres of Standard Glory broom corn on John Decker's ranch at Lemoore this spring. This variety produces a fiber of better quality than is ordinarily used for brooms and will be used exclusively if no unforeseen disadvantage arises.

The Turlock Merchants and Growers' Ass'n estimates that there will be 5542 acres of watermelons and cantaloupes in that district this season, of which they have 51 per cent or 2700 acres under contract. The district output is expected to be 3,000 cars as against 1370 cars last year.

Some alfalfa growers of Fresno county were recently reported busy with their first cutting. Some of them are said to have forgotten since last year that it takes a little longer for the first cutting to dry. There is no more danger of losing the leaves after a couple days of drying the first crop than after ½ or ¾ of a day with the other cuttings.

DECIDUOUS AND GRAPES.

The cherry crop in San Joaquin county is very light.

Dropping of apricot foliage is bothering growers in Kings county.

A half crop or less of prunes and apricots is reported from the Hollister district.

A New York firm shipped Dinuba grapes last season from New York to Buenos Ayres, South America.

John Lawton of Fillmore contracted 200 tons of green apricots last week at $35 per ton f. o. b.

The Sonoma prune crop is reported less than half that of last year, which was 20,000,000 pounds.

Eastern peaches have been hurt by extremely warm and extremely cold weather.

Offers of 9 cents for apricots and $30 for pits were reported to the San Jose Grange meeting Saturday.

A. W. Rechel reports the prune crop light in the Geyserville section. Many young trees died of sour sap.

The Ventura apricot crop is reported better than the other southern counties but considerably lighter than usual.

A half box of Purple Guigne cherries was shipped from Vacaville Apr. 10 from the T. L. Gates ranch. They sold for $25 in Chicago.

Many of the larger speculators have sold short at low prices and to date have not covered ⅓ of their sales, according to the Information Bureau.

Peach growers on the west side of Yolo county are very enthusiastic about the prospects of the new peach association and are unanimously for it.

A 5-cent basis price is now offered for 1916 prunes and the Information Bureau believes that no grower should take less than 5½ cents for spot or future goods.

The Humboldt Farm Bureau is well along toward buying the cannery of the Humboldt Fruit Canners' Ass'n. at Arcata to put up fruit, berries, and vegetables this season.

A surplus of money in the East and workmen busy at higher wages than ever before, are pointed to as evidence that more California fresh fruit will be consumed than ever before, if we can furnish it.

The Feather River Growers' Ass'n, a local of the Cal. Growers' Ass'n, is said to be assured of sufficient support in the fruit territory from Chico to Tudor to justify operation of a co-operative cannery.

A heavy pack of peaches is expected by both Visalia canneries. Their holdover is about 20,000 cases, which is less than for many seasons. War orders have already reduced the stock to less than they had on hand last July.

Napa County Horticultural Commissioner J. J. Fox estimates the prune crop in Napa Valley at less than half of last year's yield. Apricots will be negligible. Pears and apples generally well set. Most of the peaches will be full crop.

Secretary G. E. Merrill of the Prune and Apricot Information Bureau credits Col. Weinstock and the British embargo with causing events to move faster than was anticipated last spring, toward a capitalized prune growers' organization.

Almost everyone in the Fresno district is reported to have been sulphuring their vines this year, but most of the peach orchards are neglected. Most of the peach men used all the sulphur they had last year and would not buy any more at the advanced prices this spring.

Apple growers and shippers of Pajaro Valley are to have a general mass meeting at the Auditorium, Watsonville, April 22, p. m., to discuss the packing and marketing of the crop next fall, to hear announcements of the policy of the Watsonville Apple Distributors, and to elect its officers. Harris Weinstock will be there.

CITRUS AND SEMI-TROPICAL.

The first full carload of Valencias from Lindsay were shipped April 6.

The Black Mission fig crop of the State is mostly bought up by brokers at 3½ cents.

Eighteen acres of Marsh Seedless grapefruits are being planted by C. A. Reves near El Centro. The ranch already has 13 acres of fine Valencia and Navel trees.

Pomona Valley expects to ship 600 carloads of Valencias, the crop being the biggest ever, and of fine quality.

NUTS AND OLIVES.

The almond crop in San Joaquin county is especially light on the old trees.

The campaign is on for state-wide celebration of California Ripe Olive day May 16.

The hot drying east wind knocked

WHICH?

TEMPORARY GATES.

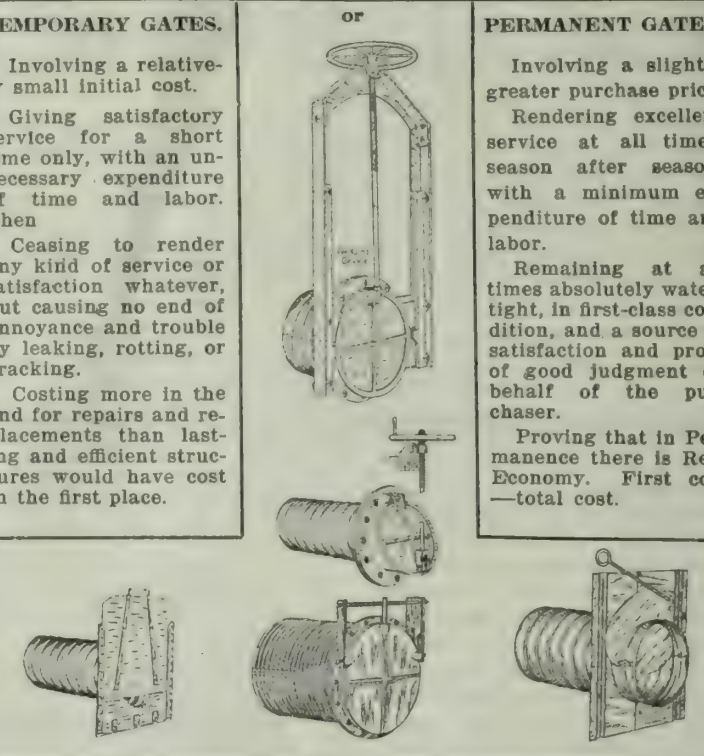
Involving a relatively small initial cost.

Giving satisfactory service for a short time only, with an unnecessary expenditure of time and labor. Then

Ceasing to render any kind of service or satisfaction whatever, but causing no end of annoyance and trouble by leaking, rotting, or cracking.

Costing more in the end for repairs and replacements than lasting and efficient structures would have cost in the first place.

or



PERMANENT GATES.

Involving a slightly greater purchase price.

Rendering excellent service at all times, season after season, with a minimum expenditure of time and labor.

Remaining at all times absolutely watertight, in first-class condition, and a source of satisfaction and proof of good judgment on behalf of the purchaser.

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Irrigation Gates—Automatic Drainage Gates—Reservoir Gates.

California Poultry Practice

Every poultry raiser of California should have this book. It is very practical and will help make your business profitable. In the preface of the book the author says:

"This book is not an accident; it is born of a desire to help others to avoid the stumbling-blocks in the poultry business, and at the request of many readers of The Pacific Rural Press, and other papers.

"With forty-two years of experience with poultry it is expected that I have learned a few things about it; it's a poor business that does not teach lessons in that length of time. Don't you think so?

"There are books, yes, books without number, on poultry matters, but many of them are mostly theory. This book tells you just what I have done and how I would do it.

"It is a book of action, and it is action that counts these days. We have to act in the living present if we want to live. I want to live and I want others to live, too, and as I have learned these things by experience it is fitting that I should tell others how to obtain results without paying such a big price for the experience.

"The things told you in this book are original, unorthodox, but strictly practical; and if you will read and then heed, you will be well satisfied that the author has given you your money's worth. California is an empire in itself, and I am sure there are enough men and women engaged in the poultry business, or wanting to get into it, to call for a million copies of this book, though its only claim is that it is needed."

The book contains 157 pages, besides illustrations. The 45 chapters cover every phase of poultry culture from eggs to hens, and from hens to market. Feeding, housing and parasites.

Pacific Rural Press, Publishers

525 Market Street San Francisco, California

quite a proportion of Ventura county walnuts last week.

A 20-year Chico almond orchard recently sold at $400 per acre or $11,000 for 26.34 acres to R. L. Douglas of Red Bluff.

The Sutter County Almond Growers' Ass'n is to elect officers April 22. They have no intention of withdrawing from the State Ass'n as has been reported.

Pres't G. M. Williams of the Goleta Walnut Growers' Ass'n reports a fine and even setting of walnuts in his district and around Carpinteria, but blight is already showing.

We have a report of the following olive plantings in Browns Valley, Yuba county: E. M. Eddy, 20 acres last spring and 20 this; S. V. Smith Jr. has 4,000 olives in nursery rows to plant next year as a part of 200 acres all told; J. S. Wardell, 100 acres, mostly Missions and Manzanillos; W. R. Hendricks, 100 trees; and Mr. and Mrs. Worthington Ames, about 15 acres of the same varieties.

MISCELLANEOUS.

The great rabbit drive at Arbuckle resulted in the killing of about 100 rabbits.

March exports from San Francisco were worth $2,704,032 more than for the same month a year ago which was $6,398,380.

Rice growers have begun irrigation of several thousand acres around Gridley through the main canal of the Sutter-Butte Canal Co.

Two lines of the Tulare Lake levees have broken and destroyed 90,000 acres of beautiful grain nearly ready to harvest.

Eleven freight ships of 5,000 to 10,000 tons are soon to be run from San Francisco to Asiatic ports with white crews under the American flag.

Grain alcohol bought for mechanical purposes in Washington caused so many drunks that one judge ordered gum camphor to be put into each flask when sold.

The Butte County Spring Exposition is to be held at Chico May 22-28. It will be a show of agricultural, livestock, and poultry resources of the district.

The value of farm lands without improvements is estimated by the U. S. Dept. Agr. at $45.55 per acre; $40.85 a year ago; $40.31 two years ago and $38.10 three years ago.

Santa Barbara County Bee Inspector W. J. Oates, reports that a tremendous honey crop is in the making, as showers have opened up the mountain flowers in great shape.

Boundaries of the district which will have to pay $1,095,000 toward the construction of the Sacramento by-pass for flood waters were designated recently by the State Reclamation Board.

Free recent bulletins of the U. S. Dept. Agr. treat of sweet potato diseases, food for young children, road building, cherry by-products, brown rot of prunes, the raisin industry, and milk and cream contests.

American exports for February were valued at nearly $410,000,000, the highest point ever reached. Imports were nearly $216,000,000 less. The East ought to have some money to buy California fruits at a good price.

The increase in demand for potash has resulted in inquiries of government officials concerning the amount of this chemical contained in wood ashes which may be available at saw mills operating on the National forests.

Farewell, Imperial county grasshoppers! The Farm Bureau is after you with 1350 pounds of white arsenic to be mixed with 67,500 pounds bran, 5400 quarts of molasses, and 1350 dozen lemons to entice you. Five acres of this mixture is being sold for 68 cents.

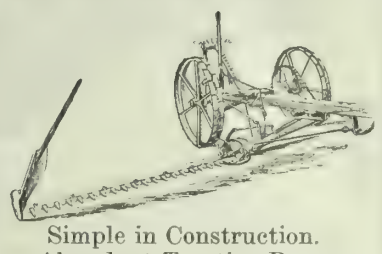
The waste product of sawmills in the United States, including that fed to the furnaces as fuel is estimated to be 36,000,000 cords per year, and the equivalent of 2,880,000,000 cubic feet of solid wood substance. About half of it has no use whatever but is usually burned to get rid of it.

The 1915 Yearbook of the U. S. Dept. Agr. is being distributed. It contains articles on co-operative purchasing of farm supplies, a co-operative laundry, water systems for farm houses and buildings, seed testing, boys' agricultural club work, and a general summary of American agriculture with maps.

The high cost of retailing food products is the biggest leak between producer and consumer. The Watsonville retailers are cutting it by dividing the city into four delivery districts. Members of the delivery association will send goods for their customers to a central station whence each driver will deliver on his own certain route four times a day, thus avoiding duplication of routes.

Fresno county held an Agricultural Assembly at Kearny Park April 19, 10 a. m., writes S. P. Friselle, manager of the Kearney Vineyard. Leaders in agriculture and University men spoke. The Farm Adviser plan was presented. Livestock judging, etc., was part of the program.

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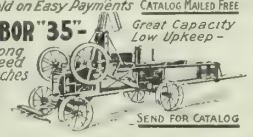
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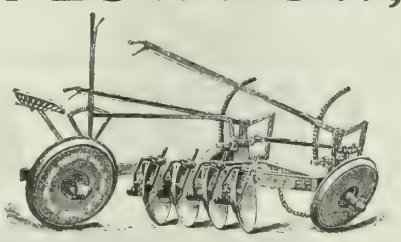
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for small tractors, has no levers to interfere with limbs—no slow, cumbersome Worm Gear, as farmers will not tolerate them.
INVESTIGATE IT.
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625 Market St., San Francisco.

P. & O. No. 40 Combined Corn and Bean Planter



Furnished with open center or solid concave tires.

The Combined Corn and Bean Planter here illustrated is a machine built by one of the largest manufacturers of planters in the world, particularly to meet the requirements of the Pacific coast trade.

It is not a made-over machine, but is built from the ground up for Coast needs. This fact, together with the reputation of the P. & O. Company for building tools right in every detail, insures absolute satisfaction to every user of this planter.

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FEATURES:

Equipped with a full set of plates for planting any of the different kinds of corn or beans commonly planted in California, including Egyptian and Kaffir corn.
Adjustable to any width rows from 28 to 44 inch. The check-rower machine is adjustable for checking rows 3 ft. 4 in., 3 ft. 6 in., and 3 ft. 8 in.
Accurate planting insured by the sight feed. Sight feed has a large opening, and the seed is visible at all times to the operator as it drops from the hopper to the upper valve.
Quick, detachable runners held on the shank by one bolt. Easily removed for sharpening.

Write for descriptive circular and address of nearest agent.

Baker & Hamilton
San Francisco, - Cal.

Mechanical Power on the Farm.

PRUNES TRAVEL THROUGH DIP.

[Written for Pacific Rural Press.]

A new prune dipper and grader is being put on the market by F. J. Yandel of Santa Rosa, its inventor and manufacturer. As will be seen by the accompanying cut, this machine has a rotary attachment that keeps the prunes moving through the liquid and lifts them onto the grading screens. It is very carefully adjusted and will not bruise the fruit.



Continuous Movements of Prunes Through Dip and Grader Gives Uniform Results.

An oil burner furnishes uniform heat and a 1 h.p. gas engine or electric motor furnishes more than ample motive power. It is called the "Perfection Dipper and Grader." It is made in two sizes, one with a capacity of 3 or 4 tons per hour, the other with a capacity of 7 or 8 tons per hour.

Ellert Weerts used one on his prune ranch on Sebastopol Avenue last season, and says it has the following advantages:

1. Efficiency and economy. The day's picking was easily put through in three hours by three men, at a cost of 9 cents per ton for fuel. The rotary attachment keeps the liquid constantly stirred, so no sediment forms in bottom of vat, retarding the heat.

2. Uniform dipping. As the heat of the liquid and the speed of the machine are both automatically controlled, there is no guesswork.

3. Superior grading in three grades. The vibration of the screens can be adjusted for soft or hard prunes.

BALES HAY WHILE CUTTING.

[Written for Pacific Rural Press.]

When hay is to be stored or shipped, it is usually most economical to bale it, because space in storage or on trains costs money. Woodward and Sons of Perris Valley have 80 acres of alfalfa which yields about 11 tons per acre. They ship practically all of it. But if prices are low, they store hundreds of tons, as much as two years at a time. They have an 8 h.p. gas engine baler which puts up about 12 tons per 9 hour day. With it, their cost of cutting, raking, hauling, and baling last year just about equaled the cost of hiring the baling the year before, not figuring interest and depreciation.

The machine kept eight wagons busy last year, though the field is across the road from the baler, which worked only afternoons while one man would be cutting. The partially cured hay would be loaded onto the eight wagons. Beginning at the upper end of each check, one team could haul two loads to the lower end. Then one load at a time would be hauled to the baler, left until afternoon, and baled from the wagons.

Owing to what Mr. Woodward thinks will be superior convenience of an electric motor, he expects to either get a new electric baler, or fit a motor onto the old one. That can be done by removing the engine and piston, and fitting the motor to the fly-wheels which are already cog-geared.

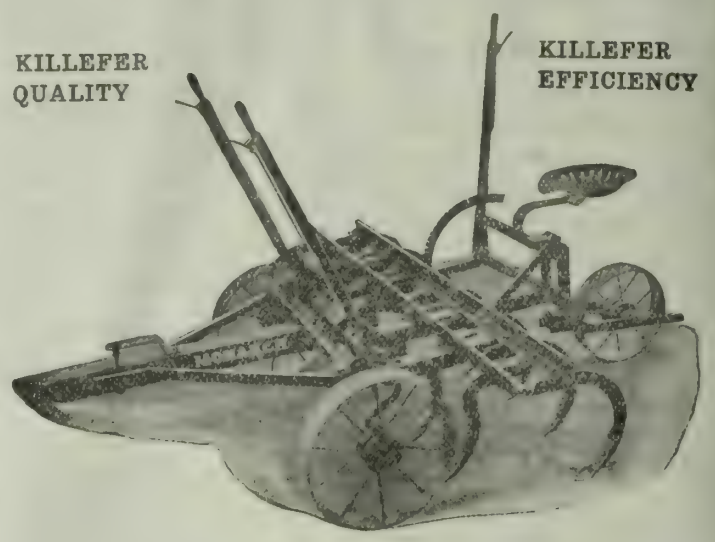
SCREWS PUMP PACKING TOO TIGHT.

To the Editor: The packing around the shaft of my Layne and Bowler pump wears out each irrigation run and it costs $1.50 to renew it. This packing ought to last all season. There is much fine sand in

Monarch Cultivator (K)

KILLEFER QUALITY

KILLEFER EFFICIENCY



The Killefer Monarch Cultivator has more varied uses on the ranch than any other tool we manufacture. As a Chisel for bean and beet ground before planting, it has no equal. As an Orchard Cultivator, where deep cultivation is desired, it gives perfect satisfaction.

As an Alfalfa Cultivator, when fitted with our Special Alfalfa Tooth, it does excellent work, loosening the ground to a depth of from six to eight inches without injuring the stand. This deep cultivation enables the water to percolate to a greater depth than any cultivator on the market. Made in 5, 6 and 8-foot sizes.

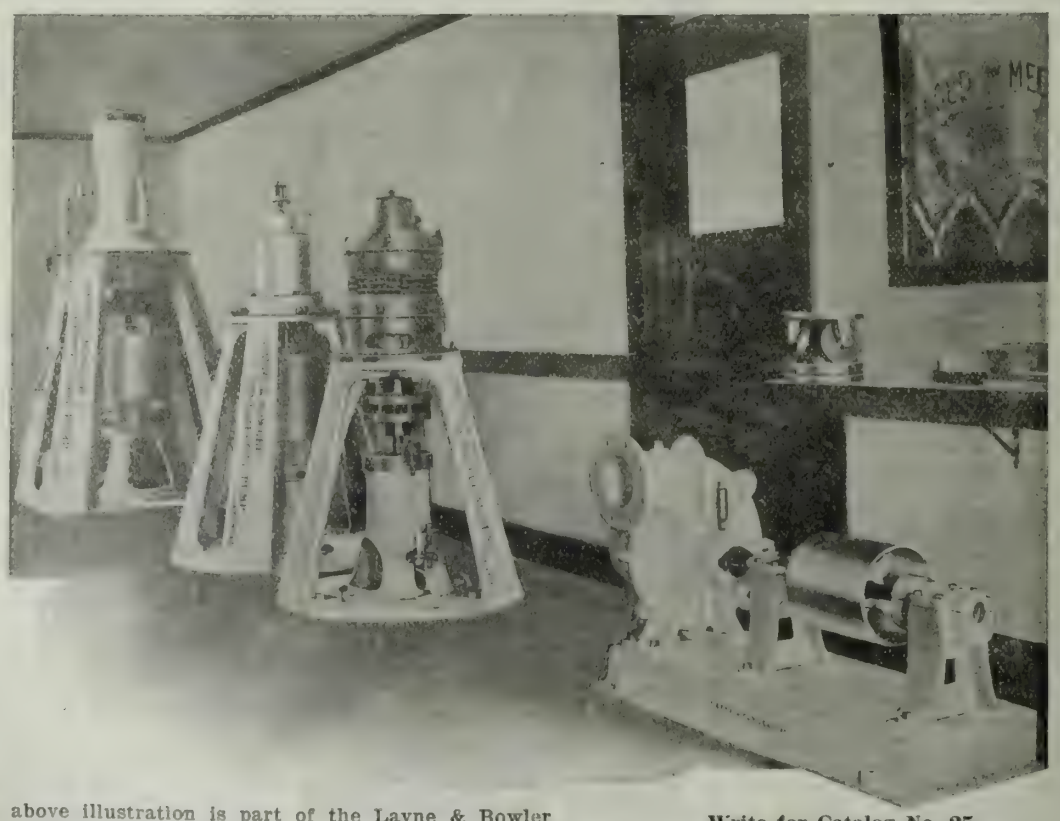
Corvallis, Ore., April 3, 1916.

THE KILLEFER MFG. CO.,
2209 Santa Fe Ave.,
Los Angeles, Calif.

Gentlemen:—
The Monarch Cultivator did us a good job in our Alalfa field, taking out a tough grass sod which nearly had the Alfalfa whipped out. Am pleased with its performance. We are handling it with a 30 H. P. Motor.

Yours,
J. B. CORRIE.

LAYNE & BOWLER PUMPS



The above illustration is part of the Layne & Bowler Display Room, showing several of the various types of pumps we manufacture. Pumps for absolutely every requirement. "Let the World's largest water developers solve your pumping problems."

Write for Catalog No. 25.

Layne & Bowler Corporation

900 SANTA FE AVE., LOS ANGELES.

the water. Also perhaps we screw down too much pressure on the packing so it wears out sooner. What is wrong?—H. L. C. W., Corona.

This pump consists of several centrifugals arranged in a casing so that they may be let down into a well casing about a foot in diameter so that a section of pipe below them is always well under water. The centrifugals are run by a vertical shaft which is held in place by brass boxings at regular intervals, and is entirely incased in a pipe of larger diameter which screws onto the centrifugal casing and is water-tight to the surface. It is filled with oil to keep the brass bearings lubricated. This pipe enlarges just under the belt-wheel above the ground, large enough to permit a packing ⅜ inch square to be inserted around the shaft. The packing is held from going too far down, by a bearing around the shaft.

It is made of rubber surrounded by asbestos preparation, all soaked in graphite, "the most perfect lubricant known." It is made in the shape of a spiral spring.

When a shaft is to be repacked, plates are taken from the side of the frame which protects the enlarged end of the pipe. An oval "gland" is unscrewed. This is a flat piece of iron which fits around the shaft and has a circular projection to fit into the enlarged pipe. It is tightened into place by screws through its ends.

Packing is cut from the spiral in circles, each of which is inserted separately into the enlarged end of the pipe around the shaft. When the space is filled, the gland is screwed down to hold the packing in place.

It should be adjusted slightly every day, according to shop superintendent John Wintrooth, just enough to prevent the oil in the pipe from squeezing out. If it is screwed down too hard, it cannot absorb enough oil to prevent its becoming dry and hard. This will make the shaft hot and will wear it more than the bearings do.

It will be seen that as the pipe is water-tight sand in the water could not affect it. Mr. Wintrooth says that trouble must be due either to using poor grade of packing, or an unsuitable high grade packing, or to screwing the packing down too tightly.

AVOIDING CHAMOIS SKIN DANGER.

To the Editor: How can we avoid the danger of straining gasoline through chamois skin and still have its advantages?—Sub.

[Answered by Prof. J. B. Davidson, University Farm, Davis.]

[The danger from static electricity in connection with the use of a chamois skin strainer for gasoline might be obviated in several ways: If the strainer should be grounded or connected by a metallic conductor to the ground or to some metallic object embedded in the ground, there would be little or no danger. Again, the danger should be guarded against by the use of a strainer in the feed line to the carbureter in which the water, if any should be in the gasoline, is allowed to accumulate in a pocket from where it may be drained off occasionally. The inspection of a can of gasoline will often reveal the presence of water. The water usually has a rusty appearance and of course settles to the bottom. This is not practical in large tanks.]

About 10,000 acres of sugar beets are planted in San Fernando Valley this season.

Belting That Must Make Good



When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a **free sample** of **Test Special** together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

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Distance Between Centers of Pulleys { ..... / ..... }

Revolutions per Min. of Driving Pulley { ..... / ..... }

Kind of Machinery Driven { ..... / ..... }

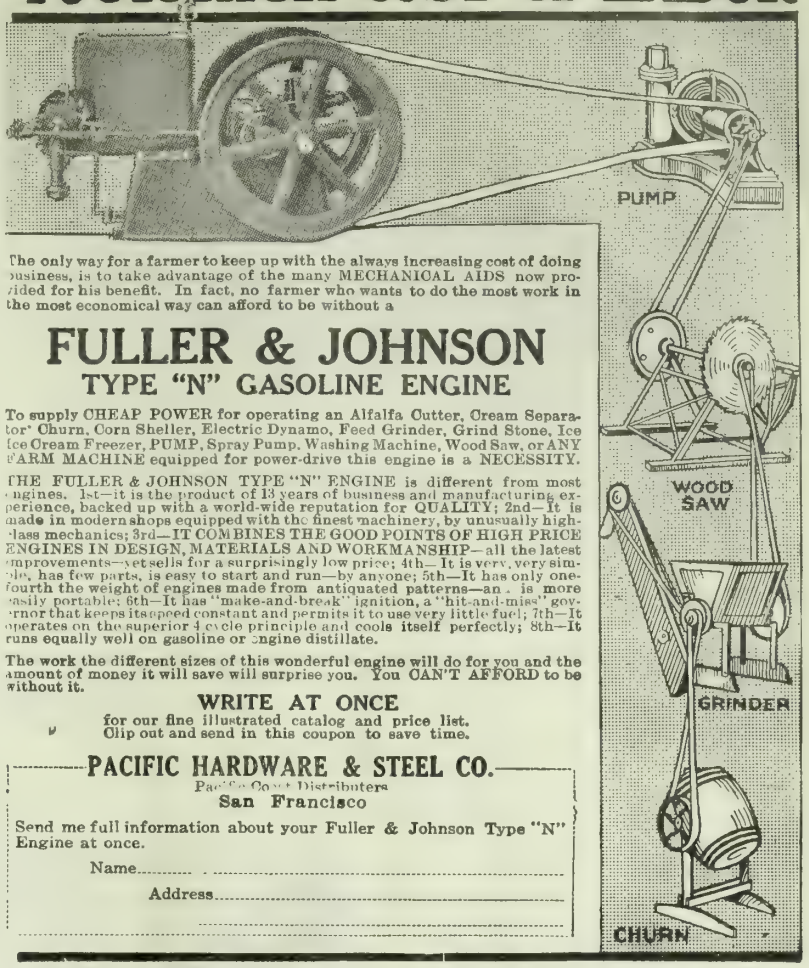
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The work the different sizes of this wonderful engine will do for you and the amount of money it will save will surprise you. You CAN'T AFFORD to be without it.

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Whatever your water problems may be our Expert Pumping Engineers will help you out free of charge—write

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Send for Free Booklet—which tells just how Madewell Pipe is constructed

Robinson Hardware Co. Box B Gilroy, Cal.

Southern California Guernsey Pioneering.

[Written for Pacific Rural Press.]

Against the hills, beyond a mile of gently rising green, nestle the white silos and the village of white buildings on the Elliott-Brant Rancho, a landmark for the fertile empire of the San Fernando valley, and an inspiration to all the countryside to share the delights of growing purebred Tamworths, Berkshires, and Guernseys.



Butternut Queen (30478), possessing, perhaps, the best dairy type of this herd. Her 2-year-old A. R. record was 532 pounds. On re-test she is greatly exceeding this.

The inspiration is increased when one visits the well-nigh faultless dairy yards and barns and accepts a drink of the cold, rich, distinctively flavored Guernsey milk, guaranteed over 5 per cent fat.

Of the Tamworths and Berkshires, more may be said later; this writing will deal with the Guernseys, all of which are tuberculin tested and free of the disease.

With the characteristic pride of the purebred breeder, D. O. Brant was ready with the names and records of most of the cows—really the most important part of dairying; for the records indicate great yields of high-priced milk, and ability to transmit great production to offspring of great value.

Twenty-one of the cows are already in the Advanced Register—fifteen are being milked three times a day on official test — a number have recently made high records. We give a few.

Record-Making Stock. Princess of Meadowbrook has the highest Guernsey record on the Pacific Coast, having finished the first of March an official record of 725 pounds fat from 14,600 pounds milk. Her dam Teddy's Pet, dropped her fourteenth heifer calf last March. Her sister, Pet's Pansy of Pine Grove, will finish a year's record as a three-year-old April 30. In her first 276 days she gave 426.84 pounds fat in 9784.9 pounds milk. Ida Lyons was 1st prize and grand champion three-year-old at Riverside last year and was also a winner at the State Fair. Nellie's Carnation was first prize two-year-old, Junior, and Grand Champion at the last State Fair. Her record as a two-year-old, finished last Oct. 15, is 425 pounds fat from over 8500 pounds milk. Butternut Queen made 532 pounds fat from 10,000 pounds milk as a two-year-old and is now seven months along in a test as a six-year-old with every promise of making 700 pounds. Imp. Mahy's Nelly II du Douit started a test last Oct. 24 as a five-year-old and made 312.68 pounds fat from 6799.7 pounds milk in 60 days. There are several 500 lb. 2-year-old records in the making.

Two bulls are used. They are exercised on a treadmill. The old one was sired by Imp. Cora's Governor of the Chilmark, A. R., which has 30 Advanced Register daughters and is a son of Governor of the Chene, A. R. The old bull is out of Nevna, an A. R. cow, which was out of Robinia Standard, A. R., Grand Champion at the first National Dairy Show and 6 State Fairs and was never defeated.

The three-year bull, Newgrove King of Briarbank, is a son of King Bell, 1st prize, Senior and Grand Champion at the Michigan State Fair and Grand Champion at the National Dairy Show in 1911. King Bell has some two-year daughters testing 6 per cent and having 530-pound records. Three of his daughters were recently sold at $1500 each at auction. He is a son of Imp. May Rose King, A. R., 10 of whose daughters averaged 705.29 pounds fat, and all of whose daughters averaged over 584 pounds, and 48 of whose granddaughters averaged over 509 pounds. These granddaughters were sired by 13 A. R. sons of Imp. May Rose King. The dam of New Grove King of Briarbank is Imp. New Grove Queen 2nd, which has a record of 639.33 pounds fat from 12,710.4 pounds milk on two milkings per day. She was Senior and Grand Champion of Michigan and took 2nd prize at the National Dairy Show, losing to Glencoe's Bopeep. She was sired by Mashers Sequel, who has more A. R. daughters than any other Guernsey sire. Newgrove King of Briarbank has a beautiful backline carried square out, has great heart girth, and thin withers. He has won first prize wherever shown. He will be shown again this summer.



Showing the hay-storage barn on left and silos on right, and "Ida Lyons," Grand Champion Cow at Riverside Show, 1914, in foreground.

Convenient Sanitary Equipment.—The equipment on the Elliott-Brant Rancho is worthy of the blood on it. Dr. G. H. Hart, Los Angeles city milk inspector, gave them a credit of 99½ points, docking ½ point because silage is fed in the milking barn. One bacterial test showed 10 per c.c., several showed 200 to 300; and the milk is always guaranteed below the Certified limit of 10,000.

The milking barn is airy, well lighted, cement floored, has a tight ceiling and iron stanchions. It has plenty of electric lights, and pressure water to clean out after each milking. Manure is hauled to the fields daily, being dumped onto a spreader from barn manure carrier. There are no flies around.

Two concrete silos, tar-lined, supply succulence to keep up the flow of milk, for the customers must be supplied, winter and summer, with all the milk and cream they want.

A concrete pavement leads from the milking barn, between the silos, to the two yards where the cows manufacture butterfat and milk. One of the yards is concrete paved, with straw under the open shed around it. One heifer has not been off the concrete for two years and has never had sore feet or an inflamed udder, though the hoofs keep well worn down.

Opening off the pavement is a hay feeding barn with iron stanchions of Mr. Brant's own design. It has concrete floors and mangers. The mangers are covered by a sloping slatted cover which is hinged so it may be raised and hooked out of the way. Alfalfa is dropped down between the two lines of stanchions from the 300-ton hay mow.

Balanced Rations.—"We grow and crush, or grind, the barley we feed; and balance it with cottonseed meal besides alfalfa hay and beet pulp. Barley usually is the only grain fed the 30 two-timers," which are milked only twice per day because they are not on test. We fed whole grain for a while, but saw it coming through. Sure, it pays to grind grain.

The cows on test get one to one and a half pounds cottonseed meal per day, though this is varied—some get more, some none at all. They also get 20 to 30 pounds of silage per day besides alfalfa, ground grain and beet pulp.

It became necessary one time to get more milk to supply the demand. The quantity of feed was nearly doubled and the milk came; but the extra expense was not justified, except because it held the customers.

Good Help Obtained.—Equipment makes clean milk possible, but does not make milk clean. A good intelligent class of dairy helpers is necessary. These are attracted to the Elliott-Brant ranch by considerate treatment, a comfortable bunkhouse surrounded by alfalfa and containing running water, baths, and other conveniences. It is not hard to get their sympathetic cooperation in clean milk production.

Handling the Milk.—White clothes are donned in a separate room by the milkers, and only dry milking into sterilized hooded pails is practiced. The hind quarters and udders of the cows are clipped close. Before milking, they are hosed off, brushed down with a stiff brush, then wiped off with a cloth soaked in disinfectant. Daily sediment tests of the milk seldom show more than a tiny speck or two of dirt, and many of them show no discoloration except from cream.

Milk is carried from the milking barn to the bottling house at a distance, carried up a covered outside stairway, emptied into a vat through seven thicknesses of strainer cloth. Thence it runs into the bottling house via a pipe through the wall to the clarifier; thence to a hooded cooler where it is aerated as it flows over the brinefilled cooler. The brine is kept cool by circulation through the ice-making tanks in which the ice is left suspended. The milk is thus immediately cooled to 35 degrees. Aeration helps prevent the milk from absorbing odors when in the customers' ice box. A pipe conveys the milk to a mechanical bottler. This automatically fills the bottles; a pasteboard cap with a lifting tab is put on, and an ornamental soft lead cover is spun over



Lady Martinson (31310), an Advanced Register Cow of the larger Guernsey type that is found in this herd.

(Continued on page 531.)

The Hay Situation to Date.

[Written for Pacific Rural Press.]

It may be safely said that the reatest factor in supply is the con- ition of the grain market and the rain acreage, for while the yield of rain hay is only about 55 per cent f all of the hay grown, all but bout 10 per cent of it is baled for arket purposes, while the tonnage f alfalfa baled for market is only 0 to 30 per cent.

Dry winters naturally have a dis- trous effect on hay supply also, ecause of the shortening of volun- er as well as tame forage, thus ssening the amount of wild hay arvested and materially increasing he demand for tame hay to feed rm animals, particularly so when vestock is in good supply over the tate.

Alfalfa, while of immense impor- nce to the farmer, is not nearly important from a hay market tuation, because all of our larger y markets demand grain hay as he basis for all valuations and con- der alfalfa of secondary impor- nce.

During 1915 an entirely new fac- r entered that materially changed he situation. This was the unheard export business to Australia, mething that had never been heard before and very likely will not e heard of again, unless by some hance that country should experi- ce another drouth of like propor- ons to that of last year. Hay deal- s who have been in the business er 50 years maintain that no per- anency can be expected from this urce in the building of an export siness as it may never be open to em again.

From a market standpoint there no reason at this time to expect heavy a demand as was experi- ced last year, although there is no ason to suppose that it will be naller than in normal years, ex- pt through the gradual decline in ty demand on account of the motor bstituting the horse, which is ad- itted to be general in all of the eavy hay-consuming centers of the tate. On the other hand there is ractically no hold over of the 1915 op, thus leaving the 1916 demand ntirely in the hands of the 1916 pply.

From a State-wide standpoint it ow appears from the best sources information that the acreage anted to grain is about the same is year as last, due to the large creage which was summer fallowed st year.

As this is written the situation in he Sacramento Valley is not favor- ble for either grain or hay, rain eing deemed necessary in the imme- iate future to insure even a normal op.

San Joaquin county, which is a rge grain hay country, promises to roduce somewhat more hay this eason than last because of a large creage which will grow volunteer rops. It is thought that while this ill increase the tonnage it will ssen the general average quality.

Contra Costa and Alameda, both eavy hay-producing counties, will ake a normal crop if favored with howers on or before the early part f May.

Reports from Sonoma county in- dicate a light crop, one man who is in touch with the situation there es- timating it to be not over 50 per cent of normal.

H. J. Baade, Farm Adviser of Napa county, states that the acreage of grain planted in that county is not so large as last year and that the percentage cut for hay will be smaller. He believes that the com- bined crops of alfalfa and grain hay in his county will be smaller this year than last.

A representative of this paper es- timates that the percentage of grain cut for hay in Stanislaus county will be larger this year than last. Al- falfa also promises to be heavier be- cause of the good weather for cur- ing, although the acreage is smaller than in previous years and the num- ber of livestock has been reduced.

In Merced county conditions are favorable for larger crops of both alfalfa and grain hay, according to Dr. L. C. Kennon of Merced who states that the grain acreage is larger there than last year, that more will be cut for hay, that indi- cations at this writing are favorable for large crops, and that there is a larger acreage of alfalfa bearing this year with present indications of a large crop.

Prospects in Fresno county are for about the same sized crop of grain and alfalfa hay as last year accord- ing to Fred P. Roullard, County Horticultural Commissioner of that county. The acreage of both alfalfa and grain is about the same as last year and weather conditions are fa- vorable.

Carl J. Williams, Farm Adviser of Kern county, says that while the acreage of grain in Kern county is larger than last year the percentage cut for hay will be smaller and that the present indications are for a medium yield. On the other hand the acreage of alfalfa is larger and conditions are favorable for a heavy yield. He expects the total produc- tion of grain and alfalfa hay to be larger than last year.

In the northern portion of Los An- geles county the grain acreage is larger than last year in the opinion of D. H. Graham of Lancaster, and while it is still largely a matter of weather it seems probable that a smaller percentage will be cut for hay this year. Many new plantings of alfalfa will begin bearing this year and a large acreage which was neglected last year will be better cared for. All things considered he thinks the amount of hay and al- falfa will be larger this year. He also states that there is considerable grain hay being held over in his sec- tion.

Advices from Imperial county state that because of the prevailing high price of hay and barley sacks, a larger amount of both alfalfa and barley hay is being cut this year than is usual.

The total yield of alfalfa and grain hay will be larger in Orange county than last year. Such is the opinion of Roy K. Bishop of Santa Ana, who says that while there is a slight increase in the grain acreage there the percentage for hay will be

(Continued on page 535.)

Making a Silo Pay

is an easy matter if you have the right kind.

THE UNIVERSITY FARM, Davis, Cal.,

last year bought an

Ideal Green Feed Silo

and tried it out in actual use beside others, including a concrete, a resaw and another stave silo.



THEY RECENTLY PURCHASED ANOTHER **IDEAL GREEN FEED SILO,** which is the best evidence needed of their judgment of its quality and efficiency.

THESE TWO IDEAL GREEN FEED SILOS are used to help make a profit in their farm operations and were purchased out of their farm income.

THE MEN IN CHARGE are businessmen and know a good thing when they see it.

WHY NOT PROFIT by their experience and order your Ideal Green Feed Silo now.

Some Satisfied Users of Ideal Green Feed Silos.

UNIVERSITY FARM ..... Davis	A. W. FOSTER ..... Hopland
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AMBROSIA CREAM CO..... Napa	SAN RAMON RANCH DAIRY ..... Walnut Creek
NEWMAN BROS..... Elk Grove	GUSTAVE BRENNER, Monadnock Bldg., S. F., for his ranch at Hardwick.
HENDERSON BROS..... Sacramento	F. W. KIESEL, care of California National Bank ..... Sacramento
B. F. ANDERSON ..... Modesto	J. D. HUSTON..... Imperial
SINSHEIMER BROS., ... San Luis Obispo	R. D. McPHERRIN ..... El Centro
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Many of these parties have purchased their second, third and fourth silos.

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Alpha Engines **Feed Cutters**

"Everything for the Dairy"

De Laval Dairy Supply Co.

SAN FRANCISCO. SEATTLE.

Rancho Dos Rios

SALE OF

Jerseys at Auction

Modesto, Cal., Sat. May 6, '16

Big Foundation Sale

35 Registered cows.
85 Un-Registered cows.
5 Registered bulls.
Every Animal Guaranteed Free of Abortion and Tuberculin Tested.

IF YOU WANT FOUNDATION REG. JERSEYS, ATTEND THIS SALE. Every cow a producer and of the best breeding.

IF YOU WANT AN UNREGISTERED HERD OF HIGH PRODUCERS, ATTEND THIS SALE. The breeding of the unregistered cows in this sale is practically the same as the purebreds. They have been in our milking herd and are producers.

IF YOU WANT A HERD SIRE ATTEND THIS SALE. We are only offering a few high-class sires, among them the great proven sire, **Dos Rios Pogis,** whose daughters can be seen sale day.

IF YOU WANT HEALTHY CATTLE ATTEND THIS SALE. Every animal sold is tuberculin tested and guaranteed free of abortion. Most of them are fresh or in calf to our best bulls.

In order that we may better provide for your comfort and for auto room to and from the sale, we request that you advise us in advance what time you will arrive at Modesto.

For full particulars and pedigrees write for

BIG CATALOG NOW READY.

Rancho Dos Rios

MODESTO, CAL.

AUCTIONEER, Col. Ben. A. Rhoades, Los Angeles.
Assisted by M. P. Keppford, Modesto.

CALIFORNIA HOG BOOK

Every hog-breeder in the State should have a copy of this book handy to refer to in cases of emergency. Every day the practical side of the book will help you. The author, W. S. Guilford, is a swine breeder, and he tells just what you want to know when a difficulty presents itself. The book contains 256 pages of text, besides many full-plate illustrations. Tells how the successful breeders feed and handle their hogs.

Price, $2.00 Postpaid.

PACIFIC RURAL PRESS, Publishers

Big New Purebred Berkshire Ranch.

[Written for Pacific Rural Press.]

"They are spending lots of money on the Sierra Madre ranch," was the remark of various farmers in the Lancaster district when a Pacific Rural Press representative visited Antelope Valley, Los Angeles county. We found the money being spent very economically, reclaiming 240 acres from the sagebrush, on which to grow purebred Berkshires and all the feed for them.

The job was undertaken last fall, when Russ Avery of Los Angeles, J. K. Miller, and J. E. McIntosh of Coachella valley combined their capital, brains, and brawn for the task. They already had about 300 hogs of unknown degree, but they wanted something worth while.

Getting High-Class Stock.—Up at the World's Fair, they bought the boar Ames Rival 106th and the sows Winona Lee Laurel 4th and Columbia's Model.

The boar had been brought from Iowa by Thatcher, Ennis and Williamson. He was farrowed Sept. 15, 1914; sired by Berryton Brummel C and out of Rival Lady 36th. He now weighs 400 pounds at 18 months in working condition.

Columbia's Model, born Sept. 25, 1914, was bought from G. A. Murphy of Perkins and was a second-prize winner at the World's Fair. She was sired by Baron Duke 194th which was bred by N. H. Gentry. She is out of Columbia 4th. Her grandsires are Baron Premier 84th and Starlight Royal. She has 7 fine pigs farrowed Jan. 5, sired by Ruby's King 4th, which was bred by F. W. White.

Winona Lee Laurel 4th was bred by F. R. Steel, sired by Laurel Champion and out of Lady Princess Lee 3rd.

Early in March, 1915, a purebred boar and 29 purebred sows were received from Chas. M. Talmadge. Most of the sows are bred. They are 10 to 14 months old.

The hogs are sheltered from cold north winds by tight houses with open south sides protected by sloping porches.

Hogs Balance Own Ration.—All of them, including 95 hogs now being fattened, but excluding brood sows, have free access to self-feeders containing ground grain (barley or kaffir) and tankage separately. Brood sows get but little grain.

Alfalfa Pasture.—Two hundred and forty acres are being fenced tight for the hogs. About 15 acres of alfalfa is now (Mar. 23) half knee high and being cross-fenced into four or five fields to turn the purebred hogs into. Mr. McIntosh wants to know if there is any danger in leaving them on alfalfa since they are not accustomed to it. There are other acres of alfalfa not so far along, and a large field recently leveled and sown, so that with this spring's planting there are 110 acres of this forage, all of which is to be cross-fenced and pastured. The self-feeders will be put into the pastures to supply grain and tankage ad libitum.

Twenty acres this spring go into feterita, 14 into wheat and barley, 8 into sudan grass. Everything to be raised on the place is to be fed there.

If a creamery is put in at Lancaster as is being talked up, purebred Holsteins will be added to the stock. Everything is to be purebred in the near future.

Irrigation.—About two miles of underground irrigation pipe have already been laid in four lines from the engine pump and reservoir. The pipe are glazed tile and concrete. The valves, etc., are Kellar-Thomason equipment. More are to be added.

ARE ACORN HOGS GOOD?

To the Editor: In a recent issue, under heading "Tuberculosis Hogs a Heavy Loss," you refer to the acorn hog as being on the undesirable list. If it is possible to use acorns at all in feeding to market hogs, kindly advise what time in the hog's life they may be used without putting the hog on the undesirable list. —G. W. P., Oakhurst.

[As a general thing a hog buyer is so suspicious of a hog which he knows has come from an acorn district that he doesn't want to buy him at all. There are, however, a great many hogs brought out of the acorn districts as feeders every year and after two or three months of good grain feeding they pass muster with the butcher. The principle is that they should be grain fed from the beginning along with the acorns to support the acorn fat. An acorn hog is otherwise so soft that it does not make even a medium grade of edible pork. Acorns are a good growing feed for hogs, when grain is fed with them; but the practice of letting the hogs run on acorns alone is surely not a profitable one. —Editors.]

LAMB FEEDING.

We all know, from our experiences in handling animals, how susceptible most of the domestic animals are to digestive disturbances from sudden changes of feed, water, and conditions of environment.

While on the range lambs eat the native grasses and have five to ten miles' exercise every day. When they are brought to the feed lots, conditions are all changed; they pile up in the restricted quarters and become overheated. The feed is changed abruptly. The feeder should always bear in mind that when he takes lambs from the natural conditions of the range and places them under highly artificial conditions, he is jeopardizing the health of his sheep and the welfare of his enterprise. The first month should be given to seasoning the lambs to their new conditions, and gains should not be expected, says a writer from the Colorado Agricultural College.

The crux of the whole matter is that heavy losses in feed lots are due, not to communicable diseases, but to bad judgment in feeding and handling. For this reason the losses are usually heaviest during the first month, and a change of feed, unwholesome feed, or sudden increase in the amount of feed, will mean more pelts on the fence.

To feed lambs without heavy loss and secure satisfactory gains necessitates eternal vigilance, experience and common sense, and there is no other business that requires more.



DE LAVAL

Stands On Its Record

FOR nearly forty years the De Laval Cream Separator has led in the cream separator field. It was the pioneer in 1878. It had a long start and has always held its lead. It has always led in every step of cream separator development and popularity, and more De Lavals are in use today than all other makes combined.

It has always been recognized as the closest skimming cream separator. That's the main reason why 98% of the world's creameries use it to the exclusion of all others.

Because of its cleaner skimming, ease of operation and wonderful durability, every De Laval user is a "booster" and the better its work is known in a neighborhood the more popular it becomes.

The better quality of cream it produces is attested by the fact that De Laval produced cream and butter have scored highest at every annual contest of the National Buttermakers' Association for twenty-four years and in every great representative contest for over thirty years. Last but not least, the De Laval was awarded the Grand Prize at the San Francisco Exposition in 1915 as at every other great exposition since its invention.

The creamerymen's choice can't be far wrong. The world's greatest dairymen and mechanical experts who act as judges at the great expositions can be depended upon to recognize real merit, and the fact that the De Laval is the choice of the majority of all cream separator buyers must mean a good deal to you. In your purchase of a cream separator can you afford to ignore these considerations?

GRAND PRIZE
Highest Possible Award
PANAMA-PACIFIC EXPOSITION

Let the De Laval start saving cream for you right now. See the nearest De Laval agent at once, or if you do not know him write us direct for any desired information.

DE LAVAL DAIRY SUPPLY COMPANY
SAN FRANCISCO SEATTLE
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

HILLCREST STOCK FARM

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SHORTHORN CATTLE
Shropshire and Merino Sheep

FOR SALE SINGLE OR CARLOAD LOTS



KING LANCASTER,
Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.
THEY HAVE GRAND CHAMPIONS BEHIND THEM.



Grand Champion Sow, P. P. I. E.

Medium Type
POLAND-CHINAS

Choice breeding stock, both sexes, from Panama-Pacific International Exposition prize-winning strain. 12 firsts. Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows. $2145 cash awards. Write to

M. BASSETT,
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No Pit

is required with the

Krogh Deep Well Turbine Pumps



For bored or drilled wells from 10 inch inside diameter up; and for capacities of 250 to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.

Krogh Manufacturing Company

San Francisco -- Los Angeles

Son of Segis Pontiac De Kol Burke

READY FOR SERVICE.

We are offering at a very low figure a splendid son of this coming young sire. Born March 6, 1915.

His dam has the following records:

Butter 7 days 26.41. Milk 605.5
Butter 1 year 755.40. Milk 20260.2

She is a daughter of Ignaro De Kol, ten of whose daughters have records above 20,000 pounds milk, including Aralia De Kol 28,090. Three nearest dams of this bull average 26.68 lbs. butter, 668.8 lbs. milk. Dam and sire's dam average 920.27 and 24,543 lbs. milk in yearly test. A full sister to his dam has produced 885 lbs. butter in one year.

Price and pedigree on request.



1st Prize 2-year-old Cal. State Fair 1914.
Segis Pontiac de Kol Burke.

A. W. MORRIS & SONS,
Woodland, Calif.

Stanford Holsteins

HERD SIRES:

King of the Pontiacs 14th.
Dutchland Col. Sir Ormsby.

High class young bulls of serviceable age for sale, sired by one of our great bulls and out of A. R. O. cows. Prices right.

STANFORD VINA RANCH

VINA, CALIF.

Tamworths and Duroc-Jersey

We can fill orders for mature stock and weanlings pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.

Write or call and see us.

SWINELAND FARM,
W. O. PEARSON, Prop.
Woodland, California.

JERSEY SALE TO BE DIFFERENT.

[Written for Pacific Rural Press.]

That the Rancho Dos Rios sale of registered and un-registered Jerseys near Modesto, Stanislaus county, is to be different from most auction sales is evident by the measures those in charge are taking to safeguard the buying public.

Not only is the offering almost entirely made up from their own dairy herd, which has been selected and bred for high production, but we are also informed by Ralph Watson, manager of the herd, that every animal which is sent into the ring will carry a guarantee to the effect that they are in perfectly healthy condition and free from both tuberculosis and abortion.

So far as we know this is the first time that buyers have been offered unregistered females at their own price carrying such a guarantee, and as both abortion and tuberculosis are serious factors with the dairymen of the State it seems certain that those who are in search of high producing animals will take advantage of this opportunity.

Mr. Watson informs us that plans are being made to care for a large crowd at the home ranch where the sale will be held. It is expected that many buyers from a distance will take advantage of the State Highway and motor to Modesto, whence it is but a short drive to the ranch.

Those from distant points who expect to travel by rail should notify Mr. Watson at once in order that accommodations may be secured in advance and also to insure ample provision for automobiles to and from Modesto.

Those who have not as yet received a catalog are requested to send for one at once in order that they may thoroughly acquaint themselves with the breeding of the registered animals before the sale.

ANGORA BRUSH CLEANERS.

To the Editor: What is the value of Angora goats on brushy land? Our 40 acres in the mountains is mostly covered with a heavy growth of blackberry, poison oak, greasewood, and buck brush which is rapidly taking what little pasture is left, from our cattle. Some of our neighbors have raised the common goat, but are unable to market the meat.—R. W. M., Napa.

[A regular business in breeding Angora "brush cleaners" has been carried on for 25 years by Mrs. M. Armer of N. M. For 13 years she has been selling young Angora wethers to one Missouri man who pays $1.75 to $2.50 each, turns them onto brush land, until they clean it up. He then shears them and sells the animals for as much as they cost him. Mrs. Armer keeps many of her goats in the mountain woods "where sheep couldn't live." All goats in New Mexico are now crossed with Angoras, says the lady; and she adds that when milk goats are crossed with Angora it is goodbye milk in the offspring except enough to bring the kids up to weaning age at 6 months. There are Angora breeders in California with whose methods we are not familiar, but we refer you to our advertisers.—Editors.]

Sheep pelts and wool are helping to keep sheep prices at extra high level in Portland, with few arrivals. April 5, 1915; $6.75-7 Apr. 5, 1914; Prices for lambs were $10-10.50 $7 a year before that, and $8.50-9 Mar. 30; $9-9.25 Mar. 5; $8.50-9 Apr. 5, 1913.



Tom—You're not turning as fast as Dad does, Mary.
Mary—No Tom, but we'll get all the cream any way with this lovely new machine. Dad says

"It Skims Clean at Any Speed"

That's what this marvelous new invention actually does.

A fixed-feed separator may skim clean if in perfect order and turned at just the ***right speed.*** But every member of the family turns the crank at a ***different rate;*** no one can maintain an even speed ***all the time***—it isn't human nature. Every old type separator has an ***unchanging inflow*** of milk. That's why it loses cream when not turned at exactly the right speed.

THE NEW SHARPLES SUCTION-FEED

Separator gets all the cream because it automatically regulates the inflow exactly in proportion to the separating force—always just right for perfect skimming.

The Suction-feed Separator delivers smooth cream of ***even thickness*** that churns out more butter of choicest quality. If you sell cream you can ***guarantee uniform density.***

You can increase the capacity of the Suction-feed by simply turning faster, and get through quicker if in a hurry. The new Sharples is the only Separator that can be hastened. You can easily pour milk from a forty-quart can into the low supply can. It's the largest found on any separator—and it's only knee-high.

The women folks prefer the Sharples because the simple tubular bowl is so easily cleaned. Has only three pieces—no disks to wash or to get mixed up. The tubular shape gives double skimming force.

The new Sharples is ruggedly built for hard service. It is neat, compact, runs easily and oils itself.

This wonderful machine will earn you a new dairy profit—without added expense. Our new free book, ***"Velvet" for Dairymen,*** fully describes the Suction-feed. Your copy is ready. Send for it today. Address Dept. 31.

The Sharples Separator Co.

Also Sharples Milkers and Gasoline Engines

West Chester - - - Pennsylvania

Chicago San Francisco Portland Toronto

With the Live Stock Men.

DAIRYING AND DAIRYMEN.

The N. H. Locke Co. is erecting two stave silos at their dairy ranch near Lockeford.

Half a cargo of butter for Seattle and Montana was recently shipped from San Francisco.

The American Jersey Cattle Club offers $100 in premiums for the California State Fair, in seven premiums.

Murray and Jones have installed a six-unit milking machine on their ranch near Ceres. One man now milks and cares for 60 cows.

A Wisconsin dairyman who keeps 40 Jerseys on 40 acres and sells to a condensary made $72 per head in 1915 above cost of their keep.

The Sturgill Holstein herd at Salida is headed by a son of King Pontiac Netherland Segis, the herd sire for E. O. McClure of Modesto.

Madera creamery patrons recently imported six carloads of cows. The new irrigation district is encouraging greatly increased dairy production.

In a Michigan county cow-testing Ass'n eight Jersey herds produced butterfat at an average cost of 15.9 cents per pound. They averaged 314 pounds fat.

A registered Jersey herd in Imperial valley is 18 head belonging to R. S. Genet. He has recently sold two related bulls and is looking for one of St. Lambert stock.

A. C. Chappell of Turlock disliked to buy high-priced hay this spring, so he fed about 2 pounds middlings per cow per day. The cows kept up as long as his poor old hay lasted. When new hay come on and he quit the middlings, the cows dropped off considerably. A small feed of concentrates is needed.

Dairy farmers around Chicago have won their starvation fight for an increase from $1.33⅓ to $1.55 per hundred pounds. At one time there was danger of riots, as the supply became very short and city dealers thought they didn't have to yield. There was some rioting at country towns around Chicago.

The pricing of milk according to its food value is coming into fashion. The New York city department of health intends shortly to prevent sale of milk which contains less than 8.5 per cent of solids not fat. Dairymen of the future will have to use cows with records, thus considerably above the average. This can be obtained only by breeding stock which is known to produce such milk.

Guernsey records in the making on the Elliott-Brant Rancho in Los Angeles county showed the following results to April 15: Little Beauty II (2½ yr.-old), 209 days, 5,937.2 pounds milk 306.35 fat; Lois Valentine's Lad's Lassie (2-yr.), 289 days, 8,603.4 milk, 406.55 fat; Nerio's Elsie Granger (3½-yr.), 160 days, 5,210 milk, 276.17 fat; Polly Fisher (5-yr.), 146 days, 5,752.6 milk, 269.53 fat.

BEEF CATTLE.

The new disease called "septicemia" took 11 more calves in Kern county recently.

Two pairs of Hereford twins came in one night recently to J. A. Niles of Porterville.

Two registered Shorthorn bulls have recently been purchased from T. S. Glide of Davis by Mrs. C. Hamilton of Dixon. They will be used to grade up the beef herd now being established on the Hamilton ranch. In addition to the 400-acre home place, 2000 acres of range have lately been secured.

SWINE BREEDERS.

C. L. Buskirk, a Kansas Duroc breeder, is preparing to ship a herd to Imperial Valley and hold a sale.

Jacob Lorang of Imperial county grinds and wets the corn for his hogs. He believes that it takes ⅓ less to fatten them that way.

Fifty bred Poland China sows, including 44 spring gilts, sold for $7,125 or $142.50 each at the February sale of F. S. Sievers of Iowa.

Peters, Lamson and Walker of Devore are getting some fine pigs from Col. the King, the Duroc boar bought at P. P. I. E. from E. N. Manley of Neb.

The Kings County Swine Breeders' Ass'n last Saturday night re-elected M. Bassett president, Dr. J. A. Crawshaw vice-president, and F. D. Ross secretary-treasurer.

The hog show announced for El Centro May 26 and 27 is postponed to be combined with a general livestock show in the fall, under auspices of the Farm Bureau.

J. E. Thorp of Stockton has recently purchased five well bred Duroc Jersey sows with which he hopes to materially strengthen his herd. He states that he expects to show both red hogs and Jersey cattle in better condition this year than in the past.

Geo. A. Smith of Corcoran has recently purchased the Poland China boar Joker from Thos. Hunter of Ohio. This boar was first prize boar under six months at the Wisconsin State Fair last year. Mr. Smith is breeding this boar to a number of fine gilts sired by his herd boar Iowa Wonder, for early summer farrow.

W. I. Showler of Sacramento is establishing a herd of registered Duroc Jerseys on his ranch near Freeport, Sacramento county. He has five registered sows and a son of Defender of Kentucky for a herd sire. There are 130 acres in the ranch and he expects to eventually have nothing but purebred hogs on the place. S. W. Crawford is in charge of the herd.

C. B. Cunningham of Mills has recently bought a bred O. I. C. gilt sired by Wildwood Prince, grand champion at Iowa in 1914, and out of Lenora the 16th, the highest priced O. I. C. sow sold in 1915. The gilt recently farrowed 8 pigs sired by Wonder William which was sired by Wonder. Wonder has a reputation of getting more grand champion boars than any living O. I. C. sire.

F. W. White, the well known Berkshire breeder of Elk Grove, has an unusually attractive lot of open gilts and service boars which he is offering at this time. Mr. White's winnings at the P. P. I. E. in the aged sow classes created much comment and he advises us that some of these gilts and boars are out of the fifth prize sow at that show. He expects to put up a good show at Sacramento this fall.

Ben Garland of El Centro is taking extra care to keep the Duroc hogs on his ranch clean and healthy. His pig pastures open into a large bathing and drinking pool, which is boarded on the bottom and all sides with a slatted framing to keep the hogs out of the silt and mud. This slatted framing runs into the pool on a slope and extends 25 feet back from the edge of pool entrance to keep the wet hogs from wallowing on the banks and getting caked with mud.

R. H. Whitten of Los Angeles recently bought the Poland China sow Big Timm's Lady Wonder for his Terra Bella ranch. This sow was sired by Big Timm, grand champion at Nebraska State Fair last year. His pigs at the same show won 22 ribbons, 5 gold medals, and 2 silver trophies. Big Timm's Lady Wonder was bred to Black Big Bone 2nd, champion at Iowa State Fair last year at 17 months old. She farrowed four boars and six sows Mar. 23, all still vigorous. Mr. Whitten's herd boar is Supreme Wonder, a son of Pritchett's A Wonder and out of Defender Girl.

Ed. E. Johnson reports the sale to S. G. Owens of Madera of 21 sows, 8 of which are bred; also a boar and bred sow to Dr. Reckey of Oakland.

HORSES AND SHEEP.

Orland townspeople complain of sheep drivers leaving carcasses along the highway and streets.

Three cases of rabies and several of glanders were the only livestock diseases found in March in Kings county by Livestock Inspector Frank Griffith.

Hoveley and Doetsch of Imperial county are breeding four purebred Percheron mares to their imported stallion Havane, bought from Harold Bell Wright.

R. E. Blevins of Colusa and J. F. Mallon of Princeton are going heavily into sheep, having recently bought 2700 ewes and 6400 acres in Tehama county for range.

Losses of horses and mules from disease the past year are estimated at 1.3 per cent in Cal.; 10-year average, 2.1 per cent. For U. S., disease, 1.75 per cent; 10-year average, 1.95 per cent.

Contracting for fall lambs is going with a vim in the Rocky mountain region, one man having bought 52,500 Wyoming lambs at 7¼ to 7½ cents f. o. b. for September delivery to Ft. Collins, Colo., where they will be fed.

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SWINE.

BILLIKEN HERD OF IMPROVED CHESTER WHITES.—The Money Makers. Everything registered and cholera immune. Nothing to offer for immediate delivery. Sows now farrowing. The pigs from these sows will be ready to ship during late May and June. Am booking orders now for these. The offering represents the very best and most popular blood lines the breed produces. Sires and dams by Champions and Grand Champions. Let me have your orders early. C. B. Cunningham, Mills, Sacramento County, California.

REGISTERED DUROC-JERSEYS—ALL AGES—We are booking orders for Spring pigs out of sows sired by full brothers of "I Am Perfection Wonder," sire of Grand Champion sow at Panama-Pacific, and from others equally well bred. Also offering about 30 exceptionally choice fall boars and gilts. This stock is in first-class condition, breeding guaranteed, and of the finest blood in existence. Prices reasonable. For particulars, write Haden Smith, Route 1, Box 97A, Woodland, Cal.

REGISTERED BIG TYPE, high-grade Poland Chinas, fine yearling past herd boar for sale—all of high-grade Line bred. Big bone. Young boars and gilts. Also a quality. A pleasure to describe each accurately. A greater pleasure to have you visit my herd. Dr. F. M. Spalding, Breeder of highest quality "Big-Type" Poland-Chinas, Turlock, Cal.

REGISTERED DUROC-JERSEY — Weanlings, shoats, gilts and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

YOUNG'S POLAND CHINAS—Large type Boar, I. B. A. Wonder won first and reserve champion P. P. I. E., weighing 730 lbs. under 2 years in breeding condition. Weanling pigs, either sex—none better—$15 up. Satisfaction or money refunded. W. A. Young, Lodi, Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES — World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

RANCHO RUBIUS DUROCS according to winnings at last State and World's Fairs, are best dams in the State. Weaned pigs, large litters, now ready. $15, either sex. Elmer Lamb, Ceres, Cal.

BLATCHFORD'S PIG MEAL weans easily and safely; no trouble; no milk. Write for free folder, "The Safety Route from Pighood to Porkage," Coulson Co., Petaluma.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

REGISTERED PUREBRED BERKSHIRE PIGS — Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

LARGE, QUICK MATURING registered Berkshires.—Both sexes, $10 each for weanlings. Older ones at farmer's prices. J. M. Bomberger, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen S. Day, Box 1140, Sacramento.

ROSELAWN STOCK FARM—Registered Poland Chinas and Shorthorn cattle. Young stock, both sexes, for sale. T. B. Gibson Estate, Woodland, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

PIGS OUT OF SUPERBA—Panama-Pacific Grand Champion Poland China. Booking orders now. Chas. R. Hanna, Riverside, Cal.

BERKSHIRES OF QUALITY bred right, fed right, are right. Both sexes for sale. Prices very reasonable. W. Hartman, Ripon, Cal.

REGISTERED DUROCS of guaranteed breeding. Bred gilts, service boars and fall pigs. H. E. Boudier & Son, Napa.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINA SWINE — Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

REGISTERED HAMPSHIRES—Winners at P. P. I. E. Stock of all ages. W. T. Gatton, Box 231, Gardena, Cal.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

PURE-BRED BERKSHIRES—Stock of all ages. Bree Bourne Ranch, Route 3, Box 172, Santa Rosa, Cal.

REGISTERED DUROCS—All ages. One yearling boar. Satisfaction guaranteed. Frederick M. Johnson, Napa.

REGISTERED BERKSHIRES — Prize-winning stock. Sunnyside Stock Farm, Perkins, Cal.

Sheep shipments from Kings county included 23 cars to the East and 28 cars to San Francisco last week.

To bring horsebreeding in Austria to its former standing, the Ministry of Agriculture intends to buy 10,000 to 15,000 mares in North and South America. The "district agricultural alliances and societies" have been invited to submit lists of members who may want to purchase such horses.—Consular Report.

MISCELLANEOUS NOTES.

Congress is investigating charges that meat packers of the Central West are in combination to make undue profits from producers.

The Butte County Nat'l Bank is reported to have provided the prize money for the cattle, sheep, swine, and gardening divisions of the Butte County Spring Exposition to be held at Chico May 22-28.

The best fitted lot of young breeding stock offered for sale at the recent Shorthorn sale in Portland was the sixteen animals prepared by four students of the Animal Husbandry department of O. A. C.

The Ruether Cattle and Feed Co. of southern California have recently purchased a Williams Alfalfa mill which they will use to grind beet tops, bean straw, and alfalfa for beef cattle fattening. They state that they have put in this mill because of unsatisfactory experience last year in trying to fatten old cows having poor teeth or none at all.

THE HAY SITUATION TO DATE.

(Continued from page 523.)

practically the same as last year unless very dry weather prevents grain maturing. Conditions are favorable for a good medium crop of grain hay and a very good crop of alfalfa.

E. B. Spooner of San Luis Obispo reports that the grain acreage in that county is smaller this year than last and that about the same percentage will be cut for hay. The present indications are for a medium crop of grain hay, although it depends largely on the weather from now on. He states that more rain was needed at the time of his report last week.

Indications in Monterey county last week were that the grain acreage this year was much larger than last year and that a larger percentage would be cut for hay, according to Paul Parker of Salinas.

The feeling in hay circles of San Francisco is decidedly uppromising, one large dealer predicting that unless we have more rain at once, the grain hay crop will not be over 50 per cent, but this does not seem to be borne out by the above reports from the growing districts of the State.

SWINE.

50 HEAD OF SOWS bred to IOWA WONDER for spring litters. 60 head of gilts bred to JOKER for spring litters. 50 head of open gilts. 300 head of young pigs three to four months old, both sexes. These pigs are sired by IOWA WONDER, a son of A Wonder. JOKER is the First Prize boar, in the UNDER SIX MONTHS CLASS at the Wisconsin State Fair of 1915, and is a son of JUMBO HADLEY the FIRST PRIZE, CHAMPION and GRAND CHAMPION TWO-YEAR-OLD at the same Fair. BIG TYPE. I am offering this stock at extremely low prices. The Book, "The Poland China, the Hog Supreme," free for the asking. Write Geo. A. Smith, Corcoran, Cal.

FOR SALE—Fancy belted Hampshire hogs. Well belted young sows and boars, registered. Prices reasonable. Ben F. Thorpe, Manager, Canfield Estate Ranches, Monsall, California.

DUROCS AND BERKSHIRES—Prize stock. Guaranteed. Young pigs, $10 each. One yearling Duroc boar, $20. Write for what you want. We have it. Perkins & Co., Perkins, Cal.

REGISTERED DUROCS — High model stock of both sexes. Twenty sows, bred or open, for sale. River Bend Farm, St. Helena, Cal.

POLAND-CHINAS—250 lbs. in six months our aim. Imported sows. None better. Linn & Porter, Route A, Modesto, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED DUROC-JERSEYS — Service boars and fall pigs. Also two mature sows—bred. S. S. Southworth, Napa.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED BERKSHIRES—Big-boned. Cholera immune. Riccomi Bros., Mountain View.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRE PIGS — Write or call. Greenwood Ranch, Brentwood, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED BERKSHIRES — Weanling pigs, $10 each G. A. Casey, R. 7, San Jose.

REGISTERED POLAND CHINAS—Large type. C. M. Stetson, Route "A," Ceres, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED BERKSHIRES — Young boars for sale. Alexander and Kellogg, Suisun, Cal.

REGISTERED BERKSHIRES — Young stock for sale. F. W. White, Elk Grove, Cal.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

CHAS. GOODMAN — Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

LARGE TYPE POLAND-CHINAS—Now booking orders for Spring pigs from our Nebraska prize-winning sows. H. I. Marsh, Route A, 348, Modesto.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Ripon, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

BEEF CATTLE.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco, or H. J. Macomber, Paicines, Cal.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of imported Villager 295884.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON-NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G. Ranch, Esparto, Cal.

GEORGE WATTERSON—Breeder registered Herefords, Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

VANDERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly records. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butters as two-year-olds. A. A. Jenkins, Tulare.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

FRANK MEACHAM, Petaluma, California — Breeder Red Polled Cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

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BULL CALVES from a grandson of Celantha Johanna Lad and from a son of King of the Pontiacs. J. W. Benoit, Route C, Modesto, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

HOLSTEIN BULLS out of A. R. O. cows, sired by a son of King of the Pontiacs. Prices reasonable. J. H. Harlan Co., Woodland, Cal.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

ELEVEN REGISTERED HOLSTEIN COWS—Priced to sell as a bunch at very low figure. K. W. Abbott, Milpitas, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

HOLSTEIN-FRIESIAN CATTLE and Berkshire Hogs. H. B. Goecken, Breeder, Goecken Heights, Livermore, Cal.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

REGISTERED JERSEY BULLS from Register of Merit cows. D. F. Conant, R. "B," Modesto.

BREEDERS OF A. R. O. Holstein-Friesian cattle exclusively. Dirk Dairy Farm, Lemoore.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEYS — Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls from tested cows for sale.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

BREEDER of Registered Holstein Cattle. Ernest Otto McClure, R. 2, Modesto, Cal.

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LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd. D. & H. Rowles, Modesto.

JERSEY BULL—8 months old. A bargain. O. J. Ames, Oakdale, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

SHEEP AND GOATS.

ANGORA GOATS will clean up your rough land and furnish mutton for the ranch. Choice Mohair breeding animals at $5.00 each. Pino Grande Ranch, Guerneville, Cal.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

WANTED—100 to 200 ewes, Merino or Blackface. Not older than four years. California Sheep Cheese Co., P. O. Box 593, Davis, Cal.

THE BULLARD FLOCK RAMBOUILLETS—Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

KAUPHE BROS., WOODLAND, CAL.—Breeders and importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets, Hanford, Cal.

HORSES AND MULES.

FOR SALE OR EXCHANGE—Imported German Coach Stallion. Registered. Color seal grown; guaranteed sound in every respect. Sure breeder. Best of disposition. Weight 1350 lbs.; or will exchange for live stock. E. W. Smalley, P. O. Box 572, Hanford, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells live stock—any kind—any quality.

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

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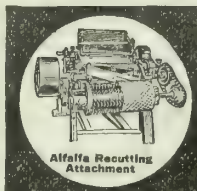
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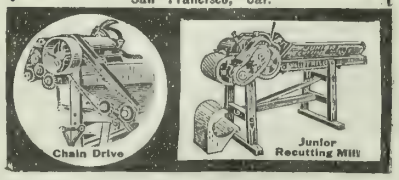
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Veterinary Queries and Answers.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for $1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

COW DOES NOT COME AROUND.

To the Editor: I have a Holstein cow that had a calf on Oct. 8, 1915, and cleaned well. Seems O. K. in every way, but up to date isn't bred. She has never shown any signs since she had her calf.—D. H. P., McFarland.

[Your cow has probably retained the corpus luteum in one of her ovaries. Manual manipulation is about the only way to rid her of the trouble. Have a qualified veterinarian perform this operation.]

HEIFER MISCARRIES.

To the Editor: I have a 3-year heifer apparently healthy. She miscarries her calf when 3½ months along. She aborted last April and again in December. None of the others have aborted.—Mrs. M. B., Los Gatos.

[Your heifer has contagious abortion. She will probably carry her calf after aborting a couple of times.]

EXTRA TEAT SORE.

To the Editor: A young cow has a small teat on the side of udder. It cracked open and became sore, is swelled a little and has scabbed over.—J. L. S., Lodi.

[Amputation of this teat is necessary. Have a qualified veterinarian do this.]

CATARRH AND SWEENY.

To the Editor: What can I do for a horse that has catarrh? Can it be cured? What can I do to cure sweeny?—D. F. C., Lemoore.

[Give this horse 5 grains potassium bichromate in solution three times a day. Better have your veterinarian treat the sweeny case.]

COW HAS DISCHARGE.

To the Editor: My cow lost her calf last Sept. and she never took bull since. A discharge runs out when she lies down. She seems healthy.—W. A. T., Gilbert, Ariz.

[Douche this cow daily with 1 dram potassium permanganate in one gallon warm water until all the discharge ceases.]

GELDING'S URINE DRIBBLES.

To the Editor: I have a 3-year-old gelding that for the last 3 or 4 months has had his urine dribble away from him a few drops at a time. When the trouble first came on he was being fed alfalfa hay; but does not improve after a couple of months in a Bermuda pasture. Is there a chance for him to get well, or must I lose the animal? Is it infectious?—A. J. S., Fowler.

[This condition is not infectious. Give potassium acetate in one ounce doses dissolved in water twice a day; also fluid extract nux vomica in dram doses three times a day.]

CALVES SCOUR.

To the Editor: Will you kindly advise me how best to cure calves of the scours and to prevent it? My calves are in the Yuma Valley, Arizona. The water is more or less alkaline and has a tendency to physic man or beast. We give our young calves whole milk the first two weeks, then gradually add separator milk until they get nothing but that. They have the run of an alfalfa patch, in which is a water trough, and can help themselves.—F. J. M., Angels Camp.

[There are many makers of vaccines to be given at birth which will prevent the trouble and also act as a curative agent after infection. These are given with a hypodermic syringe. Consult the advertisements of such makers in this paper or, better yet, have a qualified man attend to this work for you.]

COW GIVES GARGETY MILK; CALF HAS SWELLED JAW.

To the Editor: I have a cow which about every two or three weeks gives milk which appears to contain garget, at least the first milk drawn will be thick. Sometimes it is difficult to start. She will then appear all right for some time, when this will recur.

I also have a heifer calf about 4 weeks old. She has a swelling on each side of her jaw. This started on one side and then on the other. I have applied a blister a couple of times. This seemed to remove the swelling, but it has recurred twice on one side and now it has showed itself the third time on one side. Calf seems healthy and eats well. These bunches are evidently sore and occur on the lower jaw opposite the back teeth.—C. D. B., Lemoore.

[Give this cow 2 dram doses twice a day in water for several weeks. The lumps on the heifer require lancing.]

TEAT OBSTRUCTION; NAVEL FOUL.

To the Editor: Our cow has a growth between the teat and udder that interferes with the milk flow. We also have a calf seven weeks old that is apparently in good health and is lively, but has a swelling on its navel that has a foul smelling pus in it. It got stopped up and had to be opened. We have been using carbolized soapy water on it. What is the matter and what can be done for it?—G. E. W., Manton.

[This is a teat tumor and can be removed surgically. The calf should have this infected abscess cavity swabbed out with tincture of iodine twice a day until the discharge stops.]

SWELLING IN VAGINA.

To the Editor: I have a Jersey cow that had her third calf last August. Since that time she has shown a large round substance (large as a good-sized walnut) in the vagina, and sometimes it extends away out, and the more it extends out the larger it gets. It usually shows worse while she is lying down. She has had the bull three times and usually about a week after each time she has a very thick discharge and sometimes every day for a few days. She eats well and looks well otherwise.—M. E. F., Redwood City.

[This requires an examination. Call in your veterinarian.]

HARD TO MILK, GARGETY.

To the Editor: I read in a journal about using goose quills to open the teats of a cow hard to milk. I tried it about two months ago. The cow milks as hard as ever; her udder is apparently all right, but in the bowl of the separator is left caked milk.—J. H. A., Hughson.

[This is a very dangerous practice and accounts for the condition of the milk. Give this cow 2 drams potassium iodide in solution daily for a period of two to six weeks.]

Kaupke Bros. of Woodland have purchased the Hampshire buck, Peter Pan, which won first prize in 1913 at both the English Royal Show in England, and the International at Chicago. One of their lambs weighed 65 pounds at 65 days old.



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Water Troughs, Windmills, Frames and Towers. Steel and Wood. Prices the lowest.

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Fattening Market Hogs.

Conditions to be considered before starting to raise hogs for market are (1) market demands, (2) available feeds, (3) measures against parasites and diseases.

[Written for Pacific Rural Press.]

Success in fattening hogs for market depends on the demands of the market, economy of feeding, and freedom from parasites and diseases.

Market demands include size, quality, and dressed percentage. Size and quality depend on feeds, age, and breeding. Dressed percentage depends on breeding and fatness. Economy of feeding depends on breeding, the kinds of feed possible to raise economically on the farm, and a short period between birth and sale.

A large proportion of California hogs are sold locally, and there the premium sometimes goes the other way.

Good Breeding, Early Marketing.—G. A. Smith of Corcoran sells locally at 250 to 326 pounds. On a bunch of 20 barrows 10 months old sold last winter averaging 326, he received a premium of ½ cent above the market price, "and they were the runts and culls from the breeding herd." Mr. Smith claims that they dressed out 85 per cent. They were pure breds.

A small breeder in Sonoma county, S. M. Patterson, fattens grades 250 to 300 pounds to sell locally at a year old. G. F. Wood of Stanislaus county fed a bunch of 19 barrows last fall, finishing at 250 to 270 pounds. S. F. Williams of Chico has fattened purebred hogs to 300 pounds at 8 months.

However, a market is more assured for a 200 pound hog. This is good economy for the feeder, because it costs considerably more per pound to add fat to such an animal than to one weighing 100 pounds. It is also fortunate because it shortens the time individual hogs are exposed to disease, and it brings returns on the investment that much sooner and oftener.

Size at an early age is a matter of both breeding and feeding. The purebreds or first crosses, uniformly beat the rest, if given a chance to develop their possibilities.

Having kept the pigs growing rapidly up to 125 pounds on feeds high in protein, they are in best condition to mix a lot of fat among their muscles and make 200 pounders at an early age. Then it is a matter of providing less exercise and feeds most easily digestible and somewhat higher in carbohydrates from which fat can be made. Experiments at agricultural colleges seem to prove that very little lean meat is added to a mature animal fattening; but purebreds are seldom mature when fattening begins.

Feeds and Breeding Determine Quality.—What to feed depends on what can be grown on the farm and what makes the quality of pork demanded. Some feeds make pork which does not get hard when hung up after butchering. A Texan recently told us how they let the hogs harvest peanuts until the found the market would not pay for the oily pork. Hogs fed alfalfa exclusively have greenish meat not attractive to consumers. A farmer in San Mateo county fed fresh fish from the ocean, and even the dogs wouldn't help eat one of the hams bought by Geo. Croley. Skim milk and alfalfa alone make an inferior pork. Mids in excessive proportion make soft fat.

The San Francisco packers buy hogs from districts where objectionable feeds are sometimes used, subject to condition after butchering. They quote prices on grain-fed hogs, and if the finishing period has been too short, the pork does not harden, and the price is fixed accordingly. Barley is recognized in Europe as making the best flavored pork—better than corn, though a little less of it. The sorghum corns are as good as Indian corn, and wheat makes about as much pork per pound. Alfalfa, skim milk, tankage, oil cake cocoanut cake, and similar high protein feeds are necessary to get the most value from the grain carbohydrates. While very little protein is added to the weight of a mature hog, enough of it is needed to supply energy for eating and the bodily functions, and to replace the wastes. When fattening begins at four to six months, as it can with purebreds, protein for growth also must be supplied. If not enough protein for these purposes is fed, the digestion is rendered less efficient and less fat is gained per pound of feed. Since palatability is a definite factor in digestion, and since one feed alone gets monotonous, a variety of feeds of the same class either mixed or given separately at different times, adds to the fat gained per pound.

All of the best feeds for pork production, except tankage and similar products, are grown easily and abundantly on most California farms. Even Indian corn is coming to recognition even as a dry land crop in coast valleys. The sorghums are especially adapted to the interior valleys where farmers are willing to prepare the seedbed and cultivate properly. Dairy cows in all parts of the State furnish skim milk, and alfalfa is grown as a dry land crop in many parts. Since this produces only two or three cuttings, a silo is necessary to preserve part of it for the dry months. Cull sweet potatoes, squash, dried wine grapes and second crop table and raisin grapes, wormy dried fruit, inferior rice, and many similar otherwise wasted products are nearly if not quite as good for fattening as grain. Fresh fruits, melons, potatoes, etc., furnish good succulence if judiciously used.

Breeding determines quality principally as it creates a tendency to mix fat among the muscles and assimilate the maximum nutrients with the minimum exercise, thus avoiding toughness.

Sheep losses the past year by disease, in Cal. are estimated by the U. S. Dept. Ag. at 2 per cent; 10-year average, 2.5 per cent. Losses from exposure past year, 2.7 per cent; 10-year average 3.6 per cent. For the U. S., disease took 2.16 per cent the past year; 10-year average, 2.48 per cent. Losses from exposure past year, 2.17 per cent; 10-year average, 3.11 per cent.

The Livingston Drainage District was voted on favorably by the Merced county supervisors.

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PIPE — For irrigation water, supply-power. Cheaper than any other pipe of equal size, capacity and endurance.

TANKS — For all uses, in all sizes from 500 gallons to 500,000 gallons, and with towers if wanted.

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for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address
EL DORADO OIL WORKS,
149 California Street, San Francisco.

Farm Poultry for Profit.

[Written for the Pacific Rural Press by Susan Swaysgood, Pomona.]

HOW TO CARE FOR LATE-HATCHED CHICKS.

A great many people have the idea that late-hatched chicks are hard to raise, some even say "they are no good."

The chief reason for late-hatched chicks being classed as "no good," is because a few people try to hatch eggs that have been laid by hens that were forced with stimulants and heavy feeding to lay beyond their strength; also in some cases where the male birds were worked too long in breeding pens. Males should be changed at least once a month if we want strong chicks; and hens should be fed a good wholesome ration, but not forced with too much meat, mash, etc. If these things are looked after the late chicks are just as good as early ones.

Late Chicks Easier to Raise.—How any one can say that late-hatched chicks are hard to raise beats me, for I think it is much easier to raise late than early chicks. The trouble and expense of fuel is greatly reduced and much of the mortality.

Be sure not to feed too soon after taking from the incubator and for the first few days feed very light. The late-hatched chicks need more green feed than heavy foods and if this is kept in mind there will be no trouble. Lice and mites breed faster in hot weather, so it is a case of eternal vigilance to keep the brooders, houses, etc., clean and free from mites.

Spray for Brooders.—The very best and safest spray I know for chicken coops, brooders, and everything for small chicks is Kreso Dip No. 1. This is perfectly safe, and sure death to the mites. For lice keep a dust can handy and dust the heads of chicks once a week. If incubator chicks are kept from old stock they will not have head lice. But they must be looked after and if any appear get the insect powder box to work at once. If the brooding is by outside brooders turn them up to the sun every day. There is not anything quite as good or cheap as sunshine. Get the chicks out on the ground and keep the ground stirred up, every day pour a bucket or two of water on one little plot of land and next day stir the soil and watch the chicks enjoy it.

Late-hatched chicks must have shade; so if you have no natural shade, make some. It is surprising what can be done with a few gunny sacks, nails and baling wire. You can make shade for several hundred chicks in one hour with these handy things. Don't be short on shade, for if there is just a little all of the chicks will want it and will have it, even if they have to pile up on each other to get it. It is better to make enough while you are doing it so that the chicks can spread out luxuriously and grow. In warm weather, with sunshine, shade and moisture, they will grow with half the feed it takes during winter and early spring months.

Separate the Weaklings.—Pick out the weaklings or small chicks and put them in a run by themselves. You can feed them a little extra and they will soon catch up with the big ones.

Chicks hatched as late as June 30 can be raised so well that they will lay in December and cost about half what it costs to raise early-hatched chicks.

Another thing in favor of the late-hatched chicks is that they will not go into a molt after laying a few eggs. When they commence to lay it is for the season; provided, of course, that you feed them.

VALUE OF CHICKS SIX WEEKS OLD.

To the Editor: With selling price of 15 cents for day-old chicks, what should be the price of them at six weeks of age if given very best care, housing, and feed?—V. P., Dixon.

[Answered by Geo. H. Croley.]

[Years ago, when the "broiler route" was boomed as the sure road to easy money, it was customary for the enthusiast to figure thus: The chicks would eat one pound of feed the first month, two pounds the second, and three pounds the third month, resulting in a two-pound broiler that would sell for not less than fifty cents wholesale. As a matter of fact, different lots of chicks will vary considerably in the amount of seeds, grain, meat, and meals consumed during the first six weeks. Much depends on the amount of greens and vegetables supplied. As a rough basis for our purpose, let us estimate the cost of feed at six cents. Our correspondent emphasizes regarding the best of care and housing and as this special service is worth liberal compensation, it should be fair to add an additional ten cents for that. On that basis, these chicks at six weeks of age should be worth about thirty cents each.]

JACK-RABBIT CHICK FEED.

To the Editor: Tell the best method of preparing jack-rabbits for poultry food, especially for chicks.—E. V. S., Lemoore.

[Answered by Geo. H. Croley.]

[Jack-rabbit meat is not good for chicks until the chicks are at least three weeks old. Before that age, ground bone, with a very little meat attached, is a better form of animal food. When used for poultry food, jack-rabbit meat should be well cooked to destroy any tape worms, and to facilitate removing any great surplus of fat. An abundance of animal fat interferes with the digestion of mature and growing fowls, as well as of chicks. If one has a very large kettle in which to cook the rabbits, they should be boiled in as small an amount of water as possible. When cold, the cake of fat can be moved from the top. The thick soup could be used in a moist mash. The meat and bones, if ground in a green bone cutter, would be better than the meat alone, but if there is no means of grinding them the meat may be separated and fed in a mash. Fowls do better if the meat is fed with other material. Under very favorable weather conditions, the rabbits could be dressed, stripped, and dried similar to jerkie, and then cooked as wanted. The experience of successful poultrymen has demonstrated that it is unwise to feed raw meat to fowls of any age.]

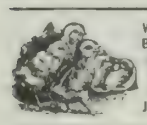
LIMBERNECK KILLS LAYERS.

To the Editor: Please give information as to limberneck. I lost twenty-two nice fat laying hens all in one day. A neighbor says it is caused by a poison bug or some kind of poison. Is that so, or is it a disease?—W. G., Santa Margarita.

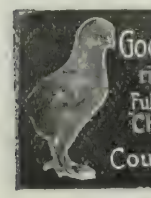
[Answered by Geo. H. Croley.]

[Limberneck is caused by serious intestinal disturbance due to indigestion, colic, intestinal parasites, or to ptomaine poisoning which affects the nerves that control the neck muscles, allowing the head to fall on the ground between the feet. In nearly all cases it is due to ptomaine poison and it most frequently occurs among flocks that are fed table scraps. Another source of infection is putrid meat, maggots, or worms that have become infected, particularly when these are found by the fowls in heaps of rubbish, rotten straw, or other heated and decaying vegetable matter. In order to save the fowls,

(Continued on next page.)



WHITE and BROWN LEGHORN and BLACK MINORCA chicks at reduced prices. Selected layers and strong pens. Write today. I guarantee satisfaction. JAMES D. YATES, Poultry Judge, Modesto, Cal.



Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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LIVABLE BABY CHICKS—We are supplied by reliable Breeders and experienced hatchers. Better chicks cannot be had rom any source. All varieties, any number. be had from any source. All varieties, any number. pullets. Free exhibit. Everything in Poultry, Pigeons, Rabbits, Dogs, Cats, Canaries, Pets. Give us a call or write. Fanciers' Exchange, 642 S. Main St., Los Angeles, Cal.

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ALL OUR PURE-BRED CHICKS from Hoganized, trapnested flocks, have been reduced in price. Barred Rocks, Rhode Island Reds, Black and White Minorcas and Anconas, 12½c each, 2 or 1000; Brown Leghorn, 10c each, $9 for 100; White Legborns, 9c each, $7.50 for 100. Brown's Poultry Yards, 2550 San Pablo Ave. Phone Oak. 2183.

MACFARLANE STRAIN WHITE LEGHORN eggs, $1.50 per 15, $2.50 per 20, $5.00 per 100; chicks Dec., Jan., Feb., 12c each, afterward 10c. Order now, any quantity. Cockerels, $2.50. Big plant, low prices, stock better than ever. Catalogue free, correspondence solicited. Newton Poultry Farm, Dept. 1, Los Gatos, Calif

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The Home Circle Page of the Pacific Rural Press

FLORAL CORNER.

[By Geo. N. Tyler, Los Gatos.]

Dahlias.—It is time now to plant dahlias. They need a moderately enriched soil and should be planted where they are sheltered from strong winds, and if they have shade from the hot afternoon sun, so much the better. If you plant the tubers, make a hole six inches deep, drive a stake about four feet long down on the edge of the hole, tack the label or name of the variety to the stake, put a little clean sand in the bottom of the hole and lay the tuber slanting towards the stake, with the eyes up; put a little more sand around the tuber and then cover with about two inches of soil. Give a good watering and, as the eyes grow, fill in the earth level. The object of the sand is to prevent any green manure from coming in direct contact with the tuber. Allow only one stalk to grow from a tuber and after it has made four leaves, pinch out the top, and a stalk will grow from the axils of the leaves.

If you wish to grow flowers for exhibition purposes, put the tubers in a warm place so they will sprout like potatoes, cut off these shoots and treat them the same as any cutting. Put them in three inches of sharp sand, in a warm, shady place, and keep them well watered until rooted. Plant them out and shade for a few days until they get established, grow these to a single stalk, and when they show flower buds disbud, so as to throw all the strength of the plant to the flower. You can increase your tubers by this method, as the plants make tubers for the following year.

After the tubers are rooted and plants show buds, give them a two-inch mulch of half-rotted manure, and water through this manure. The secret of growing good dahlias is plenty of water—soak them every day and also spray the foliage in the forenoon. If you want extra large flowers, give liquid manure every other watering, and once in ten days give nitrate of soda, one pound to fifty gallons of water.

You can put in cuttings now of all green house plants, such as begonias, coleus, etc.

If you have small greenhouses or conservatories, the glass should have a good shading; use coal oil and white lead, or gasoline and white lead, or whitening and water, so they can be removed easily in the fall.

Plant cosmos now; stake them when you plant them. All of the tender annuals can be planted now.

Ferns, both in the green house and outside, are making strong growths now and should be sprayed every day. If any in the green house require repotting, now is the time to do it. Make a compost of three parts leaf mould, one part loam, and one part sharp sand. Give thorough drainage, and plant loosely in the pots; do not pack the soil.

RECIPES FOR RAISIN DAY—APRIL 28.

Quick Raisin Bread.—Sift together 3½ cups whole-wheat flour, or 2 cups graham and 1½ cups white flour, with 3½ teaspoons baking powder and 1 teaspoon salt. If sweetened bread is liked, add ¼ cup sugar. Work in 2 tablespoons butter and add one cup seeded raisins cut in halves. To 1 beaten egg add 1 cup milk and add gradually to make soft dough that may be handled easily (add more milk if needed). Press dough into well-oiled bread pan, cover with oiled paper, let rise twenty minutes and bake in moderate oven about one hour.

Raisin Cream Cookies.—Beat 2 eggs until light, add 1 cup sugar, ⅔ cup chopped seeded raisins and beat thoroughly. Then add 1 cup thick, sour cream in which 1 teaspoonful soda has been stirred, 1 teaspoon salt, 1 teaspoon vanilla, 3 cups flour with 3 level teaspoons baking powder. Chill the dough, roll ¼ inch thick, sprinkle lightly with shredded cocoanut, press in gently, cut into shapes desired and press seeded raisins in center of each cookie. Bake on buttered sheet in moderate oven.

DYEING.

To make white lace any desired color, put tube oil paint into gasoline and stir until dissolved, then try a sample of the material. If too dark, add more gasoline, or if too light, more paint.

Dip the article up and down until evenly wet all over, shake and air thoroughly. A little pressing on the wrong side helps freshen it. This same method of dyeing is also good for ostrich feathers and works like a charm on artificial flowers.

FILLING PRESERVE JARS.

Use a gravy boat in filling jars with jelly or preserves. It is easily dipped into the hot kettle of fruit or liquid by means of the handle and the long mouth fits into a jar of almost any size and thus prevents spilling and all the stickiness attached to such work.

SALTY SOUP.

If, by mistake, you get the soup too salty, add a few slices of raw potato and cook a few minutes longer. Upon removal of the potatoes you will find that they have taken up the excess salt.

LIMBERNECK KILLS LAYERS.

(Continued from page 530.)

one or two teaspoonfuls of oil of turpentine in the same amount of sweet oil to mature fowls, or a proportionately smaller amount to chicks. Follow in thirty minutes with two tablespoonfuls of ginger tea prepared from two teaspoonfuls of powdered ginger in a cup of warm sweet milk; repeat in an hour if it seems necessary. After twelve to twenty-four hours feed boiled rice lightly salted. Follow this with raw potatoes or beets. Another remedy: Mix equal parts of tallow (or lard), mustard, ginger and red pepper; divide into pills about the size of a large pea; give one pill at a dose and repeat in two hours if necessary.]

HENS WORK OVER-TIME TO HATCH CHICKS.

To the Editor: On evenings of March 1 and 2, I set 36 Rhode Island Red eggs that did not hatch until March 22 and 25, but result was 28 chicks. I also set 12 eggs of same breed on evening of March 7, but now on the evening of March 28 there are no chicks. What is the cause of this delay?—A. L., Raisin.

[Answered by Geo. H. Croley.]

[There are numerous causes for delayed hatching. The following are some of the reasons: Eggs more than two weeks old; hens stay off nest longer than common; the temperature of some hens is below normal; mites, ticks, or fleas in nest that annoy the hens; and too much loose material in nest that allows heat and carbonic acid gas to escape.]

WANTED—FARMER'S FORMULA FOR WINTER EGG FOOD.

To the Editor: I would like a formula to use when feeding hens for heavy egg production during the winter months. I would like to hear through the Pacific Rural Press from a farmer who has nothing to sell.—Mrs. A., Exeter.

[Will some farmer who has solved the problem of heavy egg production in winter, tell our readers how he does it?—Editors.]

SOUTHERN CALIFORNIA GUERNSEY PIONEERING.

(Continued from page 522.)

the lip by an ingenious motor-driven machine. It is then put into a refrigerator room until taken out for delivery to the five regular city customers who take all the product of the dairy—wholesale at retail prices.

Empty bottles are washed with a mechanical brush machine which cleans two bottles at once, inside and outside. They are then stacked onto cars and run into a concrete sterilizer for a half hour at 180 to 200 degrees heat under 80 pounds steam pressure.

The 15 cows on test are milked at 6:30 a. m. and at 2:30 and 10:30 p. m. The last milking is separated for cream.

"The secret of keeping milk is to produce it clean and keep it cold," says Mr. Brant. "And the secret of getting plenty of the best milk is to breed from cows and bulls with good records."

Roosts should be so placed that the fowls will not be required to do much jumping.

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MRS. BEST'S LETTER.

My dear Friends:

Last week in this department was suggested the idea that as city dwellers went to the country for their summer vacations, that it would be fine for country people to come to the city for their summer outing. The Southern Pacific Ry. Co.'s announcement in this issue of special rates during the summer will help along the suggestion. San Francisco has a most bracing summer climate, which is doubly welcome to the dwellers in the warm interior valleys—in fact, any of you contemplating a summer trip to "The City," as we who live around the bay affectionately call it, should bring extra wraps and possibly heavy underwear. San Francisco being a city of hotels, there is no difficulty in finding rooms, or room and board for whatever sum you wish to pay. If you have no acquaintance with hotels, you can get all information desired by writing the Hotel Association, 704 Market St. A satisfactory way is to take rooms and get your meals wherever you happen to be. The meals can range from breakfasts at the cafeterias, where the price of everything is plainly stated and a most reasonable meal can be secured, to dinners at cafes, known all over the country, and correspondingly high prices.

Of special interest to women are the big stores, where under one roof you can find everything you use in a home, and of very great interest, the fact that all of the big stores have summer sales in all the departments, at which time you can always make a substantial saving and in some cases, buy for half the original price of the article. This is true, not only of dry goods stores but also of furniture stores, music houses, shoe stores, furriers and the like.

The churches, with their celebrated pastors and fine music, the theatres and movies offer a treat to all of you, while across the bay in Berkeley is the State University, where perhaps you have a son or daughter, or if not now, will have in the future. They are doing a wonderful work there and turning out young men and women who will be leaders in the community in which they live.

Of course, the men of your family will enjoy seeing some of the things that interest you, but they do not need to be confined to that, for San Francisco is headquarters for many lines in agricultural markets, such as the Almond Growers' Exchange, Cal. Dried Fruit Exchange, Dairy Exchange, the Grain Exchange, wholesale markets for vegetables and fruit, large stock yards and packing plants. Investigation along those lines is worth dollars and cents to a farmer. San Francisco Bay is wonderfully interesting with its ferry boats, and usually a battle ship or two and its other shipping. The dry docks at Hunter's Point are well worth making a trip to see and from there along the water front back to the Ferry building may be found the great ocean liners, large iron and ship building plants, and many other interesting sights. Then, too, there is the fishing center at Meiggs Wharf. If your time is not too limited, a trip to Mt. Tamalpais and the Muir Woods is by all means advisable—they are both trips you will never forget. Also there is in the city, Golden Gate Park, the Civic Center, Chinatown and scores of other places of interest. Oakland also offers many attractions and some of you may wish to stay there and cross the bay daily for the pleasure of the ferry trip.

For a change, for pleasure, for profit, we would suggest to those of you who live in the great valleys or in the mountains that a few weeks spent in the cities around the bay would be profitable and result in pleasant memories. If this department can be of further service to you in this matter, do not hesitate to write to Yours devotedly,

Rosabella Best.

DRYING OF CURTAINS.

If you hang your curtains on a line to dry, try putting them over double and you will find they will not pull out of shape as badly as when hung by the edges.

If you have no curtain stretcher, a clean plot of grass and a box of toothpicks helps solve this problem. Pull the curtains carefully into shape and pin down with the toothpicks. When dry, they should be ready to hang. This applies only to white curtains—ecru curtains should be dried in the shade after careful washing and should have steeped tea added to the rinse water.

FARM HOUSES.

City houses must of neecssity conform to the amount of ground space available, but that does not need to apply to houses built on farms. There, where land is not bought by the foot, all sorts of artistic styles can be indulged in at no more expense than the old style four straight walls. Wide houses with generous porches, set well back from the road and approached by a curving driveway bordered with trees make an attractive place to the passerby as well as a joy to the fortunate owner.

USE OF THE FORK.

Almost all foods are eaten with the fork, even including peas, and other dishes of semi-liquid consistency. In eating, the fork should be used in the right hand, with the tines up—the only time it is used in the left is when it is assisting the knife in the cutting of meat. Use the fork for the cutting of salad and pie or pudding. The knife is only used for meat or the spreading of butter on bread.

WEED KILLER.

A subscriber sends in his plan for keeping paths in gardens or lawns free from weeds. Take five ounces of powdered arsenic and one gallon of water, boil the arsenic and water together for several minutes, stirring well. To this, add two gallons of cold water and a half pound of soda. Apply on paths when perfectly dry.

CHAIR TIPS.

Pieces cut from old rubbers, felt or linoleum and glued to the ends of chair legs will save oiled floors from marks and insure less noise in a busy household.

"Come on! Come!" said a gentleman to a little girl at whom a dog had been barking furiously. "Come on! He's quiet now." "Ah, but," said the little girl, "the barks are in him still.

"How are you getting on with your new motor-car?" "Oh, I'm all right. But I'd feel a lot more comfortable if the streets were not so full of careless or inexperienced pedestrians."—Star.

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In winter when the air is chill,
And winds are blowing loud and shrill,
All snug and warm I sit and purr,
Wrapped in my overcoat of fur.

In summer quite the other way,—
I find it very hot all day,
But human people do not care,
For they have nice thin clothes to wear.

And does it not seem hard to you,—
When all the world is like a stew,
And I am much too warm to purr,
I have to wear my winter fur?
—Oliver Herford.

PIGGY CLOVER-LEAF.

Barbara and Ned were playing by the stone wall down in the orchard corner.

"Here's a four-leaf clover," said Barbara, holding up a cluster of green leaves she had found in the grass.

"They're nice things to find," declared Ned. "People used to believe that something good was going to happen as soon as you found a four-leaved clover."

"That's fairy stories!" retorted Barbara. "Something good is always happening, and what difference could the clover make? Anyway, this looks like a place where good things would just have to happen, doesn't it, Ned?"

The two children had never known much about the country until this visit to Mr. Dean's farm, and they thought this corner of the orchard was like a bit of fairyland.

"I wish I could see a fellow about a foot high looking at me from behind a burdock leaf," said Ned, rolling over on the grass. He had been reading about such happenings as that in the book of fairy stories which lay on the ground beside him.

"Or an elf baby asleep in a flower," added Barbara, peeping into a big buttercup. "But I'll tell you what I'd like better than that, Ned—some real live pet that we could play with. We've got acquainted with lambs and calves and chickens since we've been here, and now I'd like some new kind of pet, but I don't quite know what."

"I hear a funny noise," cried Ned, sitting up suddenly.

"So do I," whispered Barbara.

As they listened they heard it again, an odd gruff little noise like an odd gruff little voice talking to itself. It came from behind one of those big burdock leaves.

They crept nearer and Ned lay down flat in the grass to look behind the largest leaf. The leaf was almost as large as Barbara's white apron and it hung quite to the ground from the top of its tall stalk.

"Sh!" whispered Ned. "Stoop down, Barbara—there, can you see him, standing behind that leaf?"

Barbara had knelt down beside Ned, and her mouth made itself into a round "Oh!" as she looked.

Then the gruff little voice spoke out in a frightened way. There was a white flash and something shot out of the burdock thicket and scurried away down into the field.

"He's scared; we mustn't chase him," cried Ned. "But we'll just see where he goes, or he may get lost."

At that moment a big clumsy puppy came rushing out of the barn near by. He spied the little white runaway and was off after him at full speed.

"Oh, oh, Duke won't know any better than to hurt him if he catches him," cried Barbara, and the two children ran after the dog.

The little runaway scampered down into the low part of the field where the waters of the frog pond were rippling clear to the pasture fence. When he came to the edge of the water he stopped. The dog was not far behind him and the little fellow was very much afraid of that big barking creature.

"Here, Duke, here! Stop that!" called Ned. "You'll drive him into the pond, you bad dog."

Duke stopped short at this, but it was too late. The little runaway had plunged into the water and was swimming bravely across the pond. When he reached the other side he slipped through the pasture fence out of sight. Duke stood at the edge of the pond, wagging his tail and looking across the water as if he would have laughed if he had known how.

"Who would have thought that little runaway could swim like that?" he seemed to be saying to himself.

Barbara and Ned ran around the edge of the pond and slipped under the pasture fence. They found the little runaway shivering under a clump of ferns, and, after a good deal of trouble and much creeping about in the brush, Ned caught him and wrapped him up in his sweater.

"Look," cried Barbara, "he isn't a bit afraid, now he sees we are going to be good to him. Oh, Ned, isn't he just a dear!"

"He's the littlest pig I ever set eyes on," said Ned, who had been in the country more than Barbara had, and so knew a pig when he saw one.

They carried the little fellow home to Mr. Dean, who had been hunting for him all around the barn.

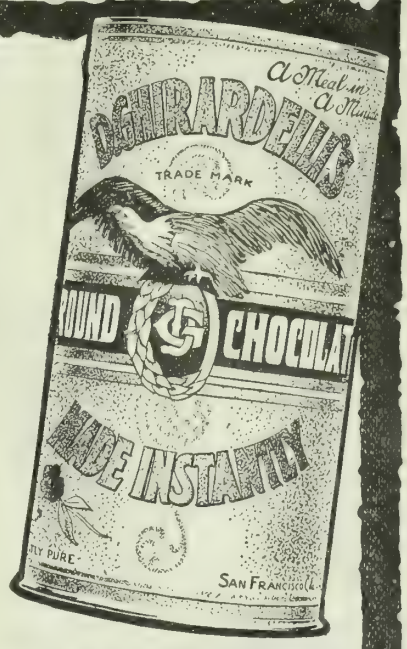
"I put him in a barrel and he tipped it over and ran away," he explained. "Now, if I make him a pen down in that corner of the orchard where you like to play so much, will you carry him milk and look after him every day while you're here?"

"We'd just like to!" cried Ned, and Barbara added, "If you haven't thought of any name for him, Mr. Dean, I'd like to call him Piggy Clover-Leaf, because, you see, he happened right after we found the four-leaved clover."—Zion's Herald.

"Father, what is a veterinary surgeon?" "One of those fellows at the Pension Office, my son, who examines the veterans for pensions."—Record.

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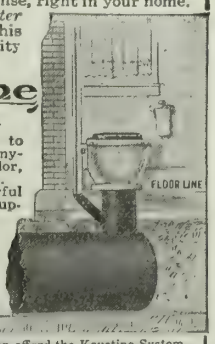
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Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS.

San Francisco, April 19, 1916.

WHEAT.

Outside markets still show some firmness, with rather unfavorable crop prospects in many districts. Locally, however, there is very little demand, and spot values are inclined to easiness, California Club being lower.

Cal. Club, ctl.	$1.57½	1.65
Northern Bluestem.	1.90	@1.92½
Northern Red	1.85	@1.95

BARLEY.

Both feed and shipping have dropped off again, as the spot grain receives very little attention, and some holders have become anxious to effect sales. Supplies, however, do not appear to be very large.

Shipping, ctl.	$1.37½ @1.40
Choice Feed, ctl.	1.32½ @1.35

OATS.

Extreme dullness has characterized this market for some time, and there is hardly enough business to establish definite values. Offerings are not excessive, however, and the old range of prices is allowed to stand.

Red Feed	$1.35 @1.37½
Red Seed	1.45 @1.65
White	1.45 @1.50

CORN.

Eastern Yellow is unchanged, with about the normal demand in this market. Egyptian, etc., are in very fair demand for feeding, and bring about the prices formerly quoted, though local conditions in producing districts vary too greatly for the city market figures to apply generally throughout the State.

Eastern Yellow, ctl.	$1.80 @1.85
Milo Maize	1.40 @1.45
Kaffir	1.60 @1.65
Egyptian	1.50 @1.57½

BEANS,

The bean situation shows no very marked change, though there is a little more inquiry in some lines, and conditions are more favorable for a maintenance of values on about the present level. The demand has been mainly for small whites thus far, this variety having again been marked up. Pinks remain dull, and the general list is quiet, but with less easiness than has been noted in the last few weeks.

(On wharf, San Francisco.)

Bayos, per ctl	$4.50 @4.60
Blackeyes	2.90 @3.00
Cranberry Beans	4.65 @4.75
Horse Beans	3.00 @3.25
Small Whites (south)	6.10 @6.20
Large Whites	5.75 @5.90
Pinks	4.20 @4.30
Limas (south)	4.35 @4.45
Red Kidney	6.50 @6.75
Mexican Reds	4.50 @.465
Tepary Beans	4.00

SEEDS.

The buying season in all lines quoted is now practically over, and the market is quiet, with light offerings and values nominally as before.

Melilotus Alba, lb.	23 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	5 c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Alfalfa, per lb.	22 @24 c
Sudan Grass	40 c

HAY.

Arrivals of new alfalfa since the first car came in have been light, but larger shipments are expected very soon, and there is a good demand, with dealers looking for all they can get for early delivery. Old alfalfa is well cleaned up, and little more than nominal in value. Arrivals of hay are keeping up fairly well, and with very little demand in the local market values here show no great strength. Stocks in the country, however, appear to be well cleaned up, and there is a demand for Hawaii and north coast ports which will account for a considerable tonnage if space can be secured on vessels. The weather has been very bad for the new crop, although some districts still seem to be in fair shape. The hot winds have had a very bad effect in many localities, however, and the grain hay everywhere needs rain. On the other hand, rain at this time would probably cause material loss to early alfalfa and volunteer hay.

No. 1 Wheat	$13.00 @16.50
No. 2	12.00 @14.50
Tame Oats	12.00 @18.00
Wild Oats	12,00 @14.00
Alfalfa	12.00 @15.00
Stock Hay	6.50 @ 8.50
Straw, per bale	.25 @ .40

FEEDSTUFFS.

There is nothing new in this department at present. The general demand is not so active as it was a few weeks ago, but values are well maintained.

(Wholesale prices, per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$22.50 @23.50
Alfalfa Meal, per ton.	20.00 @21.00
Alfalfa Molasses Meal per ton	21.00 @22.00
Bran, per ton	24.50 @25.50
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00 @25.00
Cracked Corn	40.50 @41.50
Middlings	33.00lb34.00
Rolled Barley	29.00 @30.00
Tankage	45.00
Rolled Oats	29.50 @31.00

VEGETABLES.

Prices in several lines are holding up very well, especially such goods as are brought from distant points. Florida eggplant has been marked up sharply, and peppers also are higher, while Mexican tomatoes are holding their own. Few have yet appeared from California points. Cabbage is between seasons and high; celery is all cleaned up, and lettuce shows a slight advance on light arrivals. Offerings of good asparagus also are comparatively light, as a large part of the crop is being taken for Eastern shipment and canning; while some trashy stock sells below quotations, the better grades have advanced. Artichokes also are higher, with large stock hard to find. Beans have dropped sharply, and peas and rhubarb are rather easy.

Cabbage, ctl.	$1.25 @1.50
String Beans	12½ @25c
Peppers, bell, lb.	25 @30c
Rhubarb, box, Bay	50 @65c
Asparagus, box	1.75 @2.25
Artichokes, doz.	40 @50c
Lettuce, small, crate	1.00 @1.25
Eggplant, lb.	15 @30c
Peas	3½ @ 5c
Tomatoes	2.50 @3.00

POTATOES AND ONIONS.

New potatoes are arriving in good shape, and move readily at the former prices. The crop is considered about normal in the river district. Old stock shows no further change, with a rather quiet demand. Oregon onions have been marked up, while Australians are easy, with another good-sized arrival.

New Potatoes, ctl.	$2.50 @2.75
Oregon Burbanks	1.75 @2.00
Delta Burbanks	1.25 @1.75
Sweet Potatoes, ctl.	2.50 @2.75
Onions, Delta, ctl.	1.25 @1.50
Onions, Oregon	1.50 @1.60
Australian	3.25 @3.50
Garlic, per lb.	8 @ 9 c

POULTRY.

Ordinary dressed hen turkeys are lower, though choice stock still brings former prices. Hens are easier, with a material increase in Eastern offerings, while fryers are quite firm. Ducks have been marked down a litle, while Belgian hares are higher.

Turkeys, dressed	24 @28c
Live Turkeys, lb.	20 @22c
Broilers, 15 lbs. to doz. and less, lb.	30 @33c
do, over 15 lbs. to doz.	35 @36c
Fryers	35c
Hens, extra, per lb.	21c
Small	20c
Smooth Young Roosters, per lb.	25 @30c
Squabs, per doz.	2.00 @4.00
Geese, per pair	2.25 @3.00
Ducks, young, lb.	19c
Old	16 @17c
Belgian Hares	11 @12½c

BUTTER.

Butter has fallen rather sharply during the week, standing now but little higher than a year ago, and local dealers believe that normal prices will soon prevail, as producing conditions are favorable and the recent high prices have stimulated production. Local buying has been much less active, and there is less shipping demand along the Coast. Some butter is still going East from country points, but buyers there also show less eagerness, as their usual sources of supply are making better deliveries. There has been some European export business, but not enough to be a continuous factor in this market; while little if any Australian demand is expected. There will accordingly soon be a surplus for storage, and it is doubtful if the storage operators will be willing to pay more than last year.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	27	27	27	25½	25½	25½
Prime Firsts	26½	26½	26	25	25	25
Firsts	26	26	25½	24½	24½	24½

EGGS.

Extras dropped a little about the first of the week, but the loss was immediately regained, with large storage purchases and considerable buying for current demands.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	22	21	20	20	22	22
Sel. Pullets	20	19	17	17	19	19

CHEESE.

Flats are steady at the recent decline, with an active demand, while Y. A.'s and Monterey cheese are both lower, supplies being comparatively large.

Y. A.'s, fancy	17½c
Fancy Calif. Flats, per lb.	14½c
Monterey Cheese	15 @16 c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	29	28	27	27	25	25
Eggs	21	21½	20	20	23	22½

DECIDUOUS FRUITS.

A few raspberries are coming in and find a fair demand as quoted. Strawberries are arriving freely, and prices on Watsonville stock have been marked down, though choice offerings still command fairly high prices. The best Southern stock is

PRUNE AND APRICOT GROWERS COMPLETE ORGANIZATION DETAILS.

Prune and apricot growers will get all that their fruit sells for, less 5 per cent to pay operating expenses. At delivery to the packing house, they will get 4 cents basis advance on prunes and 8 cents advance on apricots. This is the plan worked out in detail for the state-wide co-operative organization, by representatives of the Growers' Information Bureau and of local organizations in Santa Clara, Sonoma, Napa, and Sacramento valleys, who met April 19 in State Market Director Weinstock's offices. The 5 per cent is to pay operating expenses, a big advertising campaign to increase American consumption, and stock dividends which shall never be over 6 per cent.

The proposed organization is to determine statewide standards of quality, making no distinction for the district in which produced. It will develop markets and sell fruit at the highest possible price, returning to the growers all except the 5 per cent. It must have $750,000 capital subscribed and control 75 per cent of the bearing acreage of apricots or prunes or both before March 1, 1917, and before it can do business. Local organizations will be asked to sign up the crops of their members. All other individual growers will soon be visited by canvassers for capital and fruit contracts. Meetings will be called by school districts for the same purpose.

Stockholders will elect 24 trustees and the Sate Market Director will appoint one to keep impartial supervision.

Eastern brokers have written that if the organization will guarantee a minimum price to the trade, of standardized goods, they do not care what that price is, and will do business on a smaller margin.

Prune Crop.—Prunes are still dropping from the trees. A combination of estimates from the various sections puts the probable crop at 120,000,000 to 125,000,000 pounds for the State as against 170,000,000 pounds last year. Packers are offering 5½ cents basis for 1916 prunes.

Special Livestock Market Report.

A few grass cattle arrived last week from the southern part of the San Joaquin valley, but only a few cattle have been contracted for and growers are holding for higher prices. The Eastern markets continue high. With Mt. Diablo as a base line it may be said that anywhere north of that point rain is badly needed. There is a possibility that a continuance of the dry weather may crowd some into the feeders' ranks later

Although there have been plenty of sheep for the past month local concerns are expecting the supply to be pretty well exhausted in another two weeks. There are plenty of lambs and it looks as if this condition would continue through the coming spring and summer. Except for the one shipment previously reported there have been no shipments of lambs East and none are expected before the middle of May.

Hog receipts continue to hold up fairly well but there has been a big slump in fresh pork consumption for the last month on account of the warmer weather. Killers are working on dairy hogs almost entirely and are expecting better quality from now on, also better weights. The Eastern market on Tuesday, at Chicago, maintained a $9.95 top.

WOOL.

Wool is coming in from the country freely for storage. The shrink is said to be considerably heavier than was expected earlier in the year by most of the buying fraternity and as a result those who bought southern wools at the height of the boom are stung. More or less buying is reported but only at prices which buyers consider right. Prices in the East show a hardening tendency, although the volume of business is comparatively small and the mills are well supplied. The London sales closed about five per cent stronger on free long staple but defective wools were lower. Our suggestion to sell when the price was away above the average of past years seems to have been warranted.

a little higher. Loquats are easy, with ample supplies. A few cherries have appeared here, the first lots selling at $2.50 per box.

Raspberries, basket .....30@35c
Strawberries, S'n, crate. $ .75@1.30
Fresno ..... 1.25@1.50
Watsonville, chest .. 6.00@10.00
Apples:
Pearmain ..... .85@1.00
Baldwin ..... .75@1.00
Loquats, crate ..... 2.00@2.25

DRIED FRUITS.

Spot conditions are beginning to give way to futures in point of interest in this vicinity, as the packers have been buyers in the field for the last few weeks endeavoring to make contracts in several lines, and their offers are quoted low. From all that can be learned here, the growers are not very eager to sell, and no great quantity has been contracted so far. The result of the marked shrinkage in prune crop estimates is reflected both in advanced offers for new crop, and in firmer prices quoted at the selling end. Conditions are still rather uncertain, with growers even more than packers disposed to await further developments. In fact, the interest shown by buyers, in spite of the embargo scare, is decidedly encouraging. The spot market is developing more activity, as old stocks in consuming markets are getting closely cleaned up, and the trade is taking hold better than for some time past. There have been some good-sized shipments of prunes, and peaches are said to be well cleaned up in some quarters. The New York Journal of Commerce says:

"The excitement in the market for future California prunes due to covering by packer shorts by purchases in distributing markets has calmed down. Whether the damage has been as great as some estimates would make it the more conservative people in the trade hold cannot yet be definitely told. The least bullish of these crop estimates place the probable yield based on present conditions at 70 per cent of last season's output, which was approximately 180,000,000 pounds. Several prophets, on the other hand, saying there will not be over 50 per cent of an average crop.

DRIED FRUITS.

Apples .....5 @5½c
Apricots, per lb, 1915 ...6 @10 c
Figs, white ..... Nominal
Black ..... Nominal
Calimyrna ..... Nominal
Prunes, 4-size basis, 1915 . 4 c
1916 .....4 @5 c
Peaches, 1915 .....4 @4½c
1916 .....4½@5 c
Pears .....5½@7½c
(Associated Raisin Co. Prices.)
Fancy Seeded, 16 oz. .....7 c
Choice Seeded, 16 oz. 6¾c
London Layers, 3-crown,
20-lb. box $1.25
Imperial Clusters, 6-crown,
20-lb. box 2.50
Bulk, layers, 50-lb. box 2.25

CITRUS FRUITS.

In spite of heavy shipments, averaging over 200 cars daily, orange prices are holding remarkably steady. From most districts in the southern part of the State navels are about all gone. From San Antonio, Ontario, Riverside and Redlands there are nearly 4,000 cars yet to be shipped. Valencias are being sent out from Tulare county and shipments of this variety will start from southern California next month.

At New York on Monday, April 17th, navel oranges averaged on the auction from $2.10 to $3.30 per box, and lemons brought from $2.90 to $3.75. At Chicago the same day navels averaged from $3.25 to $3.50 and lemons $3 to $3.50 per box.

All prices in the San Francisco market stand as before, with quite an active demand for oranges and grapefruit.

Oranges, Navels .....$1.50@2.75
Tangerines ..... 1.25@1.75
Grapefruit ..... 1.50@2.50
Lemons, box ..... 1.75@3.50
Lemonettes, box ..... 1.25@1.75

HONEY.

Honey is very quiet at present, as stocks are light, and there is no disposition to buy, as new honey will be coming in within a few weeks. There is a good consuming demand, however, and there will be very little on hand when the new stock arrives.

Water White, comb .....13@15 c
Amber ..... 8@12 c
Water White, extracted .. 7@ 8 c
Light Amber ..... 3@ 4 c
Dark ..... 2@ 2½c

NUTS.

Walnuts are pretty well cleaned up, with little besides Manchurian nuts on the market at present. Almonds also are in light supply, though there are said to be still a few scattered lots in the country. There is only a limited spot demand, but large buyers show considerable interest in futures.

(Prices f. o. b. San Francisco.)
Almonds (1915) .....Nominal
Walnuts (1915):
Budded, per lb 17½c
No. 1 .....14 c
No. 2 .....11 c
Jumbo .....17 c

HORSES.

The local market remains without animation. A few more drafters arrived during the week, but they move off rather slowly, and it is evident that local buyers are not taking as much interest as usual, even in ordinarily attractive stock. There is a fair country business, however, in all-purpose horses, and stock suitable for military use is said to be pretty well absorbed in most parts of the Coast.

(Approximate values in San Francisco, based on auction sales.)
Drafters, 1700 lbs and up $ 250
Drafters, 1550 to 1650 .. 150@200
Chunks, 1350 to 1500 lbs. 150@175
Wagon horses, 1050 to
1350 lbs. ..... 110@150
Green Mountain range
horses, 950 to 1200 lbs. 20@ 75
Farm Workers ..... 50@100

HIDES.

Dry, 15 lbs. and over ..30 @31 c
Kip, 10 to 15 lbs. ..31 @32 c
Veal, 7 to 10 lbs. ...33 @34 c
Calf, under 7 lbs. ..34 @35 c
Wet Salted, Steers ....17 @18 c
Cows .....17 @18 c
Kip .....19 @20 c
Calf and Veal .....22 @23 c
Bulls and Stags .....13 @14 c
Horses, dry, large .....$1.25@2.25
Sheep, long wool ..... 1.25@1.40
Medium ..... 1.00@1.25
Shearings ..... .45@ 55

LIVE STOCK.

(Prices, paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)
Steers, No. 1 .....7½@8 c
No. 2 .....7¼@7½c
Cows and Heifers, No. 1 6½@7 c
No. 2 .....5¾@6 c
Bulls and stags .....4 @5½c
Calves, light .....8½@9 c
Medium .....7½@8 c
Heavy .....6½@7½c
Hogs, grain-fed:
100 to 160 lbs..... 8¼c
160 to 175 lbs. 8½c
175 to 250 lbs. 8¾c
250 to 325 lbs. 8½c
Prime Wethers .....7½@7¾c
Spring Lambs, f. o. b.
country points .....$5.00@5.50
Steers .....12 @12¼c
Veals, large .....12½@13 c
Small .....13 @14 c
Prime Wethers .....13½@14 c
Spring Lambs .....16 @17 c
Hogs .....11 @12 c

WOOL.

(Prices paid in the country.)
Red Bluff, year's.....23@25 c
Sacramento Valley, yr's..19@21 c
Mendocino, year's .....25@26 c
Mendocino, 7 mos. .....22@23 c
Southern, year's .....21@22½c
Southern, 7 mos. .....16@17 c
Imperial Valley, year's...17@19 c
Imperial Valley, 7 mos. ..14@15 c
Nevada .....21@23 c

WEEKLY BUTTER AVERAGES.
Cents per pound for Extras.

Week Ending		San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan.	2	28.60	28.00		28.20
"	9	25.33	26.66	26.00	28.10
"	16	27.50	27.83	26.83	28.16
"	23	30.66	28.25	30.66	28.50
"	30	28.66	36.33	28.00	36.66
Feb.	6	26.68	30.25	26.80	32.33
"	13	26.74	31.40	27.00	33.25
"	20	29.00	32.00	27.16	32.00
"	27	29.10	30.90	27.00	35.25
March	6	27.00	24.08	25.25	24.16
"	13	24.66	29.91	24.00	28.83
"	20	23.00	28.33	22.50	27.16
"	27	22.91	28.50	23.00	28.08
Apr.	3	23.00	28.50	22.23	28.83
"	10	23.08	29.31	22.00	28.00
"	17	23.00	27.33	22.00	27.50

WEEKLY EGG AVERAGES.
Cents per dozen for Extras.

Week Ending		San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan.	2	38.50	35.60	42.00	35.00
"	9	32.66	31.41	35.16	32.00
"	16	31.00	30.33	30.33	30.75
"	23	30.50	34.83	30.00	34.33
"	30	28.16	36.33	26.66	36.66
Feb.	6	23.33	35.66	23.75	35.50
"	13	23.00	28.90	25.10	28.00
"	20	23.60	23.66	23.58	20.33
"	27	21.40	20.30	20.80	18.50
March	6	20.50	18.33	19.00	18.00
"	13	20.66	19.50	19.00	18.91
"	20	21.00	20.00	19.66	19.08
"	27	20.83	21.41	18.50	20.83
Apr.	3		21.75		21.00
"	10		22.00		21.00
"	17	22.00	21.16	23.08	20.91

Publisher's Department

A BOOK ABOUT GARDENS.

(From the Argonaut.)

Professor E. J. Wickson is the chief horticultural authority of California, and therefore any book from his pen should become indispensable to the garden lover and to those who would deserve success in the growing of flowers. Nothing indeed seems to be omitted from a volume that bears the marks of competence and thoroughness upon its every page. Professor Wickson divides his work into four sections. First we have "California Conditions," with chapters on climate, soil, etc. This is followed by "California Cultural Suggestions," with seven comprehensive chapters. Then comes "The California Garden Year," with detailed attention to the months, and then we have "California's Ways with Garden Plants," "Shrubs, Trees, and Vines," and "Plant Protection." It will be a long time before this useful book is superseded, since nothing could be more practical or satisfying.

California Garden-Flowers: Suggestions for Working Amateurs. By E. J. Wickson. San Francisco: Pacific Rural Press.

The Kerfoot-Jones Land Co. has just finished construction of an excellent well on their property in the Weed Patch district near Edison, California. They have equipped their new well with a Layne & Bowler shutter screen in all water-bearing formations, and found after same was installed that they were able to develop more water than the capacity of the pump installed. In order to produce all the water the well was capable of giving they installed a large Layne & Bowler turbine centrifugal pump and are obtaining excellent results. The Kerfoot-Jones people greatly appreciate their well for the reason that they have not been troubled with sand, which caused the loss of their first well.

Peter J. Gannon, near Winters, has just renewed his subscription to the Rural Press for the 46th time. Mr. Gannon has a copy of the first issue dated Jan. 4th, 1871, and thinks he is the oldest living subscriber. He is surely an enthusiastic supporter of the Rural Press and has almost every one of the copies, some of which are bound in book form.

I must say how much I appreciate the Press. The articles are all so timely and able and cover so wide a range. I have recommended it to my neighbors, but they all seem to be taking it and I could not get a new subscriber.—J. C. Galloway, Modesto.

Classified Advertisements.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

REBUILT GAS ENGINES from 3 to 50 h. p. Thoroughly overhauled and guaranteed. Write us your requirements. A FEW SPECIALS: 6 h.p. 2-Cycle Gas Engine, $125; 15 h. p. Field Gas Engine, $350; 35 h.p. Best Gas Engine, old but reliable, $200; 50 h.p. Otto Gas Engine, $900. Mechanical Installation Co., 181-89 Second St. Motors, Gas Engines bought, sold and exchanged.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogues. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

GAS ENGINES—I can furnish rebuilt Fairbanks, Morse, Otto, Peerless, Samson, Union and other good makes in al sizes. All investigators buy and all buyers are delighted. Pay when satisfied. J. J. Pottinger, 189 2nd St., San Francisco.

MACHINERY FOR SALE—One Junior Monarch Hay-Press, large bale; one Sandwich Hay-Press, small bale; one I. H. C. 12-25 Tractor. All practically new. Terms to reliable parties. Ceres Hardware and Implement Co., Ceres, Cal.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

IRRIGATION EQUIPMENT—For pumps, oil engines, gas engines, friction clutch pulleys, etc., write us. We can save you money. Commercial Iron Works, 481-497 Fifth St, San Francisco.

APPLES!—Buy direct from producer. Newtowns, 90c; Bulk pack, 4 and 4½ tiers, equal proportion. No. 2 grade for cooking, 65c. In 5 box lots 70c and 50c per box. Edwd. A. Hall, Watsonville, Cal.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

FOR SALE—Two 40 in. by 60 in. Russell Threshing Machines, with penumatic stackers. For particulars write to owner. H. P. Mohr, Amador Valley, Alameda county, Cal., Pleasanton P. O., Box 277.

FOR SALE—Used Ranch Tools, Windmills, pumps, engines, new galvanized tanks: 1000, $22.50; 2000, $32.50; guaranteed. Save half. Demmitt Company, 120 North Main, Los Angeles.

CONCRETE MIXERS—2 brand-new mixers at manufacturers prices. Write at once. Commercial Iron Works, 481-497 Fifth St., San Francisco.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds $3.00 delivered. Order with remittance, WM. J. SCHROTH CO., 112-B Market St., San Francisco.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

WINDMILL FOR SALE—16 feet power aermotor and 40 feet steel tower, A1 condition, at bargain. Ogden Bolton, Jr., Route 6, Santa Rosa, Cal.

FOR SALE—A well-stocked nursery in a good business location. 5318 Geary St., between 17th and 18th Aves., San Francisco.

SAMSON TRACTOR—4 H. P. has not run over ten miles. Price, $450. Kellegg Orange Acres, East Bakersfield.

TREES AND PLANTS.

NURSERY STOCK—None better. 2-year-old Navels, Valencias and Lemons, ⅝ and up, 25c, balled or packed in moss. Ask for prices on carload lots. J. C. Johnson, Azusa, Cal.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

PEDIGREED BURBANK FRUITING-FODDER—Cactus Plants. 100, $7.50; 1000, $45; 10,000, $300. El Campo Co., 227 Story Bldg., Los Angeles.

FOR SALE—Orange trees from selected two-year-old stock. K. Matsuoka, one mile west of Sanger, Cal.

PROFICHI FIGS, 1916 crop for sale. Limited quantity. T. H. Lynch, Box 21, R. R. 8, Fresno.

FOR SALE—Spineless Cactus Plants. Prices right. B. C. Engbert, Byron, Cal.

SEEDS AND BULBS.

WE BUY ALFALFA SEED containing Dodder, Mustard and other noxious seeds. Send us sample of any high or low grade seed you may have; also of mustard, burr and sour clover seed, flax, etc. Signed Mercantile and Warehouse Co., Fifth and Poplar Streets, Oakland, Cal.

SEED BEANS—We have choice Red Mexican and Buckeyes grown on sand land, producing a heavy crop. Well cleaned and in good order. Write for prices to THE GRANGE COMPANY, Modesto, California.

TEPARY BEANS FOR SALE—Eight cents per pound. Robert Paulson, Lockewood, Cal.

SEED TEPARY BEANS—Six cents. Haffenden Bros., Honcut, Cal.

WANTED.

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. R. Humphrey, Principal, Stockton, Cal., Box 704.

WANTED—A position as ranch superintendent. Qualified by experience and agricultural college training. Straight salary or salary with share in profits acceptable. Box 216, Pacific Rural Press.

LAND FOR SALE

DAIRY BUSINESS FOR SALE—60 head of cattle, consisting of 38 head of milk cows, 1 full-blood Holstein bull, balance young stock, horses, hogs, chickens, turkeys and machinery. Will sell part or as a whole. Located near Sacramento. Lease can be had if desired. Information of Lilly, 725 J St., Sacramento, Cal.

160 ACRES GOOD LAND—6 good springs, house, 60 acres plow land, balance fine pastures, near school, store, postoffice, in foothills, fine climate, $1600—$600 down. A few good Government land relinquishments, $400 to $700 cash. W. Wallace Baldy, Raymond, Madera Co., Cal.

DAIRY RANCH—Four miles from Sanger in the famous San Joaquin Valley. 126 acres on Kings river. Riparian right. Pumping plant, stock, farming implements. Good buildings, fences, etc. Wish to retire. Owner, Route 2, Box 44, Sanger, Cal.

FREE NEW WHITE BOOKLET—Tells "How," "Why," and "Where" of overlooked STATE, SCHOOL, GOVERNMENT and INDIAN Land Bargains NOW on market. Write JOSEPH CLARK, Sacramento.

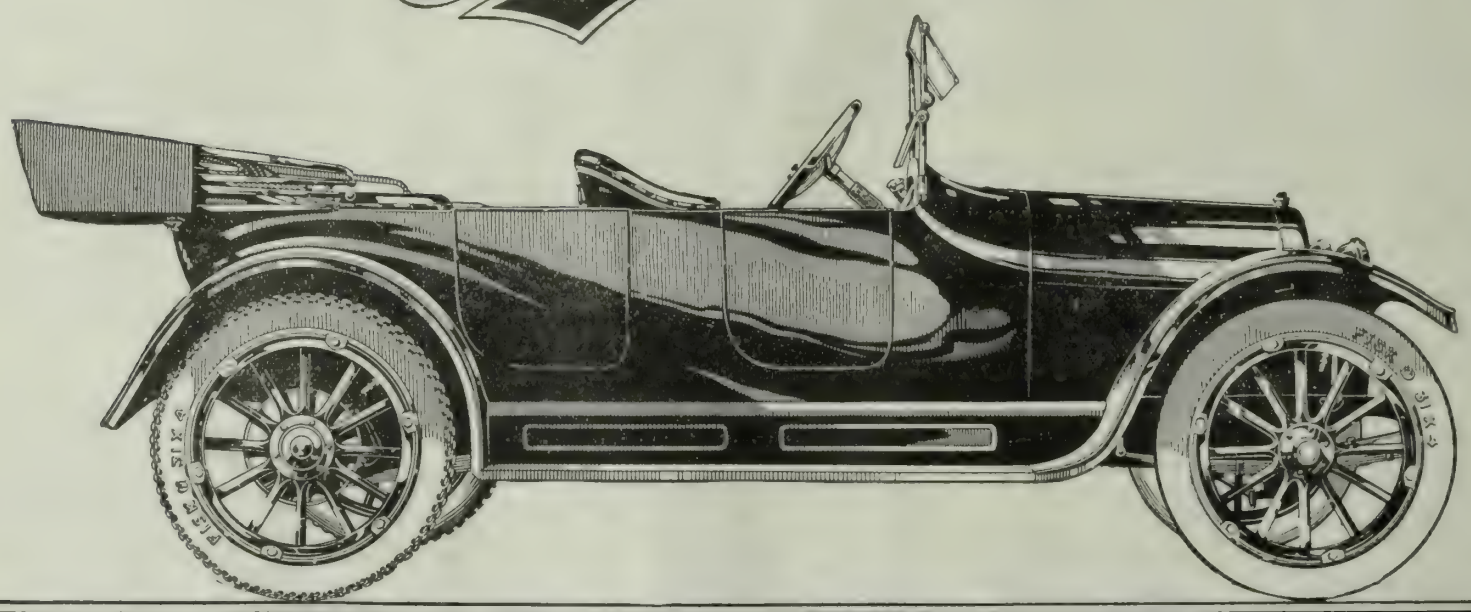
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Roadster $595

Model 75 - f. o. b. Toledo.

Overland

TRADE MARK REG



—so now there's no need to sacrifice pride to economy

This Overland costs only $615.

But it is every inch an Overland—a perfect beauty.

Though a small, light, economical car, it is roomy, sturdy and powerful.

And it is absolutely complete to the last detail.

Never before has a stylish, comfortable, completely equipped car been offered at anywhere near so low a price.

Now for the first time, exacting pride and strictest economy are fully satisfied in one and the same car.

And for easy riding this newest Overland is not to be compared with any other car of its size.

In fact, many a big, high-priced car is nowhere near so easy riding.

It has cantilever rear springs which absorb road shocks more perfectly than any other type.

Large four-inch tires add to its easy riding qualities.

And the seats are soft and deep and built up over long spiral springs.

The seats are also broad and wide—ample in their roominess for five full grown people.

Of course it is electrically lighted and started and the electrical control switches are located on the steering column—right at your hand.

You should have a car this spring—

And if you want top c ass at bottom price, it must be this Overland, for no other car meets both these requirements.

No wonder it has swept the country—the biggest and quickest success of all our long line of record breaking models.

But one thousand cars a day is the present limit of our production.

That is more than double the capacity of any other producer of cars of this size and class.

But the demand is in proportion to the excess value in this car.

Order yours now to avoid delay.

See the Overland dealer today.

Catalog on request—Please address Dept. 583.

The Willys-Overland Company, Toledo, Ohio

"Made in U. S. A."

Vol. XCI—No. 18 Firty-sixth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO APRIL 29, 1916. LOS ANGELES

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Efficiency in Fruit Picking.

Study this organization of picking to get sound fruit with highest economy. It is a practicable working plan with suggestions applicable in principle to all shipping and canning fruits.

[Written for Pacific Rural Press by Wm. Curtis Clark.]

THE idea that should be impressed upon every one of a fruit-picking gang is "handle the fruit like eggs." If every field foreman could succeed in getting every man under his supervision to believe that he is handling a frail-shelled egg each time he picks a piece of fruit for the green trade, he would accomplish as much for his fruit association as any other single unit in the organization designed to place that fruit, in perfect condition, upon the market.

No matter how low the intellect of the laborer may be, he can always get the egg idea, whether he be Mexican, Jap, or what not. To handle any class of men intelligently, they must know what they are trying to accomplish and why they must be careful. The time is past when a crew of men may be herded about the grove or orchard like a drove of sheep.

Piece Work—Poor Picking.—Picking by piece work and contract injects too much of the personal enrichment equation as against the production of undamaged fruits. It is a lazy man's method which temporarily offers freedom from the cares of organizing and conducting the work as it should be carried out. Posing under the mask of speed and economy, this method invariably results to the detriment of the marketable product and the ultimate expense of production.



"Fruit that is stabbed, slashed, bruised, jolted and squeezed will not reward careful fertilizing, cultivating, irrigating, packing, loading and cooling."

The height of efficiency is rather to be found in the well-trained crew whose members work on a flat wage basis, at a fairly uniform speed which is controlled by quality; quality being quite as essential as speed. A high quality-speed average marks a first-class picking gang, which offers the first factor important to the success of the association dependent upon its efforts.

Rotate the Handicap.—It is essential in order to systematize a gang, and to know what each man is doing daily, compared with his fellow-men, that every picker be given an equal opportunity to produce a day's work.

As an example, take a crew of say twenty-two men, placing ten men and a rover to pick five rows of trees on each side of a center-box aisle, allowing a ground man and a ladder man to each tree. It is apparent that if the same positions are kept continuously, some will be picking outside rows all the time, while pickers in the center have quick access to their boxes. The difference amounts to over two and a half miles in picking fifty boxes of oranges five rows distant from the boxes. This handicap destroys a fair check on the output of these men. To equalize this we change the position of the men on every new set of rows, moving the outside men in and shifting the inside men to the outside rows in succession.

Working the men in pairs, the ground picker can get more fruit with less effort than his companion on the ladder, so to equalize this, as the men move one row each time, they exchange positions with their companions, from ground to ladder and vice versa.

The diagram on page 542 is given to show the picker's change of positions.

Notice that the men keep the same relative position to each other, i. e., pickers (9 & 10) always follow (7 & 8) outward from the box row on one side, while on the other side pickers (11 & 12) follow (13 & 14) outward.

Notice that pickers (1 & 2) are picking the outside row going up, while in coming back they swing to the inside position next to the boxes and their position is also reversed with respect to the ladder work. On the other side of the box row the same thing occurs with pickers (19 & 20). The position of the rovers or line-helpers always remains unchanged as shown. The duties of these two men (21 & 22) are to keep the line moving in as nearly a horizontal position as possible, which requires their assistance on extra heavy bearing trees or in helping green men to speed up. These two men are selected from the crew especially for this purpose, because of their intelligence and good workmanship. Their example and understanding of the work is a help to the furtherance of the work.

Notice that the trees are numbered in the same order with respect to the box-aisle, and that the ladders are correspondingly numbered and likewise remain in the same position to the trees. When posi-

(Continued on page 542.)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., April 25, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	.45	37.28	41.90	66	38
Red Bluff	0	19.73	22.99	80	44
Sacramento	0	18.16	18.76	80	44
San Francisco	0	27.05	21.12	72	48
San Jose	0	16.30	15.91	78	38
Fresno	0	11.73	8.74	82	44
Independence	0	10.32	8.59	80	—
San Luis Obispo	0	26.85	19.14	86	40
Los Angeles	0	19.89	14.98	80	52
San Diego	0	12.54	9.46	72	54

THE WEEK

IS IT not a little humiliating to California to be celebrating Easter with Florida tomatoes and celery? The market-watchers report that three cars of Florida celery, the first to be shipped from that state to this, have reached San Francisco. Five full carloads of tomatoes, in addition to a large number of express shipments of this and other vegetables, have been received from Florida this season, but celery is a new item in this trade. It is quite possible to grow our own Easter tomatoes and celery, but of course work has to be done in a suitable place. The chief reason we are not doing it now is because our regular season for these things is so long that people weary of watching for gaps in it and to specifically fill them. For instance, we make three thousand carloads of export celery, about half from the Stockton and half from the Los Angeles district, run the cars into the fields, load celery without storage, and deliver it in the Eastern cities from Thanksgiving to Washington's Birthday, and then sit down to take a smoke while Florida runs in three carloads for Easter. We hurry to get out of the way of Florida celery at the East, and when she does get busy she slips one over on us. It does not matter, of course, except that some of our own people, not knowing about the three thousand carloads, hear about the three, and our little trade rival beyond the gulf rises before their eyes like a colossus. Our special celery growers do not pay attention to the local trade, the market gardeners give their time to other things, and our spring celery supply looks like the morning after. Those who have the right place and know how, can spring in celery from fall planting if there is chance enough for it to warrant the effort.

It is something the same way with spring tomatoes. In the almost frostless sunny mesas one can get plenty of open-air spring fruit from fall-planted, hold-over plants, with some little arrangements for cornering heat and averting chill. This, too, offers itself to the ingenious trouble-taker, who would like to do something a little different from the main crop.

THE WARRANT FOR SPECIAL EFFORTS.

CALIFORNIANS have neglected such little out-of-the-regular-season efforts because our population was too small to use enough stuff to make extra effort for extra pay worth while. The population of California is now between 2,854,727 and 3,004,000, according to the annual report of the State Controller. The United States census method gives the lower figure, and the school census method the higher. The rural population is placed at 837,781. The cities claim 2,450,181, but their claims are probably too high. Letting it all go at three millions for the present, for it will not long stay there, the fact grows that we are to have each year a better state for working out special, early or late, products for local use, and there is naturally a growing opportunity for our small farmers, whose fields are too small to run in railway sidings and load trains for distant shipment. And these little jags of tomatoes and celery which come in from Florida should be suggestive to them in another way also. It is to grow something which people know and which they definitely want, and get it to them when they want it worst. That is what Florida is doing to us now; cannot we do it for ourselves? On the contrary, our bright, little anxious ones, who have not strength or capital to get into the great, unique and distinctive products of the state by carloads, generally tackle us about yellow visions which they get from the papers and magazines, and are athirst to grow chicle for chewing-gum, or peppermint oil for stomach ache, or catnip to take wind out of babies, or something else which is difficult to produce and doubtful to sell—perhaps, because the world already has more than it needs of it. But good eating-vegetables, coming out when regular supplies are shy, always get close to the heart of a man, which is, proverbially, in his right-hand trousers' pocket. Florida is teaching us a good lesson.

CLOSE UPON THE PEACH!

THE authorized organizers of the peach-selling corporation issued their ultimatum at the Fresno meeting last Saturday, to the effect that if $33,000 is not subscribed and 3300 acres pledged by May 1st, the contracts will be returned to the growers. That much money and that many acres are needed to market the crop through the co-operative organization. Now, judging by precedent, the peach-growers ought to get 10,000 acres more signed up. The raisin corporation called for 15,000 acres and secured 45,000. The peach organizers might also get three times their demand, but it would be harder because the peach growers so far have had only suffering, and triumph to come. When the raisin-pullers caught three fish at a lick, they had undergone both suffering and victory; and, too, they had the whole community pulling on the line. But the peach organizers ought to understand that they, too, can claim victory in a way. We have heard that dried-peach buyers were out last week behind the back fence of the peach belt offering 5c.—and we do not know how much they have offered behind the front door. Now 5c. is about the minimum for good dried peaches, although it may look big to those who have had to give two pounds for a nickel lately. Is 5c. all a grower of good peaches ought to have? Of course not. He ought to have a lot more, even to twice as much, perhaps. What chance has he to get that? Just one, and that is to sell his own good peaches, properly cured, graded and standardized. Everybody says we shall have a good country to sell fruit in this year. Recently Mr. Virden, manager of the California Fruit Distributors, said: "Commercial conditions in the East at present are better than for some time; more people are working at good wages and more people will be able to purchase California fruits, hence it assures us of a good market." It looks as though the British cold shoulder might not cut much ice! Unless the peach growers wish the dealers to get more than they earn of this outlook, they will throw in those dollars and acres at once and give their organization more time to get at their job.

"SUPPLY AND DEMAND."

THESE two old economic cadavers still lie athwart the pathway of progressive producing enterprise, to trip the feet of those who would run therein. We get weary of discussions in which producers are exhorted to co-operate in selling and which close with these words: "Oh, but, of course, supply and demand determine prices." We protested against this deadly conclusion some time ago, but it is still being put out to divert or weaken public attention to fairer selling, and effort for it; or else the words are used, without any definite purpose, simply because they sound wise. They do not really fix prices because, first, as conditions, they are variable through all kinds of influences; and, second, because, as causes, they are not ultimate—so much so that they are truly rather effects than causes. Consider them, then, as effects; is it not clear that it is not supply and demand which determine prices, but the causes back of them which do it? Look at it this way. Why are the Sunkist people and the Sunmaid people spending hundreds of thousands of dollars to increase the demand for oranges, lemons and raisins by advertising? Is it not to increase the demand? And why are nurserymen and real estate dealers advertising fruit trees and places to plant them? Is it not to increase the supply? Is it not, then, more rational to say "advertising and planting fix prices"? Of course, it is, because that gives you a better idea of causes and shows, also, that "supply and demand" are not grand, automatic impregnable principles, nor are they causes of anything. They are effects; the causes are what you yourselves do or do not do. That is the reason why it always makes us sad and mad when we hear or read of someone worshipping those hoary stiffs, "Supply and Demand," as though they were all-powerful, economic gods! Kick them out of your pathway. You can make them both; therefore trust and worship your own power and acuteness, if you wish it, but not the work of your hands, which is idolatry! Get as near as you can to the first causes of things. In this case of "Supply and Demand," power over them is largely vested in yourself, and their dimensions are determined largely by your own wisdom, energy and enterprise.

WHAT FARMERS' SELLINGS DO.

THE habit of issuing monthly circular-letters on current commercial and financial affairs seems to be growing on our metropolitan banks. It is really a very good habit, for it brings to the eyes of many readers a substitute for the swim and slum stuff of the great dailies and bought to help make some people serious and sober. We find these bank letters very interesting, and we have them from great cities all the way from New York to San Francisco. We find that reading about millions of money is a sort of consolation for not seeing much of it. But, though these bankers' monthly letters are very inspiring and entertaining, they do sometimes set forth very antiquated notions. One which we recall, is combatting the idea that a lapse in our present great foreign trade would unsettle things in this country, with these words:

"Our foreign trade is certainly not more than 2% of our total trade, and it has been estimated as low as 1%. A farmer sells but a very small part of what is grown on his farm, just as we send abroad but a small part of what we produce, either in raw materials or manufactured articles. These small parts, however, are the most important parts; it is the small amount sold for cash by each farmer which keeps him going, and it is our export business, small when considered with our domestic business, which keeps us going and renews our supply of gold, aside from enabling us to buy abroad things which we are not able to produce for ourselves."

We presume the sketch of the relative importance of foreign and domestic trade in this country is all right, and it is also true that in the case of the most wholesome and unique foods which California produces, we can easily develop a much greater domestic trade, thereby enhancing our own prosperity and giving all Americans a better living. But what amuses us in the above quotation is the antiquated notion about the relation of the farmer to the farm, and both farmer and farm to the general domestic trade of the country. The writer evidently has heard something about the settlers' doings when the country was new, and when farming consisted of clearing timber, wearing home-spun, growing grub for the family, and selling something once in a while to get money enough for tea and taxes. It was then true that "a farmer sells but a very small part of what is grown on his farm"—but that was in the days of our great grandfathers. The enrichment and prosperity of the country are largely due to conquering land, not for family-feeding (though that is of very great importance, of course), but for the output of food products for non-farming classes in this country and for world-trade. In 1912 the value of the farm products of this country was about ten billions of dollars, and for twenty years the agricultural exports have reached an annual value of about one billion dollars. In 1910 there were twelve and one-half millions engaged in "agricultural pursuits," as owners or laborers—less than one-seventh of the population of the United States at that date. Therefore, one-seventh of the population fed the whole population of the country and had a surplus of a billion dollars' worth to send to other countries! Where, then, is there any warrant for saying that "a farmer sells but a very small part of what is grown on his farm"?

SHIPS COME SAILING O'ER THE SEA!

THE Panama Canal reopened this week and mariners can now approach, "by the horn around or the isthmus through," as they choose. Our main interest lies in the fact that there is restored to direct world-contact what President Ripley of the Santa Fe, the other day, called the only Pacific Coast port in these words: "The situation of San Francisco as a great seaport is better today than ever before. Its opportunitities are tremendous. So far as other Pacific Coast ports are concerned, it is the only one." It is proper, then, that such a port should now be building ships. It is currently reported that there are now being built at the Union Iron Works more ships than at any other shipbuilding plant in the world. The work is only approached by that of a plant in Japan. More than that, there are more ships under way than were ever before in hand at any yard at any time, twenty-eight vessels being in building. It is stated that less than 250 ships are now building in the yards of the United States, and California has, therefore, a very respectable fraction of them. All Californians should take pride and interest in shipbuilding, for ours should be among the first of maritime states; besides, all our land industries need ships. The way to get more ships is to talk about ships, to popularize them and their invaluable services to industry; so long as we think and talk only of shark-like owners, swaggering captains and mates with belaying pins, the interest in ships will not get much beyond the wharf-rats. And then we have a world duty in ships. The cable brings a word from the all-American conference being held in Buenos Aires that Latin America looks to the United States for the full development of inter-American relations, and this is impossible without an adequate American merchant marine. And this is true also of the full development of California.

Queries and Replies.

Querists must give name and address.

Polycaons and Black Twig.

To the Editor: I am sending leaves from a pear tree which are diseased, also a pear twig and the insect which bores into twigs at the bud.—A. F. W., Potter Valley.

The slim, cylindrical, black-brown beetles, a little more or less than a half-inch in length, are Polycaon confertus. It is often called the "olive twig borer" because fruit growers first found it in olive twigs, but more recently it has been found in very many fruit and perhaps other trees. It is a native and spends most of its time in dead wood on uncleared land, but it also takes to fence posts, old vine stumps, etc., and it seems to go to living fruit trees merely for feeding or for general cussedness. It tackles the twig at a dormant bud and tunnels downward and is often caught with his stern in the air. The beetle takes to small laterals and makes a bore large enough to cause the shoot to break off in the wind. On young trees this may be serious, causing loss of twigs which it is very desirable to retain. On older trees its work is negligible. Neither prevention nor cure has yet been demonstrated, though clearing up all kinds of dead wood, when practicable, would remove breeding places.

The blackening of the pear leaves and the little twig of new growth to which they are attached has some resemblance to the work of the pear blight, but is not surely that disease. Prof. R. E. Smith is now studying this form of die-back, but has not definitely assigned the cause. The rational treatment would be cutting below the injured part to a point showing healthy growth—just as in handling pear blight.

Why Sulphur, Not Sulphide?

To the Editor: What causes red blister-like eruptions on peach tree leaves? Are they a fungus and will liver of sulphur solution like that used for mildew check them? By the way, why is powdered sulphur always recommended for mildew when liver of sulphur is cheaper, more effective, more easily applied and not at all harmful to foliage? I have used both, but am now using the latter on roses, grapes, peas, etc., with the best of success.—H. B. B., Fullerton.

You have curl leaf on your peach leaves. It is caused by a fungus—Exoascus deformans. You are in luck to have a variety or a place where it does not get beyond an "eruption," for it has power to curl up, swell and kill the whole leaf. If it does not get beyond an eruption you need not bother about treatment, and if it is only an eruption as late as this, the chances are that it will soon disappear, having done no appreciable harm.

Liver of sulphur (potassium sulphide) is a very neat fungicide because it does not disfigure the foliage or spot growing fruit. But its effect is very fleeting. It will kill a spore which happens to be ready to be hit, but in a very short time it goes to pieces and will not affect later-developing fungus bodies. Sulphur, even in the minutest particles, will remain long on the leaf and generate, continually, fungus-killing vapor. One good sulphuring would work as long as several sulphide sprayings. Although sulphide can be used in weak solution (say 3 oz. to ten gallons of water) and is therefore cheap in first cost, the expense of sulphuring, with proper sulphur and a proper machine, is vastly less than the spraying which would serve the same fungicidal purpose. But neither sulphur nor sulphide will catch up with curl leaf. The proper treatment is to thoroughly clean the tree of spores before the buds open, either with strong Bordeaux or lime-sulphur, and even that will not prevent the disease if the variety is very susceptible and the spring air moist and promotive.

Walnuts and Olives.

To the Editor: Is it practicable to grow olives in between walnuts—the walnuts being 40 feet apart? My plan is to grow alfalfa in checks 40 ft. wide and grow the trees on the levees.—J. D. N., Modesto.

No; you have your walnuts at minimum distances for valley land and if you wish to try anything between, it should be an almond, peach, apricot, or shipping plum, or something else which would come to full bearing sooner than an olive. But, on the whole, if you wish walnuts at 40 ft. it would be better to be satisfied with the alfalfa as an inter-crop and give the walnuts a better growing chance—not to speak of the risk of unthrift to the olives standing in the bottom of an alfalfa check.

Good Almond Year Coming.

[Written for Pacific Rural Press by T. C. Tucker, Manager, Cal. Almond Growers' Exch.]

Such information as we have is always at your command, and in accordance with your request I am pleased to say briefly the following in regard to eastern conditions as I found them on the trip from which I have today (Apr. 18) returned.

In a general way business throughout the east seems to me at the moment much better than at any time during the past two years. I think this will apply to all lines of merchandizing. All manufacturing plants are working to full capacity and everywhere there seems to be a general air of prosperity.

It is too early to say anything regarding market conditions for the 1916 crop except that all indications point to a very successful year.

There are very few almonds carried over, either in the hands of retailers or wholesalers, and while the market at the present time is inactive, as it always is at this time of the year, still the feeling among the trade is that a very good demand for almonds is expected this fall. We, ourselves, have apparently now more orders than we can successfully fill if these are all confirmed in full. Of course, European conditions will very largely affect us, as the great bulk of the almonds consumed in this country are imported from abroad.

It is too early to make any prophecies as to market possibilities, except to say as far as the United States is concerned there is every likelihood of an exceedingly good market and good prices for almonds.

I find that the feeling of the trade towards California almonds is more favorable each year, as through the medium of organization we have been successful in promoting quality and in filling orders satisfactorily. Above all, the Association has been a big factor in the maintenance of price, which is just as advantageous to the buyer as it is to the producer, as it insures a satisfactory market and profit to both.

New Interior Markets.—We have expanded our market quite considerably by having representatives who are traveling throughout the interior of the country, making the smaller towns, and in that manner enabling us to place California almonds where they have not been heretofore used, direct.

The possibilities for California shelled almonds in the east are very good, and we look forward to quite an extensive business in that direction this season. We have, in fact, all the orders we care to accept for shelled almonds at the present time.

In conclusion, I believe that we are facing the most prosperous year we have had for some seasons, and I think we will see very good business conditions throughout the United States during the next twelve months.

PRUNING PEACHES IN FEBRUARY AND MAY.

[Written for Pacific Rural Press.]

"I have always pruned peaches early in the winter, and there have always been plenty that died back two or three buds." says C. F. Walker of Fresno county. L. T. McKnight of the same county has observed that if you prune early in the winter and happen to split the twigs more or less, they are very likely to die back several inches. He prunes his orchard in February; and, regardless of the size of the job, he believes it would pay anyone to delay and get extra help to do it all in January and February rather than earlier in the winter. The late pruning enables one to tell better the wood to be left. Sap flow will heal the cut; so it is best to cut just above a bud. Frank Henry, also of the same county, believes that under Fresno conditions of light soil, it is best to delay pruning until late May. He then thins out the growth, throwing the sap into fruit and into that wood which he expects to leave the following year.

"It is much less of a strain on tree or vine," says he, "to produce fruit than to produce an excess of wood to be cut off next winter. If winter pruning is practiced, the new growth from the cut should be thinned out in May."

HOGS AND ALFALFA AMONG APRICOTS.

[Written for Pacific Rural Press.]

Alfalfa, hogs, and apricots on the same land must pay T. A. Jenkinson of Hanford, or he wouldn't be continuing the practice followed for the past six years. The alfalfa is plowed out every two to four years from sowing. Purebred unregistered Poland-Chinas are pastured on the alfalfa the year around except three or four weeks during fruit picking. They have never injured the trees except to browse low-hanging, fruit-bearing branches. The alfalfa often requires an irrigation in May, whereas otherwise the orchard would not be watered until the crop is off.

Purebreds make better market hogs than others; as Mr. Jenkinson has observed that they are much bigger at the same age with the same treatment than even ¾-purebred hogs.



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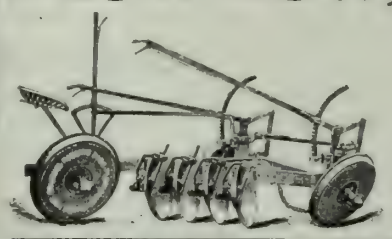
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ALFALFA FOR ORCHARD FERTILIZER.

[Written for Pacific Rural Press.]

Here is a splendid use for spoiled alfalfa hay.

"Our 20 acres of navels produced 5414 boxes in 1914 and 8730 in 1915, an increase of 3316 boxes. We lay the increase to the use of alfalfa as fertilizer," says W. A. Schaefer, manager for J. K. Lyon of the Redlands district. A bale per three trees was applied in the spring of 1914 and again in 1915. The first season it was chopped and worked in. That was too expensive so next year it was laid out on the ground and one man raked it into the furrow while another plowed. By the time of second irrigation the alfalfa had all disappeared. It had cost about $8 a ton; but according to Mr. Schaefer it would be as cheap fertilizer as could be obtained if it cost $12 a ton. Alfalfa tea, made by soaking alfalfa in water four or five days, beats manure, says he.

Dr. H. J. Webber.—"Alfalfa hay is about 2¼ per cent nitrogen," says Prof. Webber of the Citrus Experiment Station. If it costs $8 per ton the nitrogen in it costs $3.55 per unit, whereas in commercial fertilizer it costs $4 to $5 per unit.

"In applying alfalfa for fertilizer, however, you also apply potash, phosphoric acid, sulphur, protoplasm, and organic matter for humus.

"In alfalfa we have one of the strongest and best nitrogen fertilizers we can use. Food elements in hay become available two or three weeks after it is plowed under.

"I would like to see all the nitrogen fertilizer used in California grown in California. Perhaps alfalfa would best be fed to livestock and the manure applied to orchards, but citrus conditions are not convenient for that at present."

Atomic Sulphur for Grape Mildew.

[Written for Pacific Rural Press by Napa County Horticultural Commissioner J. J. Fox.]

In 1914 there was a 25-acre section in a 100-acre block of vines on the Stanley Ranch in Napa county so badly infected with mildew that the crop was practically a total loss.

In 1915 this 25 acres of Valde Pinots was sprayed with atomic sulphur—using 12 pounds to the 100 gallons of water. The amount of spray used was about 300 gallons to the acre, or ½ gallon to the vine. The vineyard is planted 6x12. Cost of material $2.75 per acre.

Fifteen acres was sprayed with atomic sulphur three times. The first was on April 27 (just before blooming). The second spraying was done 3 weeks after blooming and the third was July 20.

On this 15 acres there was no mildew.

The other 10 acres was sprayed April 28 and had one dry sulphuring after grapes had set and nothing more. The loss on this block was estimated by Martin Zanini, the foreman, at 15 per cent to 20 per cent from mildew. On an adjoining block where dry sulphur alone was used there was no loss. Mr. Zanini says that the weather was warm and still at the time the latter was sulphured, whereas it would have been useless to try dry sulphur at the time of the spraying, as the weather was cool and cloudy throughout. He favors the dry sulphur where weather conditions make its use effective.

As soon as a few gray specks appear on the leaves or on the end of the stems, if the weather be cloudy, then is the time when only atomic sulphur is effective.

I am indebted to Mrs. Bertha Coghill, manager of the Stanley Ranch, for the above dates and figures and offer them as a basis for further experiments by growers.

SUDAN AMONG PRUNES.

To the Editor: I have fifteen acres of three-year-old French prunes that have not been pruned this year. Please advise me whether I ought to let the trees go unpruned till next year, or prune them now.

Would you advise planting Sudan grass between prune trees and irrigating the grass? Is Sudan grass hard to eradicate, and is it possible to obtain its seed entirely free from the objectionable Johnson grass? Would you recommend Sudan grass as a good pasture grass?—C. R. H., Gilroy.

[If we pruned the prunes at all after leafing out, it would be only to thin out the branches that would have to be taken out next winter. We would not cut back any now, for that would stunt the woodgrowth which is most desirable to make a big tree at an early age. Sudan in the middles, some distance from the trees, might be good if you have plenty of water. It is good for hay, not pasture. It dies a natural death; and pure seed can be obtained from our advertisers.—Editors.]

WATER FOR RED SPIDER.

To the Editor: I notice in Pacific Rural Press a good many inquiries as to what will stop red spider. I have noticed that a shower of rain always puts a stop to the work of red spider and have on a couple of occasions recommended spraying with water, and it worked all right.

Atwater. **W. R. Davis.**

[Yes, water will check red spider; but to spray, even with water, the number of times required to keep up with the pest will cost more than to use sulphur dry or to put on a sulphur spray which will put sulphur on the leaves where it will vaporize continuously and keep on killing spiders. A water spray cannot do this.—Eds.]

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Do you own an orchard? Or are you going to plant one?

If so, you will find information worth many dollars to you in the Giant TREE BOOK, "Better Orchard Tillage." This book is written especially for Pacific Coast fruit growers. It tells how to have thriftier, faster-growing, earlier-bearing trees by planting in beds blasted with

GIANT FARM POWDERS
STUMPING — AGRICULTURAL

It tells also how to secure better drainage and increased moisture-storage capacity in established orchards, and how to get larger yields and save money on fertilizers.

The book contains illustrations that show exactly how to do the work. There are chapters on preparing the beds for trees and increasing the plant food by deep tillage. Also there are directions for blasting in established orchards or groves, and interesting letters from many prominent fruit growers.

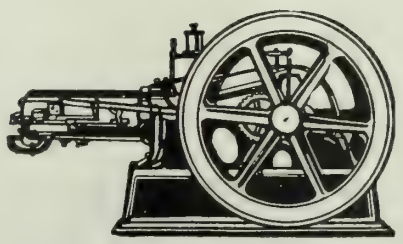
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Fruit Picking Efficiency.

(Continued from page 537.)

tions are changed the ladders are carried to the corresponding new rows by the men who have been using them, ready for their new users.

This arrangement of the gang prevents any picker from offering the excuse that he is handicapped in producing as good results are are obtained by the other men. The foreman's work is very much simplified; therefore he is able to handle a larger gang. After the first few rounds the men place themselves automatically in the proper positions. The foreman is principally located in the center of the picking line where he can devote a great deal of his attention to examining the fruit placed in the lug boxes. He can keep a check upon the trees for unpicked fruit without waiting for stragglers to finish their work. He can step to any picker whose poor work he has discovered from the examination of the fruit in his box and show the damage being done, without wasting time. The gang finishes its work on a set of rows as a unit and there is a minimum waste of time in shifting to a new set.

1st Ten Rows (up)

R-1	R-2	R-3	R-4	R-5		R-6	R-7	R-8	R-9	R-10
L-1 (0)	L-2 (0)	L- (0)	L-4 (0)	L-5 (0)	BOX AISLE CENTER	P-11&12	P-13&14	P-15&16	P-17&18	P-19&20
P-1&2	P-3&4	P-5&6	P-7&8	P-9&10		L-6 (0)	L-7 (0)	L-8 (0)	L-9 (0)	L-10 (0)
P. 21 Rover						P. 22 Rover				

2nd Ten Rows (back)

R-1	R-2	R-3	R-4	R-5		R-6	R-7	R-8	R-9	R-10
L-1 (0)	L-2 (0)	L-3 (0)	L-4 (0)	L-5 (0)	BOX AISLE CENTER	L-6 (0)	L-7 (0)	L-8 (0)	L-9 (0)	L-10 (0)
P-1&5	P-6&5	P-8&7	P-10&9	P-2&1		P-20&19	P-12&11	P-14&13	P-16&15	P-18&17
P. 21 Rover						P. 22 Rover				

3rd Ten Rows (up)

R-1	R-2	R-3	R-4	R-5		R-6	R-7	R-8	R-9	R-10
L-1 (0)	L-2 (0)	L-3 (0)	L-4 (0)	L-5 (0)	BOX AISLE CENTER	L-6 (0)	L-7 (0)	L-8 (0)	L-9 (0)	L-10 (0)
P-5&6	P-7&8	P-9&10	P-1&2	P-3&4		P-17&18	P-19&20	P-11&12	P-13&14	P-15&16
P. 21 Rover.						P. 22 Rover				

Abbreviations: 0—tree; R—row; L—ladder; P—picker.

Performance Records. — The men are supplied with chalk for numbering their boxes. The foreman notes in his time book the daily performance of each man for number of boxes and quantity, also thoroughness in picking all available fruit. A man who cannot reasonably qualify on all three of these points cannot hold his job, as they are all essential to good work.

With this system a foreman should be able to examine the individual fruits in three or four lug boxes of each member of the gang every day, and by taking the average number of fruits to the box and the number of damaged fruits found he has a percentage check on the quality of the work.

Where the situation is favorable a premium or bonus may be given for good work covering the season or desirable prizes may be offered for the best work during the month. As the foreman has a cinch on the work there is little chance for any but the best men to profit from the results of good effort.

In addition to the regular work of the rovers, one of them assists in loading the packing house wagon and in a short time becomes so expert in swinging full boxes of fruit upon the wagon-bed that there is scarcely a sound, which of course means that the fruit is being handled carefully; also if necessary he replenishes the drinking water for the gang, while the second rover extends his work over the entire line.

For the purpose of quickly erasing chalk numbers at the packing house and to facilitate the foreman in checking the boxes, the men should place their numbers in the upper right-hand corner of the boxes.

The boxes should always be stacked under the shady side of the trees where they may be protected from the sun by the tree foliage, five or six boxes to the stack. Empty boxes should always be turned over and tapped on the bottom to eliminate any gravel or foreign matter that might indent the fruit skins.

Quietness and Efficiency. — The fruit should always be emptied from the picker's sacks into the boxes carefully, which means without noise or thumping on the box bottoms. If the crew works quietly without un-

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The above results and other desirable qualities are found in the **Oliver No. 1 Cultivator.** A study of the two sketches, shown below, should prompt the reader to send to the

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for circulars giving full particulars about thorough cultivation of plants in various widths of rows.

The **Oliver No. 1 Cultivator** is a California Cultivator. Everyone knows that a tool which has been designed for the lighter soils of the Eastern States seldom works in California heavy soils. The Oliver Cultivator succeeds in California where other kinds fail.



THE OLD WRONG WAY. THE OLIVER RIGHT WAY.

necessary chatter and noise the foreman is greatly aided in hearing careless work in this respect as well as the wagon-loading. An efficient crew works quietly in the grove or orchard; in fact it may be said that a quiet crew is nearly always carrying on the work efficiently. In this connection it is often necessary to place especially sociable members separate from each other; and this is very easily accomplished where fixed positions are maintained.

It is advisable to establish the "no smoking" rule, as it is impossible to protect a cigarette and get all of the fruit growing inside of the trees. It is sometimes surprising to notice the amount of time that can be consumed by nonchalant workmen in rolling their "makings."

The packing house wagons should be supplied with a canvas tarpaulin to cover the load from the hot sun, especially when the fruit has to be hauled a considerable distance to the packing house.

The men very quickly know that the boss knows what he is about, and if the boss takes pride in having the work right it usually has a good effect upon the spirit in which the work is conducted.

Getting the fruit off the trees and to the packing house properly is one of the most important steps in bringing the article to the mouth of the consumer. Fruit that is stabbed, slashed, bruised, jolted and squeezed will not reward careful fertilizing, cultivating, irrigating, packing, carloading, and cooling. As much attention should be given to carefully organized field work as to the arrangement and management of the packing house and marketing features and where it is practiced the reports returning from market examination will probably be excellent.

UNIVERSITY FARM PICNIC.

[Written for Pacific Rural Press.]

The biggest event in the way of a farmers' picnic yet held in California was that of the State Farm at Davis last Saturday. Estimates of the attendance range all the way from 6,000 to 16,000. The location is easy of access to farmers from the big valleys and the bay section, the day was ideal, the farm had been slicked up till it looked like a gentleman's private park, and the hosts (350 young men) were on the job at every point and all the time.

The outstanding events were the speeches and athletic events in the morning; noon day lunch, followed by a parade which included all of the fine livestock kept on the farm and a dozen or more beautifully gotten up floats; then more sports,—the day closing with dancing in the evening.

To one who went on an investigating tour of the farm there was much of interest to keep him busy during the day. The splendid beef and dairy stock as well as hogs and sheep and the quarters where they were kept, constitute the largest and latest department of the kind in the west. The poultry plant, which contains over 4,000 birds, has everything that a poultryman would want to see. The big creamery and cheese factory, the animal husbandry building are places of great interest. In the machinery building as well as the irrigation division all of the latest and best implements and devices are being shown and experimented with. Agriculture in the several divisions as well as horticulture in nursery and orchard seem to be thoroughly equipped to carry out the thousands of experiments under way.

But to the writer the best exhibit of all were the 350 young men students, who had full charge of the picnic, who secured its publicity and finally took charge of the crowds and made the great success. This body of young fellows, enthusiastic in their work and glad to show it to the visitors, were organized into a working unit that meant preparedness carried to the nth degree, were the motive power that made the day a success. This young blood, properly trained, means great things to the future of agriculture in California.



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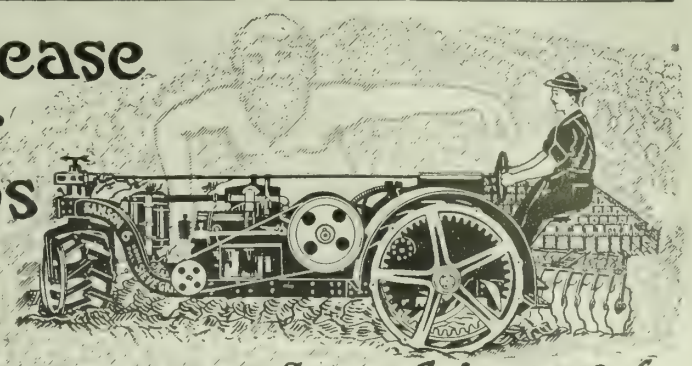
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When a smelter buys gold ore he buys not merely two thousand pounds but he insists on knowing how much gold is in the ore, and you should know the amount of active nitrogen, which is the gold of the fertilizer.

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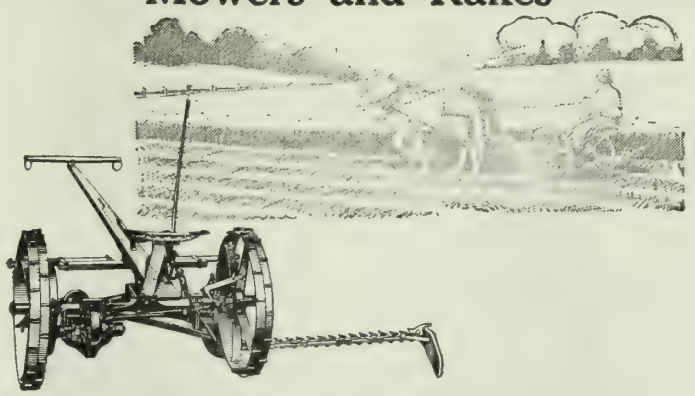
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Mechanical Power on the Farm.

TRACTORS IN TEHACHAPI VALLEY.

[Written for Pacific Rural Press.]

In the Tehachapi Valley, which has been grain-farmed for half a century and is now being set out to fruit, the big tractors are beginning to be supplemented by orchard tractors. A Creeping Grip 16-8 is used on the Hayward orchards.

A 4-5 h.p. Samson Sieve Grip takes care of 200 acres of nearly level orchard owned by the Tehachapi Fruit and Land Co. But about 75 acres in 10 hours.

Wholesale Seeding of Grain.—A railroad rail is bolted across near the front of the tractor, and a drill with its harrow hung by a chain from each end, one on each side of the tractor. A drill hooked behind the tractor sows the center. The rail is supported also by a chain from its ends to the front of the outfit. The turns are always made to the left so that a marker can be used. The mark is made where the edge of the track should run; as this is easier than watching the center



Did you ever see a better job of plowing? Mogul 8-16.

C. T. McKinnie of the Land Co. advises a larger factor of overpower. In fact he uses teams on the rolling orchard, though well pleased with the performance of the little tractor.

At this altitude a tractor loses efficiency, but this is overcome in the Samson, by a special plate on the piston "to give greater compression."

On a Grain Ranch.—One of the big tractors is a 75 h.p. Caterpillar used on the Ramina ranch. It burns about 30 gallons of distillate per 10 hour run in which it plows about 40 acres during the night, according to L. M. Anderson who has immediate charge of the ranch in the absence of Mgr. J. W. Jennings. During the daytime it pulls three grain drills followed by harrows, sowing ahead. The outfit sows a strip 36 feet wide. Some of the fields take three miles per round. The sacks of seed are distributed ahead at about the proper places.

Operators are protected from sun and wind by curtains. A front and rear light are used. A bell run by a cord to the plow enables the plow tender to signal for starts, stops, and speed regulation.

A master mechanic is kept all the time and is held responsible for all machinery. In idle times, the engine is overhauled, bearings scraped, and repairs made. It is kept in shape, for there are 3500 acres of plowland to be cared for in a very short season, and they can't afford any breakdowns.

Makes Better Farming.—Though purebred draft horses are raised on this ranch, and worked, there is enough for them to do without attempting the grinding work of plowing, harrowing, seeding, and pulling the combined harvester.

An effect of the tractor for better farming is seen in that until last year, Mr. Anderson says they have been skimming the ground; now they are plowing it; and that 7 inches deep for grain.

UNPLOWED ORCHARD SOIL.

[Written for Pacific Rural Press.]

Late plowing is more desirable than early, from many standpoints, for orchards and vineyards especially; but where water is not available and nature disappoints us as she has this spring, there is need of a strong suitable plow for the hardened ground, and sharp disks or cutaway harrows to work the clods down.

Unless at least the surface is fined there will be such loss of water, both from the cloddy soil and from

Snow Portable Deluge Hydrant



As Used With

The Snow Ideal Alfalfa Valve

This combination forms a most perfect arrangement for the handling of large quantities of water used in field irrigation.

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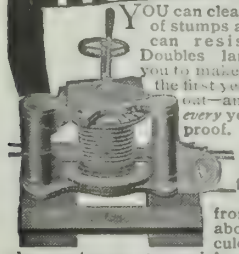
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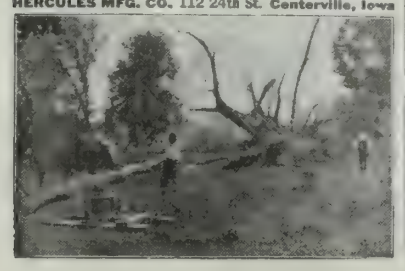


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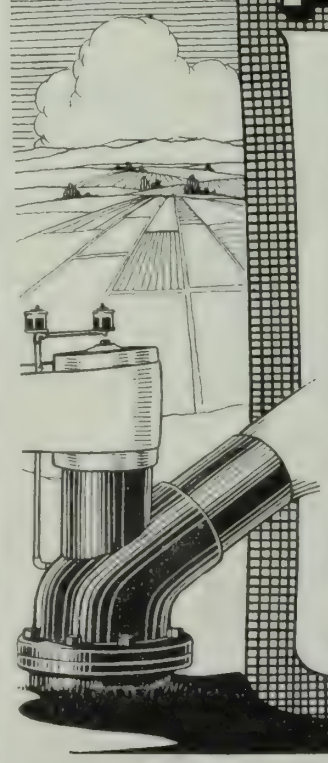
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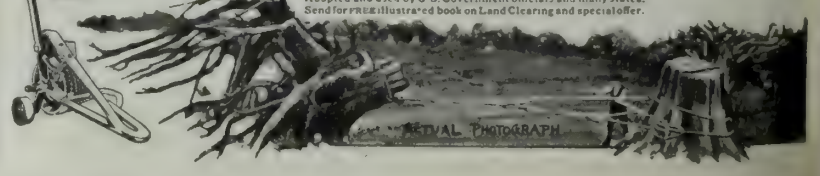
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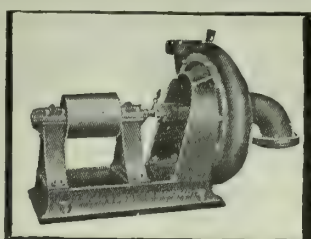
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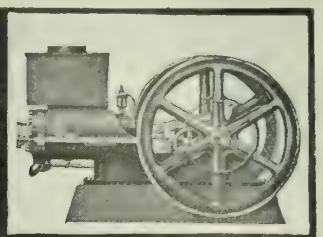
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the exposed subsoil, that trees or plants will suffer.

But not only the surface should be fined, but the clods underneath, and this can be done best by thorough disking before plowing.

Needless to say, plowing hard ground in warm weather is a better job for a tractor and a plow designed for the purpose, than to maltreat good livestock.

WARMS PUMP WATER FOR RICE.

[Written for Pacific Rural Press.]

Warm water for rice irrigation gives much better results than cold, in the estimation of the Tweed Ranch and Land Co. of Willows, who are putting in a large acreage as a result of their previous two or three years' large scale experiments. For this reason they pump into a large reservoir to warm up the water some before running it onto the rice.

Mr. Tweed uses a 35 h.p. motor to pump from four connected wells. Three of these are about 40 feet deep. The other, put in last year, has a 16-inch casing and is about 200 feet deep. It gives a constant stream.

Besides warming the water for better growth, Mr. Tweed prides himself on his immunity from water-grass, the seeds of which cannot float onto his place through public irrigating ditches. Of course he takes particular pains to sow only such seed as is free from red rice or water grass.

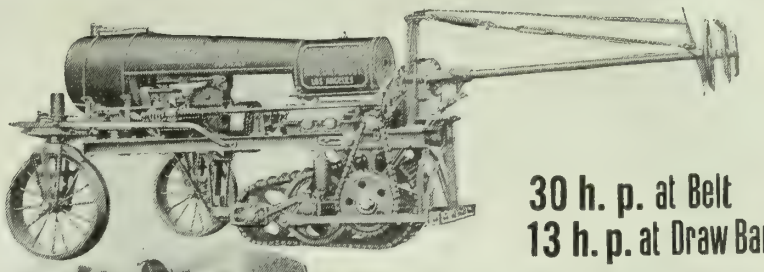
POWER SPRAYER FOR GRAPES.

[Written for Pacific Rural Press.]

A little power sprayer with a 1½ h.p. engine sufficed Geo. A. Ritchie of Kings county for his vineyard spraying last year. But the demands not only of his own vines, but those of his neighbors, led him to buy for this season a Bean Triplex Sprayer of 200 gallons capacity, four lines of hose, and a 2½ h.p. engine. Besides running the sprayer, the engine pumps water in four minutes from a tank wagon to fill the sprayer. It uses only ¼ pint of oil per day of 10 hours, and three gallons of gasoline, according to Mr. Ritchie.

With the small two-hose sprayer he has sprayed 200,000 gallons. It took a day to spray 10 acres of vines set 10x10. With the big one, he has sprayed 2200 gallons between 7:15 a. m. and 4:30 p. m. with an hour off at noon. This was on 15 and 17 year peach trees.

A new book of distinct value to California vegetable growers is the new book, "Subtropical Vegetable Gardening" by P. H. Rolfes, director of the Experiment Station of Florida. All important vegetables are included in the discussion, including those with edible leaves, stems, bulbs, fruits, tubers, roots and seeds. The book is cloth bound, illustrated, and contains 300 pages of text, and is published by the Macmillan Company of New York. Price $1.50 net.

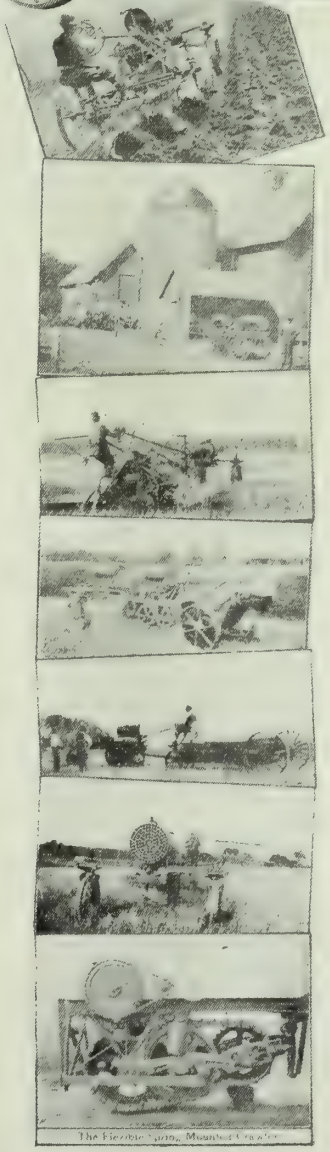


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General Agricultural Review.

GRAINS AND FIELD CROPS.

There is a grain bag famine.

Rice planting in Yolo county is humming.

Mid-April frosts injured potatoes in the delta district.

Delta alfalfa is being sold at $10 per ton for first crop.

England has ordered 1,500,000 bags of rice from U. S.

The Cross Creek section of Kings county is producing much grain this year.

Bean planting is beginning around Saticoy. The acreage will be about 11,500.

The Turlock Merchants and Growers have four times as many contracts as last year.

New alfalfa hay is coming to San Francisco three weeks ahead of last year's first shipments.

Nineteen boys in the Salinas High School Agricultural Club have signed up to grow beans.

Five cars of rice were recently shipped from the Wasco district to Louisiana at 2 cents per pound.

Ventura grain and alfalfa acreage is about the same as last year, according to farm adviser W. B. Parker.

The California bean holdover to date is reported at 450,000 sacks, about ¼ of the crop of last year. These are mostly limas.

Despite all efforts, the cotton boll weevil has made notable advances into new territory all along the line. California is still untouched.

Potatoes are being dried for flour at Middle River, San Joaquin county. The plant is being doubled from its previous maximum capacity of 25 tons of potatoes per day.

Grain acreage in Solano county is less than last year, and there will be a small grain hay crop though a larger per cent will be cut for hay than last year, according to Farm Adviser J. W. Mills.

Pink beans, blackeyes, and Mexican reds should not be planted in Stanislaus county before June 10 on account of hot weather of August destroying blooms, according to Farm Adviser C. M. Conner. Late planting also helps avoid spiders, aphids, and thrips.

The Larkin Farm Center had an attendance of 300 recently to discuss grain elevators. They favored it after A. E. Lindstrom, who owns stock in several elevators, told them that for $6,000 they could build a 40,000-bushel elevator which would handle 1,000,000 bushels a year and save $50,000 for sacks.

The heavy rains of Jan. and Feb. almost drowned the grain in Butte county; a lack of rain since has combined to reduce the crop considerably. The straw being short, much that would have been made into hay will be cut for grain. "I believe there will be 70 per cent of a crop," writes Horticultural Commissioner Earle Mills.

DECIDUOUS FRUITS.

First Chico cherries ripened April 20.

Muirs are reported as a heavy crop near Madera.

Pear scab is showing up pretty strong in Napa county.

Sutter peaches are estimated at 75 per cent of normal.

Sonoma prune growers are holding for 6 cents for the new crop.

Canning peaches are reported only ¼ crop in the Gridley section.

Southern packers are negotiating to run the Porterville cannery.

F. S. Jones of Green Valley, Solano county, has sold his cherries on the trees for $22,000.

A 10-pound box of cherries shipped from Vacaville by F. B. McKevitt are said to have sold for $100.

The State fruit standardization law is effective this year on almost all fruits shipped out of the State.

A national general fruit standardization law is being worked upon with especial reference to ripeness.

There were about 44 per cent more apples in storage April 1 than a year ago, according to the U. S. Dept. Agr.

The Placer County Growers' Canning Association put out 60,000 cases last year, a 50 per cent increase over the year before.

Bellflowers in the Watsonville district are almost a failure as reported by our representative. The Newtowns are better.

A few peach rows which Wm. Owen of Atwater could not spray this spring are badly affected with curl leaf, while the rest is free from it.

John C. Rorden is offering to warehouse spot peaches to be turned over to the new Association. Growers can borrow money on these warehouse receipts.

Fruit growers of the Mt. Vernon and neighboring districts in Placer county organized and recently completed a fruit shipping house. Now the Earl Fruit Co. is planning another.

Butte county canning-fruit growers are investigating the plants of the California Growers' Ass'n in Tulare county, preliminary to es-

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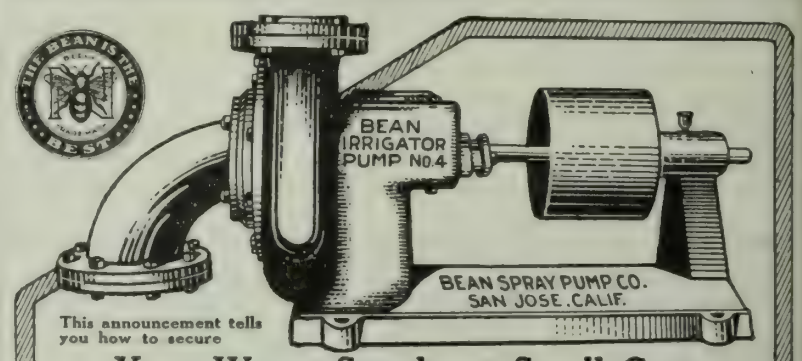
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The Bean Automatic Water Balance eliminates end-thrust, thus saving much trouble.
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and get one of these dandy little R & V Engines. This well-known concern handles all styles and sizes. In addition, they handle pulleys, belting, spraying, farm and orchard machinery supplies, Moline automobiles, accessories, tires, tractors, etc. In connection with their business, they have one of the best machine shops in the city, where ranchers can get all kinds of repairing done.

tablishment of a local, probably at Gridley.

The $39,980 still left to be subscribed before the Peach Ass'n can do business at all, was reduced by $6,270 at a Fresno meeting April 22 and a number of farmers and business men volunteered to canvass during the present week.

President F. S. Jerome, in making his report to the Watsonville Apple Distributors, after showing the great good done, said that if 90 per cent of the Valley's apples had been included, $500,000 more would have come from the crop.

Napa horticultural commissioner J. J. Fox reports 194,569 trees planted the past season. Of these 138,619 were prunes, 17,412 pears, 14,851 almonds, 10,269 apples, 9,837 plums, 4,455 cherries, 3,958 peaches, 1,916 walnuts, 1,728 apricots, 462 oranges, 408 lemons, 229 quinces, 165 olives, 146 figs. About 35,726 vines were set out, 28,000 berries, and 294,569 seedlings.

The Prune and Apricot Growers' Information Bureau reports less than 50 per cent of a prune crop for the State as a whole and still less for apricots. Offers are made of 5½ cents for spot goods. An estimated 20,000,000 pounds which have been sold short are not covered. Offers made of 9 and 10 cents for dried apricots and a 200-ton Ventura crop was recently contracted on the trees at $35. The Bureau believes that $50 is right for green fruit and 12½ cents for dried. Forty dollars is offered freely for pits.

CITRUS, OLIVES AND NUTS.

Tulare county Valencias are estimated as 80 per cent of normal.

Manager R. A. Powell of the Tulare County Growers' Ass'n reports all their fancy 1915 olives sold.

The Lindsay Olive Growers' Ass'n elected W. B. Kiggens president and R. W. Fenn secretary.

E. M. Chace of 8 to 1 orange fame is reported to be working on a maturity test for cantaloupes for the U. S. Dept. Agr.

The California Olive Growers' Ass'n held an all-day meeting in San Francisco April 24, at which several matters were earnestly discussed. Most of the upper California olive districts were represented.

The Cal. Almond Growers Exchange representative in Spain writes that premature springlike weather developed the almonds too far and that this was followed by rain, cold storms, and hurricanes.

Green olives which by processing have been made to appear ripe and which are labeled or sold as ripe olives will be regarded by the State Bureau of Foods and Drugs as mislabeled under the Pure Food Act.

The Fair Oaks and Orangevale Almond Growers' Ass'n on April 22 elected directors as follows: C. D. Levering, Jos. Radke, G. E. King, J. F. Ricketts, of Fair Oaks, and Vey Cramer of Folsom. The members expressed appreciation of the methods of the State Exchange.

GRAPES AND SMALL FRUITS.

A Live Oak strawberry breeder has developed a promising strain.

Sutter county grape growers met April 22 to learn from University professors how to handle phylloxera and mildew.

California tolerance of ½ strawberry variation in capacity per box has also been adopted by Utah so interstate shipments may take place.

A large percentage, perhaps half, of the crop of Tokays in the Lodi district are already under contract to people supposedly acting for Eastern fruit dealers.

Canned seeded raisins packed by the Armona cannery reach consumers without sugaring or drying out. An order has been received for 12 carloads to be delivered to Chicago as soon as possible.

Our Fresno representative reports that the strawberry growers of Fresno county are getting a much better price this year than usual—$1.40 for 25-basket crates and $1.25 for 20 baskets. There are two Associations, one of Japanese, one of white berry growers.

MISCELLANEOUS.

A movement is started by the Visalia Board of Trade for a farm adviser.

Scott's Creek in Lake county is to be diverted to save swamping of Scott's Valley.

Lippia grass for dry lawns is endorsed by Phoebe Hearst, who lives in the hills near Pleasanton.

Princeton, Colusa county, farmers are hoping to organize an 18,000-acre irrigation district.

Honey Lake Valley is organizing an irrigation district to include 37,800 acres. Skeedaddle creek will be one of its boundaries.

The Pacific Gas and Electric Co. has put into effect an elaborate system of pensioning employes after 10, 15, and 20 years of service.

Glenn county fruit growers are trying to get an assistant horticultural commissioner to keep fruit pests from their new plantings.

Plant lice may be destroyed by spraying with 1 pint blackleaf 40 and 1 gallon of liquid whale oil soap mixed with 200 gallons of water.

County supervisors are being asked to post cardboard warnings against throwing lighted tobacco and matches into dry roadside grass.

To protect western white pine forests from blister rust, the U. S. Dept. Agr. is asking eastern nurserymen not to ship pines, currants, and gooseberries west of the Missouri, so that a quarantine will not have to be imposed.

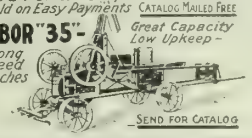
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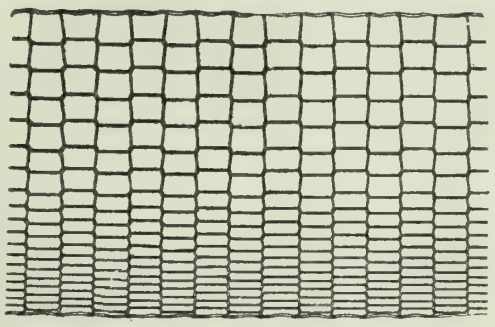
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—Only best Number 9 and 12 gauge wire used, fully galvanized. This price applies in 20 rod rolls.



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—Another evidence of buying in quantities impossible to small dealers. Roll rim sinks, just like the picture, white enamelled inside and deep blue enamelled outside. Made of best pressed steel. We've sold thousands and despite the war are able to quote the low price of $1.00

Enameled Steel Bath Tub. Our Famous Special. $8



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larger sizes, $8.50, $9 and $10.



Low Down Enamel Steel Toilet Combination..... $11.50
Complete to floor—wonderful value.

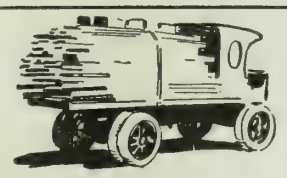
Low Down Vitreous China Closet Combination..... $15.50
Special value—worth $22.50

Big value in High Tank Toilet Combination $11.50
Complete to floor—a bargain.

Special Bankrupt Stock of Kitchen Sinks. All sizes— from..... $1.00



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Standard House Paint $1.50

—Regardless of the increased price on paints we are still able to quote you our old prices on the famous Standard and other paints.

—Standard House and Floor Paints, $1.50 per gal.

—Standard makes of varnishes at 25% off regular prices.

Everything in Paints, Wall Tints. Brushes, etc., at big savings to you.

Dutch Kalsomine, 4½c per lb.
Black Graphite Roof.—per gal.*.....50c
Standard Roof Paints—red, green, gray — per gal.* 85c
Shingle Stain, made from pure ground colors per gal 50c
*In 5 gal. lots only at this price.



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A Jersey Sale That is to be Different.

[Written for Pacific Rural Press.]

Will the auction sale of the future be the auction sale of the past in California? Such is the question that is being raised in breeding circles all over the State and the general impression seems to be that unless breeders take a decided stand on quality of consignments and methods of ring managership, little improvement can be expected.

Experience is rapidly showing that poor animals cannot be sold through the auction ring to any better advantage than at private sale; and that to be successful, an auction sale must be conducted on the same high level as the modern breeder pursues in selling animals at private sale.

These factors were seriously considered by the owners of the Rancho Dos Rios herd of Jerseys before deciding to hold a public sale and it is gratifying to learn that they expect to conduct their sale a week from today in the same trustworthy manner that has been characteristic of their dealing with the public for the past 44 years.

They considered that the average buyer at an auction sale is in search of females; and with the exception of a very few high-class bulls they have made up their offering accordingly.

They believed that the buyer not only wanted females but also known production capacity and breeding qualifications. As the chief reason for holding the sale was to make room for a large number of heifers which are about to freshen, they are able to insure both production and breeding ability, most of the cows having been selected from their milking herd and either being fresh or in calf.

No Disease.—None of the animals either in this sale or on the farm have ever been affected with contagious abortion, which is a big consideration to the buyer of dairy cows today. They have all passed the tuberculin test within the last few weeks. It is expected that this will be of particular interest to dairymen at this time as a result of the new dairy laws which go into effect the first of October.

Those desiring to establish foundation herds of either purebreds or grades can select an entire foundation herd of practically the same breeding. This herd has been established since 1868, being the oldest herd in the State, and as a result there is a uniformity in breeding as well as in conformation.

Because of the fact that Jerseys have not sold at anywhere near their actual value during the past few years in this State, the owners are not expecting fancier's prices. With the general awakening of Jersey interest all over the country though, it would seem that this was a most opportune time to lay foundation herds of this well-known breed, at a ridiculously low first cost.

Headquarters will be maintained at Modesto, where visitors from a distance can secure information regarding conveyances to and from sale. The auction itself will be held under an immense big tent, and seating capacity will be provided for several hundred people.

The sale will be conducted by Col. Ben A. Rhoades of Los Angeles, who will be assisted by M. P. Keppford of Modesto.

There will be no by-bidding. Every animal will be knocked off to the highest bidder regardless of price. Taken altogether, the sale should be a good place to buy high-class dairy cattle at fair prices.



Upper: A reg. Jersey heifer that will be sold at the Rancho Dos Rios auction sale; and, lower, one of the prize-winning herd sires, Biddy's Valet of L., which many of the cows in the sale are bred to.

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KING LANCASTER.
Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.
THEY HAVE GRAND CHAMPIONS BEHIND THEM.

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DUROC-JERSEYS
Our herd is headed by Waukena Wonder 176555 and Col. King 182687—two great sires. A few choice fall boars and thirty gilts, either open or bred, sired by Waukena Wonder. They have the size, length and finish. Are offering spring pigs, sired by Col. King, large uniform fellows for their age. Make selections early. Write for further particulars. Prices right.
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Senior Yearling, P. P. I. E.
3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
SAN FRANCISCO OFFICE, 1210 FLOOD BLDG.

Don't Forget : : That the **Big Jersey Auction Sale**

Will be Held at the Rancho Dos Rios, Modesto, Saturday, May 6th

35 Reg. Cows - 5 Reg. Bulls - 85 Un-registered Cows

NOT A BULL SALE. NOT A DISPERSAL SALE, NOT A SALE OF CULLS, BUT A SALE OF PRODUCING ANIMALS SELECTED ENTIRELY FROM OUR HERD OF OVER 400 HEAD. NO CONTAGIOUS ABORTION IN OUR HERD AND EVERY ANIMAL OFFERED TUBERCULIN TESTED. *SALE STARTS PROMPTLY AT 10 O'CLOCK.*

OUR AUTOS WILL MEET MORNING TRAINS FROM NORTH AND SOUTH. HOT LUNCH SERVED AT NOON.
CATALOG READY FOR MAILING. INSPECTION BEFORE SALE INVITED.
MODESTO HEADQUARTERS, 11th and H STREET.

Auctioneer, Col. Ben A. Rhoades, Los Angeles, Assisted by M. P. Keppford, Modesto

Beef Fattening With Cottonseed Meal.

[Written for Pacific Rural Press.]

Cottonseed meal and hulls furnished the fattening ration for 1300 cattle at El Centro and 900 at Calexico belonging to the Cook Cattle Co. They were mostly three or four years old when put into the lot, weighing 900 to 1100 pounds. Most of them were from Texas ranges; some of the lighter ones from Mexico.

The ones at El Centro were kept in 10 pens 100 feet square, built next to the cottonseed oil mill for convenient hauling of feed. Those of similar size and grade were kept together.

The cattle were expected, according to W. H. Sprague, to gain 200 to 450 pounds according to size and breeding, in 60 to 110 days. Twenty-five pounds of meal and hulls in the proportion of 1 to 7 was the average day's ration for animals on full feed. Too large a proportion of meal would make too much protein per day. It was gradually increased from 1 to 12 at the start, and some received 1 to 5 on full feed. A little hay was also given. The meal was valued at $24 per ton; the hulls at $5. About 500 tons were used at the mill, according to Mr. Sprague.

The percentage of protein in cottonseed meal equals or exceeds the carbohydrates and fat combined. As the protein in a balanced ration for steers is only ⅛ or 1-9 as much as the carbohydrates and fat, it is evident that there is a great waste of protein in feeding cattle cottonseed meal alone. However, not all of the excess of protein is wasted, for the cattle come from the range pretty thin; and they use more of the protein economically for a few weeks in building up the lean muscles on which later to put on fat. However, the chances are that addition of enough grain to balance the ration after a few weeks would make that grain worth double or treble its price by saving the excess of protein that is now wasted in the cottonseed meal.

HOGS IN WALNUTS.

[Written for Pacific Rural Press.]

Ever since the rains let up L. A. Meredith of the W. R. Rowland ranch in Los Angeles county had about 250 hogs in his big walnut orchards. They have thrived on the rank growth of grass, filaree, and clover, and whatever nuts they have found. Soil under the spread of the branches has been well worked over by porcine noses; and if there were any blighted or wormy nuts, their harmful possibilities have been ended.

There are 325 acres of orchard, one 80 of which is on cold adobe soil which was pastured until plowed in April.

The hogs have no other feed, but will get grain three or four weeks before turning off. Mr. Meredith says buyers do not discriminate on account of the grass feeding.

Hog Down Barley.—The system followed is to give the pigs pumpkins, etc., in winter until orchard soil is dry enough not to be damaged, then run them in the walnut cover crop till plowng, then turn them onto springy hill pastures until volunteer or sowed barley in the hills has reached the milk stage.

Then they are turned onto the barley to harvest it cheaply and "it is surprising the amount of fat hogs will put on in a barley field. That's the only way to raise hogs in this country except that we ought to have alfalfa fenced to turn them onto when other pasture is dry."

ANOTHER HORSE SHOW AT RIO VISTA.

[Written for Pacific Rural Press.]

We are advised by E. W. Westgate of Rio Vista that the Rio Vista Horse and Stock Show Ass'n was organized April 17 by electing E. W. Westgate president; Geo. P. Dozier, secretary; John McCormick, Perry Anderson and M. L. Isham as directors. These directors will act with the president and secretary as a managing committee and assist in naming the various sub-committees.

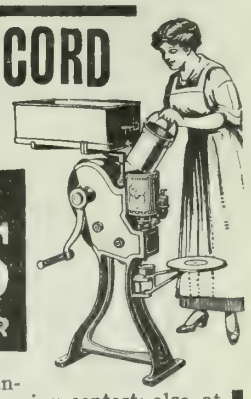
September 23 has been set as the date for holding the show this year and Mr. Westgate promises the best horse show that has ever been held in California, outside of the State Fair. This year a cattle show will be held in connection with the horse show.

Readers will remember last year's show at Rio Vista as being the first colt show ever held in California, and with the start which was made then the coming show may be expected to come up to Mr. Westgate's promise in all respects. All stock men and particularly horse men will be interested in knowing that our best draft horse section is to be the home of a high-class draft horse exposition.

An up-to-date cheese factory is being built in the Petaluma district on the Gaver estate. The company has purchased a number of cows and contracted for milk from surrounding farms.

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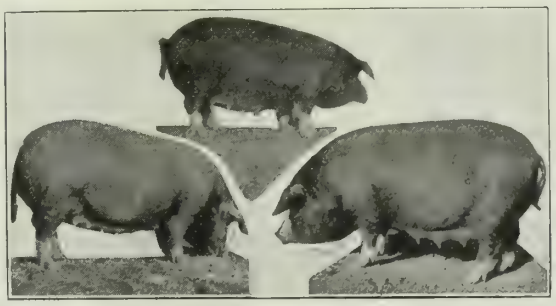
Expositions, as in case of Panama-Pacific, which have not judged separators by actual working tes **render no proof whatever** of the merits of one machine over another.

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SOME TYPICAL KNOB HILL BROOD SOWS.
(Large type, combined with high quality.)

Our herd is nominated in the California Poland China Futurity to be held in connection with the State Fair this fall. We have just imported and added to the herd some of the best blood of the East, including boars from W. J. Hather, Ord, Neb., and Peter Mouw, Orange City, Iowa.
We are offering pigs of both sexes from prize-winning stock. Litters coming at all seasons and stock usually on hand to suit customers.

Come and see them, or write for what you want.
ALL STOCK REGISTERED. ALL BREEDING GUARANTEED.

A. M. HENRY, Prop. **Farmington, Cal.**

CALIFORNIA HOG BOOK

Every hog-breeder in the State should have a copy of this book handy to refer to in cases of emergency. Every day the practical side of the book will help you. The author, W. S. Guilford, is a swine breeder, and he tells just what you want to know when a difficulty presents itself. The book contains 256 pages of text, besides many full-plate illustrations. Tells how the successful breeders feed and handle their hogs.

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Medium Type POLAND-CHINAS

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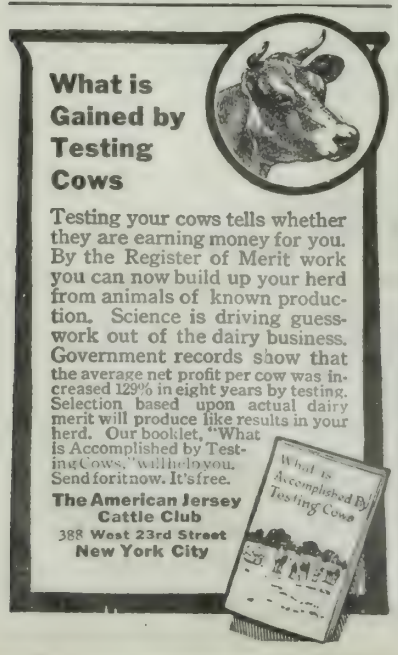
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With the Live Stock Men.

DAIRYING AND DAIRYMEN.

The Orland Cheese and Butter Co. is turning out almost a ton of butter per day.

Tulare county dairy inspector C. A. Peairs is prosecuting operators of insanitary dairies.

C. A. Beecher of San Joaquin county averaged 62 pounds fat from 40 Holsteins in March.

Blooded stock on 160 acres near Georgetown, El Dorado county, are being introduced by A. O. Nelson.

Hewitt and Hewitt have recently purchased 40 acres near Dixon on which they will place their registered Holstein herd.

H. T. Bailey of San Joaquin county averaged 60.3 pounds fat from 4.7 per cent milk of 11 Holstein cows in March.

L. Moreing of San Joaquin county has 15 Holsteins which averaged 55.6 pounds fat in March and 35 which averaged 54.1.

Laura J. Frakes and Bros. of Amador county have bought 60 acres at Rio Oso, Sacramento county, on which to establish a modern dairy.

The registered Dairy Shorthorn bull Baron Cambridge 2nd was received from Wisconsin April 19 by the John Lynch ranch of Petaluma.

Miss Benedita, a Jersey owned by J. E. Thorp of Stockton, made, in March, a record of 56 pounds fat from 963 pounds of 5.8 per cent milk.

The University Farm produced milk at a cost for feed of 4.09 cents per gallon from good cows and 14.8 from the poorest cow as an average for 2½ years.

B. A. Goodwin of Ripon has three Holsteins which made in March 55, 54.8, and 54.1 pounds fat from milk testing 3.6, 4.1, and 4.9 per cent respectively.

Bacterial and sediment tests to determine the price to be paid for milk or cream by Humboldt county creameries, is practically decided, largely through the efforts of the Farm Bureau.

The Stanford Vina ranch recently sold three purebred Holstein cows to M. H. Tichenor of the Palo Alto Stock Farm. Laurameka has an official test of 32.298 pounds butter; Autun has made over 26 pounds.

The yearly junior four-year fat record for Holsteins was broken by Milanhurst America De Kol, owned in New York, in a strictly official test in which she produced 985 pounds fat from 26,433 pounds milk.

A. B. Parker recently added 60 cows to the 80 head on the 4000-acre ranch of the Round Valley Land Co. in Mendocino county. Purebred Holstein and Jersey bulls head the herd which will all be tested for production.

Successful Queen, Jersey, completed a year's record April 14 making 852.72 pounds fat from 16,389.3 pounds milk. The test began at 4 years 5 months old. Her previous year's record was 682.4 pounds fat from 13,088.4 pounds milk.

Two official yearly Holstein tests have recently been completed. Their results have been compared with what the semi-official record would have been. In each case the actual fat produced was slightly more and the actual milk was slightly less than the semi-official test would have made it.

Cream grading in southern San Joaquin Valley is well established. Swift and Co. at Hardwick, the Central Creameries of Lemoore and Riverdale, the Corcoran Creamery, the Lucerne Creamery of Hanford and the Los Angeles Creamery Co. of Hanford all pay 2 cents less for B grade.

The American Guernsey Cattle Club will hold its annual meeting at Hotel Imperial, New York City, May 10. Other Guernsey men's meetings will be held there May 9. Dr. C. B. Davenport will give an illustrated lecture on Modern Laws of Heredity in Cattle Breeding. On May 11 there will be a large sale of Florham Farms Guernseys.

The John Lynch Ranch of Petaluma has recently sold the following registered Dairy Shorthorns: Five calves to W. E. Rucker, Willits; one 7 months bull and one yearling heifer to Chas. Dumars, Madison; 1 yearling bull to Chambers, Halbash, and Stevens, Los Molinos; a 15-months bull to G. W. Grant, Sanger; a 2-months calf to E. B. Root, Wasco.

Secretary H. J. Culbertson of the San Joaquin County Cow Testing Ass'n reports a Durham cow which produced 94.9 pounds fat in March from 1581 pounds milk testing 6 per cent. She belongs to C. Holman as do 7 Holsteins which averaged 58.2 pounds of 4 per cent milk. N. H. Locke had two Jerseys which produced 71.8 and 66.2 pounds fat from milk testing 6.1 and 5.8 respectively.

W. L. Hodges of El Centro bought 18 purebred Holsteins at the Southern California Consignment sale, thus totaling 400 purebreds and about 400 grades on his ranches. Bettie Snowflake of Sunnyside cost $825. She has a 7-day record of 28.88 pounds fat from 549 pounds milk. The first day following the test she gave 107 pounds milk. Locust Terrace Goldie cost him $535. Her record is 22.28 pounds butter from 565 pounds milk. Mr. Hodges uses a milking machine and is to have two steel silos of 280 tons capacity each. They are 14x40 and will be filled this season with two different crops.

SWINE BREEDERS.

Hogs recently sold at $10.65 in the stockyards of Alberta, Canada.

W. D. Trewhitt of Hanford has 42 Poland China brood sows headed by Nelson and Jumbo Equal.

The Woodland High School Agricultural Club was recently addressed on hog cholera by Dr. B. J. Cady of the U. S. Dept. Agr.

John Russell of Hanford says that during the past 20 weeks 123 carloads of hogs have been shipped from that city and still there are some left.

Felton and Hoyt have recently sold two Duroc boars to breeders in Kings and Tulare counties. They have some pigs coming on sired by Col. King.

Haden Smith of Woodland writes that six of his Duroc sows farrowed 72 pigs. Five of them are raising 51. The average litter for the whole herd was 11 pigs.

An acre of corn hogged off, produced more pork than an acre of corn harvested and fed in the usual way, according to the Missouri College of Agriculture.

Recent additions to C. B. Cunningham's O. I. C. herd at Mills are: a bred sow by Combination Rex, he by Combination the 2nd. She farrowed 7 pigs sired by Young Wonder, a son of Wonder; a fall boar sired by William A, grand champion in 1915 and out of Elmo's Pride, grand champion sow in 1913 and 1914.

Among recent sales of registered Poland Chinas from the Geo. A. Smith herd were three gilts and a boar to the Elwood Ranch, Inc., of Santa Barbara; Quilici Brother of Wells, Nevada, sow and boar; F. R. Morgan of Yuma, Arizona, two sows and a boar; D. W. Wiley of Soledad, sow and boar; J. L. Hall, Van Nuys, five sows.

Benj. F. Brunn of San Francisco purchased of Geo. A. Smith of Corcoran, twelve bred gilts for his ranch near Stockton. They were among the best that Mr. Smith has ever raised and will make a very fine foundation herd. Mr. Brunn is making very extensive plants to start one of the leading herds of purebred

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

GEO A SMITH'S JUNIOR HERD SIRE JOKER won the following prizes at the Wisconsin State Fair in 1915: First Prize in the Under Six Months' Class, 25 competing. First in the Wisconsin Special. First in the Wisconsin State Futurity. Total Winnings, $62. A Litter Sister won First in the Under Six Months Class. A Litter Brother won Second in the Under Six Months Class. Five of this litter won First on "Pen of Pigs." Four of this litter won First on "Get of Sire." Four of this litter won First on "Produce of Sow." Four others of this litter won Second on "Produce of Sow." His Sire, Jumbo Hadley, at the same Fair, won: First Prize Two Year Old Class; Senior Championship; Grand Championship. Joker had to compete with hogs from the leading herds of the Middle West, which had been fitted to show at the Panama-Pacific International Exposition, but which were not allowed to come on account of the quarantine. Gilts and sows bred to this boar for sale. One to a carload. For further information, write, Geo. A. Smith, Corcoran, Cal.

BILLIKEN HERD OF IMPROVED CHESTER WHITES.—The Money Makers. Everything registered and cholera immune. Nothing to offer for immediate delivery. Sows now farrowing. The pigs from these sows will be ready to ship during late May and June. Am booking orders now for these. The offering represents the very best and most popular blood lines the breed produces. Sires and dams by Champions and Grand Champions. Let me have your orders early. C. B. Cunningham, Mills, Sacramento County, California.

REGISTERED DUROC JERSEYS Only 5 of our choicest Fall boars, the best of 110 head, and 12 gilts left to offer. Am booking orders for Spring pigs, representing the most noted families. Entire herd in class "A" condition. Breeding guaranteed. Prices reasonable. Haden Smith, Route 1, Box 97A, Woodland, Cal.

REGISTERED DUROC-JERSEY — Weanlings, shoats, gilts and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

YOUNG'S POLAND CHINAS—Large type Boar, I. B. A. Wonder won first and reserve champion P. P. I. E., weighing 730 lbs. under 2 years in breeding condition. Weanling pigs, either sex—none better—$15 up. Satisfaction or money refunded. W. A. Young, Lodi, Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES — World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

REGISTERED DUROCS—"High Model" stock. 100 weanlings of both sexes. Also some mature sows, either bred to "River Bend High Model," or open. Prices reasonable considering the blood lines. River Bend Farm, St. Helena, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

RANCHO RUBIUS DUROCS according to winnings at last State and World's Fairs, are best sows in the State. Weaned pigs, large litters, now ready. $15, either sex. Elmer Lamb, Ceres, Cal.

FOR SALE—Nine thrifty grade Duroc-Jersey pigs, ready for delivery May second. $2.75 each, f. o. b. Modesto. For further information address R. C., Box 183, Modesto, Cal.

BLATCHFORD'S PIG MEAL weans easily and safely; no trouble; no milk. Write for free folder, "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

REGISTERED PUREBRED BERKSHIRE PIGS — Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

LARGE, QUICK MATURING registered Berkshires.—Both sexes, $10 each for weanlings. Older ones at farmer's prices. J. M. Bomberger, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen S. Day, Box 1140, Sacramento.

ROSELAWN STOCK FARM—Registered Poland Chinas and Shorthorn cattle. Young stock, both sexes, for sale. T. B. Gibson Estate, Woodland, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

BERKSHIRES AND POLAND CHINAS—Young thoroughbred stock. Best breeding. $10 and $15 each. Walker & Bent, Chino, Cal.

REGISTERED DUROCS from Eastern sows. One yearling and several Fall gilts. No culls. S S Southworth, Napa, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

PIGS OUT OF SUPERBA—Panama-Pacific Grand Champion Poland China. Booking orders now. Chas. H. Hanna, Riverside, Cal.

BERKSHIRES OF QUALITY bred right, fed right, are right. Both sexes for sale. Prices very reasonable. C. Hartman, Ripon, Cal.

REGISTERED DUROCS of guaranteed breeding. Bred gilts, service boars and fall pigs. H. E. Boudier & Son, Napa.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

Poland Chinas in California, and is equipping his ranch for a large herd.

BEEF BREEDERS AND CATTLE.

A union packing house is proposed for Fresno by the San Joaquin Valley stockmen's Ass'n.

Miller & Lux shipped 12 carloads of fat beeves from Los Banos to San Francisco last week.

H. L. Murphy has brought to California two more carloads of registered beef Shorthorns. Most of the animals are bulls.

F. F. Britton of San Jose suggests that the State and county fairs should give prizes to California boys for raising baby beef.

HORSES AND SHEEP.

D. O. Lively recently shipped six Merino rams for Mr. Bullard of Woodland to Paiyta, Peru.

Senator J. D. Bradshaw and A. Pasquale of Paradise Valley, Nevada, recently bought stallions for their ranches.

Wool buyers are paying 24 to 26 cents for spring clip wool in the Dixon section. Some holdover fall clip is being bought at 17½ cents.

Posters advertising stallions for service in Oregon must contain the words "Purebred," "Grade" or "Mongrel" in boldface letters one inch high.

Sheepmen in Solano county are disposing of their spring lambs at $5 to $6 per head. H. G. Brown of Dixon is reported as having sold 500 at $5.50 each.

Sheep scab, formerly the greatest drawback to the sheep industry, is easily controlled by regular dipping in lime-sulphur, nicotine, or sulphur solutions, but according to the U. S. Dept. Agr., stockmen are inviting another scourge by neglecting these measures.

The Wyoming Corriedale Co. has recently sold two Corriedales to Elenwood & Ramsey, Red Bluff; two to Walter McAlpine, Marysville; one ram and 7 ewes to A. M. Harahan, Yamhill, Ore.; three to the Nevada Agricultural College, Reno; and three rams to Adam and McGill, Ely, Nev.

MISCELLANEOUS.

A rabid coyote caused the loss of 23 steers in one feed lot at Winnemucca, Nev.

Honduras cattle have long been barred from U. S. because of the cattle tick, but growers are beginning to treat their herds in order to ship

The Napa County Fair will be held Sept. 13-16 under auspices of the Farm Bureau and Livestock Ass'n. Admission will be free.

Two silos 30x30 will be filled with 325 tons of pea vines each by the Pacific Pea Packing Co. of Oakdale. The vines have heretofore been wasted.

Five 200-ton steel silos are being placed on the Timkin ranches in Imperial county. They measure 19x36 feet and a variety of crops will be tried out in them this season.

SWINE.

FOR SALE—Fancy belted Hampshire hogs. Well belted young sows and boars, registered. Prices reasonable. Ben F. Thorpe, Manager, Canfield Estate Ranches, Consall, California.

DUROCS AND BERKSHIRES—Prize stock. Guaranteed. Young pigs, $10 each. One yearling Duroc boar, $20. Write for what you want. We have it. Perkins & Co., Perkins, Cal.

LARGE TYPE POLAND-CHINAS—Now booking orders for Spring pigs from our Nebraska prize-winning sows. I. I. Marsh, Route A, 348, Modesto.

POLAND-CHINAS—250 lbs. in six months our aim. Imported sows. None better. Linn & Porter, Route A, Modesto, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

PURE-BRED BERKSHIRES—Stock of all ages. Brae Bourne Ranch, Route 3, Box 172, Santa Rosa, Cal.

REGISTERED DUROCS—All ages. One yearling boar. Satisfaction guaranteed. Frederick M. Johnson, Napa.

REGISTERED POLAND-CHINA SWINE — Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

FOR SALE—Registered Poland China Boar, two years old. Price, $20. H. Wohlleleven, Livermore, Cal.

"BOARS"—Pure-bred Durocs. Write for description. R. A. Holdridge, Dixon, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED BERKSHIRES—Big-boned. Cholera immune. Riccomi Bros., Mountain View.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRE PIGS — Write or call. Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED POLAND CHINAS—Large type. C. M. Stetson, Route "A," Ceres, Cal.

REGISTERED BERKSHIRES — Weanling pigs, $10 each G. A. Casey, R. 7, San Jose.

REGISTERED BERKSHIRES — Prize-winning stock. Sunnyside Stock Farm, Perkins, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED BERKSHIRES—Young boars for sale. Alexander and Kellogg, Suisun, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

POLAND CHINA HOGS—Registered. J. R. Miller Llewellyn Ranch, Lathrop.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

READAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Ripon, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

BEEF CATTLE.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco, or H. J. Macomber, Paicines, Cal.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of imported Villager 295884.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON-NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G. Ranch, Esparto, Cal.

GEORGE WATTERSON—Breeder registered Herefords, Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

THREE HIGH-GRADE HOLSTEIN HEIFERS—Very nicely marked and fine individuals. Four years, 18 months and 6 months of age. Price, two hundred. James H. Gray, Winters, Cal.

VANDERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly records. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butters as two-year-olds. A. A. Jenkins, Tulare.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

FRANK MEACHAM, Petaluma, California — Breeder Red Polled Cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS — Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

BULL CALVES from a grandson of Colantha Johanna Lad and from a son of King of the Pontiacs. J. W. Benoit, Route C, Modesto, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

HOLSTEIN BULLS out of A. R. O. cows, sired by a son of King of the Pontiacs. Prices reasonable. J. H. Harlan Co., Woodland, Cal.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

ELEVEN REGISTERED HOLSTEIN COWS—Priced to sell as a bunch at very low figure. K. W. Abbott, Milpitas, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

REGISTERED JERSEY BULLS from Register of Merit cows. D. F. Conant, R. "B," Modesto.

BREEDERS OF A. R. O. Holstein-Friesian cattle exclusively. Dirk Dairy Farm, Lemoore.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEYS — Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls from tested cows for sale.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

BREEDER of Registered Holstein Cattle Ernest Otto McClure, R. 2, Modesto, Cal.

BREEDER OF REGISTERED HOLSTEINS—E. E. Freeman, Route B, Modesto, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED HOLSTEINS—Golden West Herd. D. & H. Rowles, Modesto.

JERSEY BULL—8 months old. A bargain. O. J. Ames, Oakdale, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

SHEEP AND GOATS.

ANGORA GOATS will clean up your rough land and furnish mutton for the ranch. Choice Mohair breeding animals at $5.00 each. Pino Grande Ranch, Guerneville, Cal.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

THE BULLARD FLOCK RAMBOUILLETS—Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

KAUPKE BROS., WOODLAND, CAL.—Breeders and importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

FOR SALE OR EXCHANGE—Imported German Coach Stallion. Registered. Color seal grown; guaranteed sound in every respect. Sure breeder. Best of disposition. Weight 1350 lbs.; or will exchange for live stock. E. W. Smalley, P. O. Box 572, Hanford, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

D. O. LIVELY, 216 Hobart Building, San Francisco buys and sells live stock—any kind—any quality.

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb boar. Ed. E. Johnson, Turlock, Cal.



Registered Jacks

Range raised; Guaranteed satisfactory breeders. Field Jacks a specialty. Registered Shire Colts. Will trade for young mules, horses or land.

James W. McCord
Hanford, California

Stanford Holsteins

HERD SIRES:
King of the Pontiacs 14th.
Dutchland Col. Sir Ormsby.

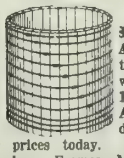
High class young bulls of serviceable age for sale, sired by one of our great bulls and out of A. R. O. cows. Prices right.

STANFORD VINA RANCH
VINA, CALIF.

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanlings pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.
Write or call and see us.
SWINELAND FARM,
W. O. PEARSON, Prop.
Woodland. California.

REDWOOD TANKS—SILOS.



Thirty-five years in this Business in Stockton.—A 500-gallon tank, $8.00. A tank 6 ft. x 2½ ft., $7.50. Other tanks equally cheap. I deal direct with the consumer. You will save 10% to 25% by dealing with me. All sizes in stock. Clear dry redwood direct from the mill by vessel. Write for prices today. Latest improved machinery. Doors, Windows, Frames, Mouldings.
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For More Power, Insist on the Straight Distilled, All-Refinery Gas
NOT A MIXTURE
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IMPORTED AND HOMEBRED
SHIRE STALLIONS and MARES



63 prizes won by our horses at the Panama-Pacific International Exposition, including the premium championship for breeder.

Visitors and Correspondence Invited.
BLACK HAWK STOCK RANCH
Burlingame, California.



Pedigreed Holstein Bull $250

I am now offering a very fine bull out of a high-testing dam, who was sired by King Pontiac Premier, one of the best sons of King of the Pontiacs, 165 A. R. O. daughters. His dam's present record is 21.09 pounds, average test, 4.11%, made at four years old. This record was made under verw unfavorable circumstances, and she will make around 25 pounds with next calf. On the sire's side the bull has the blood of Pietertje Hengerveld Count De Kol, 99 A. R. O. daughters; and dam Deutschland Creamelle, is out of Creamelle Vale, the former world's championship milk cow. This young bull is almost white in color and is ready for service. His high test breeding will count in your herd.

Write or come and see him.
F. STENZEL.
San Lorenzo, California.

Tagus Ranch
BREEDERS OF PUREBRED
Holstein Cattle
Polled Angus Cattle
Duroc Jersey Hogs
Tagus Switch, Tulare Co., Cal.

Oak Grove BERKSHIRES
CHOLERA IMMUNE
Our herd is Cholera Immune, the only Immune Berkshire herd in the State.
Fine herd boar in use and they are second to none on the coast. Our sows are of equal merit.
We know that we can supply what you want.
Write Us or Call.
OAK GROVE DAIRY FARM
H. G. ARMSTRONG, Prop.
Woodland, Cal.

GET STARTED RIGHT
Registered Duroc Jerseys.
$10 each PIGS $10 each
are money makers.
What's the use of raising "Scrub Hogs" when purebreds may be had at this price! They grow faster. Send today.
NEW ENGLAND CALIFORNIA CORPORATION
RIPON, CALIF.

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SCIENTIFIC PRESS PATENTS PATENT AGENCY
911 Crocker Bldg., S. F.
Circular containing 100 mechanical movements mailed free.

Veterinary Queries.

Querists will save time by referring to back files by means of the indexes published in June and December.

HORSE LIES DOWN FREQUENTLY AND RUNS AROUND.

To the Editor: A workhorse apparently well and in good condition would frequently lie down and get up a time or two while eating in the barn. One day after eating well at noon as usual, he lay down in the plow team. I turned him loose. He rolled a time or two, then ran toward home. He lay down in the barn, then trotted around and lay down again. He tried to lie on the manure pile on his stomach with his front feet sticking straight out. He seemed in such pain that he was crazy and would get under the fence and try to go in the shop.

I gave him oil and also injections, but neither had any effect. Later I gave him niter, but that had no effect either. He got no better so about 8 o'clock I gave him a dose of liniment and a few minutes after that he died.

I cut him open. The lining of his stomach was two-thirds gone and red worms about ¼ in. in diameter and ¾ in. long (which I presume were bots) were busily engaged on the remainder. There were a number in the stomach.

The intestines were practically empty, the stomach full of food. Had I doctored him for bots and succeeded in removing them would he have lived with his stomach in that condition? What was the immediate cause of death? If a horse has bots eating the lining of the stomach how can I tell it in time to save him? —J. W. S., Tulare.

[Your horse would have died regardless of treatment with his stomach in the condition you describe. Immediate cause of death was due to destruction of the lining of the stomach and to the absorption of the toxic products due to this destruction. You have described the symptoms of bots and should be able to recognize the trouble again. A good remedy for bots is to give one ounce of carbon bisulphide in a capsule every hour until four have been given and follow with a quart of raw linseed oil.]

ANKLE PUFFS AND THRUSH.

To the Editor: My mare has soft puffs on her ankles. Some people call them wind galls, and road puffs. What is the cause? Are they harmful? She has thrush in her feet, also. Will it be good to shoe her over a stout piece of leather and fill the cavity with hot tar?—W. E. P., Wilmington.

[These puffs seldom do any harm. They are caused from strains of the tendon sheaths. A good treatment is to paint them with tincture of iodine daily over a period of one to two months. For thrush pack the clefts of the foot with cerate of cantharides twice at intervals of four days.]

COW HAS DISCHARGE.

To the Editor: What shall I do for a cow that has a white discharge? She calved Feb. 22. The afterbirth came in pieces. She has not been in heat since.—F., Bieber.

[Douche out this cow with a 1-1000 solution potassium permanganate in quantity about one gallon daily until the discharge ceases.]

OPERATE FOR POLL EVIL.

To the Editor: My horse's head is very sensitive on top just behind the ears. How do you cure poll evil?—F. F. B., Turlock.

[An operation is the only cure for poll evil.]

Geo. A. Smith and D. Wiechman Sales
482 Dairy Cattle 482
Mr. Wiechman will sell at his ranch
FIVE MILES SOUTH OF CORCORAN, CALIFORNIA,
on the Angiola Road.
ON TUESDAY, MAY 16
90 extra fine selected Dairy Cows, mostly Holsteins and large producers.
40 2-year-old heifers coming fresh soon.
40 yearling heifers. Some bred. 30 heifer calves.
2 extra high-class Registered Holstein Bulls.
All young cattle and most of the cows were sired by Registered Holstein Bulls.
100 hogs, mostly feeders.
The Geo. A. Smith herd of grade cattle will be sold on Wednesday, May 17, at his Home Ranch, two miles south of Corcoran, and will consist of
60 high-grade heavy producing cows.
50 2-year-old heifers, coming fresh soon.
80 yearling heifers, many of them bred.
30 extra fine growthy, thrifty, heifer calves.
28 steers from 2 months to one year old.
10 extra high-bred young Registered Holstein Bulls ready for service.
Most of this stock was sired by Registered Holstein Bulls, and those that are bred are bred to a $900 Registered Holstein Bull.
20 very high-class, high-grade Guernsey heifers, fresh and coming fresh soon, and two very fine Registered Guernsey Bulls will be sold as a special attraction. Inspection especially invited before the Sales.
Terms: Cash, unless other arrangements are made before the Sales.
B. Wiechman, Geo. A. Smith, Owners
Col. Ben A. Rhoades, Auctioneer

GRANDSONS OF TILLY ALCARTRA
At Prices within Reach of Every Breeder and Dairyman.



A Grandson of Tilly Alcartra.

We have several splendid grandsons of this now famous cow which we can deliver to you at prices which will suit the pocketbooks of every dairyman wishing to improve the quality of his herd, whether it be a grade or pure-bred herd. These bulls are sired by our herd bull, Prince Alcartra Korndyke and out of A. R. O. cows, and are the only living grandsons of a cow having a record of over 30,000 pounds of milk in a year. Such an opportunity for increasing production has never been offered DAIRYMEN AND BREEDERS in California, price and quality considered. Buy one of these bulls and solve your low production problem. Write
J. S. GIBSON CO., Box 97, Williams, Cal.
"THE NAME GIBSON INSURES QUALITY."

DUROC JERSEYS
"Individuality is the Result of Inheritance."—Watch these ads and study the breeding of our noted herd boars, AMES BOY 143967, by Freed's Col., Grand Champion at the Iowa State Fair. Ames Boy sires the easy feeding kind that you want in your herd. 500 head registered Durocs to select from. Ranches, Holtville and Devore, Calif.—11 miles N. W. San Bernardino on Paved Road and Santa Fe and Salt Lake Rys. Address Devore.
PETERS, LAMSON & WALKER.

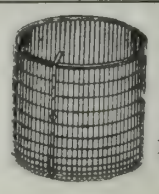
Shorthorn Bulls
and
: : Heifers : :
On April 21st we arrived from Missouri with a carload of choice registered Bulls and Heifers.
INSPECTION INVITED.
H. L. & E. H. MURPHY,
Perkins, Sacramento Co., Cal.

HORSE OWNERS! USE
GOMBAULT'S
CAUSTIC BALSAM.



A safe, speedy and positive cure. The safest, Best BLISTER ever used. Removes all bunches from Horses. Impossible to produce scar or blemish. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

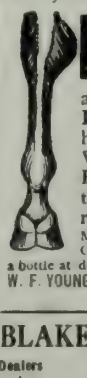
BLACK LEG
LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials.
10-dose pkge. Blackleg Pills $1.00
50-dose pkge. Blackleg Pills 4.00
Use any injector, but Cutter's best.
The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct.
THE CUTTER LABORATORY. Berkeley, California



REDWOOD TANKS. SILOS
Water Troughs, Windmills, Frames, and Towers.
Steel and Wood.
Prices the lowest.
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DISPOSING OF OLD BREEDING STOCK.

[Written for Pacific Rural Press by Mrs. Susan Swaysgood, Pomona.]

There are several ways open to the farmer with a few dozen good-sized hens, that have been used as breeders, to dispose of them. The first way is to send them to the ever-present commission man and take what they will bring. This way brings ready cash and very little trouble. But it will pay those who are not afraid of the trouble and would like a little more cash to put the hens in a small yard or shed where they can have shelter from the sun and at the same time have plenty of fresh air and feed them up on a fattening diet. If sour milk can be had, or buttermilk, feed them a soft mash mixed with the milk and see that they are kept clean and quiet. It may take three weeks to get them in good shape, or even a month, if they were very poor to begin with. But they will gain enough in weight to make it profitable, besides the gain in quality.

When you have hens in real good condition it is not much trouble to get a good market for them, but small skinny hens are always a drug on any market. Even when sold through commission men it pays to put them through a few weeks of fattening as the increase in weight alone will pay for the trouble.

Advertise Locally.—But if you live near a town of any size, selling good fat hens to hotels, restaurants and private families is a very easy thing to do and at very little trouble or expense. Simply put a small ad in the local paper: "Milk-fed chickens for sale." To this can be added any other information you wish to give, such as "dressed," if you want to go to the trouble, and price per pound.

Dressed Chickens Pay Best.—Most housewives are willing to pay extra to have a chicken "dressed," ready for cooking, and if you make a good job, I know from experience that you can charge almost double the price you could for an undressed chicken. When you deliver dressed fowl, let them be clean outside and in, have a damp clean cloth in the bottom of the box and one to cover the chickens with. Then, too, it is better to have them weighed and a tag tied on each chicken with its weight and price. This saves trouble, and perhaps having to wait at some places while they send out to get the chicken weighed. Sell by your own weight, not other people's, but don't forget to allow a little for shrinkage. Sometimes it is quite easy to get the trade of a good hotel who will take all you have at a fair price, but if that can't be done, sell to private families.

To City Restaurants.—Another good way is to advertise in a city paper, "milk-fed chickens." Or get the names of some hotels and restaurants and write to them stating how many good fat hens you can supply them and at what price, or say so much above market price of common market stock. You might not know the market price, but they will, so if you ask too much that trade will be lost. The markets that sell retail are about the best and most reliable men to ship to if you can correspond with them and find out just what they want, because they will not buy poor, thin poultry; they buy to sell again at once, not to fatten up.

Canned Chicken for Sunday dinner or lunch with a few accessories makes it easy to prepare a meal that will nourish and satisfy during the summer months.

Our Home Circle Editor will perhaps publish my recipe for disposing of a part of the breeding stock to the best advantage; anyway, I will send it in and hope you will try it.

POULTS WITH ROUP.

To the Editor: Is roup in young turkeys caused by a microbe in the ground, and what can I do to cure the sick birds?—J. M. S., Folsom.

[Answered by Geo. H. Croley.]

[All forms of roup are contagious and the germs from affected fowls will contaminate the ground, houses, and roosts. One or two good sprayings with disinfectants made from coal tar or containing carbolic acid usually destroys them. Simple catarrh or a cold, which is often mistaken for roup, is not difficult to cure, but there are two general forms of real roup that are difficult to conquer. The most common form may be classed as contagious catarrh resulting in the formation of cheesy substance in the mouth and nostrils and often in swollen eyes. Diphtheretic roup—also called canker—may or may not include the above symptoms, but is distingushed by yellowish white patches on the tongue and in the throat about the windpipe. To treat either form, first remove affected fowls to comfortable and protected quarters; give them all they will eat of a variety of food or a balanced ration. For catarrhal roup, remedies are generally sold throughout the country, but the following are also good: Cleanse the head, eyes, and throat with a solution of ½ ounce boric acid in one pint of warm water; or a two per cent solution of carbolic acid; or peroxide of hydrogen diluted in equal quantity of water. For diphtheretic roup, in addition to the above remedies, paint the throat with tincture of iodine; pour oil of turpentine on a hot brick placed so that the fowls must breathe the vapor.]

ARSENATE OF LEAD UNSAFE IN POULTRY YARDS.

To the Editor: I have some apple trees in my poultry yards. Would there be danger of poisoning my fowls if I spray these trees with arsenate of lead?—M. C., Sebastopol.

[Answered by Geo. H. Croley.]

[The arsenate of soda and the acetate of lead, from which this compound is made, are both very poisonous substances, and unless great care is used, the fowls might be poisoned. If the spray could be prevented from falling into the yards at the time of spraying, there would be little danger of trouble afterward, for the reason that the compound sticks well and even during an ordinary rain is not likely to be washed off the foliage.]

CHOLERA OR ENTERITIS?

To the Editor: What causes cholera among hens; is it contagious; and how can it be prevented? Is it curable; and if so, what should be given?—Subscriber, Boulder Creek.

[Answered by Geo. H. Croley.]

[Fowl cholera is caused by a germ (bacillus avisepticus); it is very infectious and usually fatal. We have never seen a case of genuine cholera in California, and several careful investigators now believe that nearly all formerly supposed outbreaks that have occurred in the United States were not cholera, but some form of enteritis or serious intestinal trouble. There is no known remedy for the true cholera. The best way to prevent it is to feed the fowls wholesome food and furnish them comfortable quarters that are frequently disinfected. The trouble that is most often mistaken for cholera is enteritis or a serious form of dysentery. There are two general causes for this trouble: bacteria derived from filthy conditions, dirty water, putrid meat, or other decaying food causes bacterial enteritis, while toxic enteritis is created by slow poisoning through eating unslaked lime, salt, paint skins, lye, arsenic, and copper, or solutions containing these materials.

It is difficult to distinguish the two forms because the symptoms are similar. In all cases the birds seem droopy; usually eat little; the comb is pale at first, but later turns a purplish color; always diarrhoea varying from whitish to green, brown, or red; the fowls usually linger for weeks before death; at first the liver is enlarged, but finally shrinks; and the intestines are inflamed and full of mucous; if head is held downward, a stringy, dirty liquid escapes from the mouth.

To remedy the trouble, first clean up and disinfect the premises. If toxic infection is suspected, give large quantities of milk, white of egg, or mucilage; and in any case as treatment for each 100 mature fowls, proceed as following: Dissolve one pound of Epsom salts in water and mix in the mash; reduce the bran and shorts in the mash and increase the middlings; give one dose only of the salts. The next step is to mix in the mash twice daily ten ounces subnitrate of bismuth, three ounces powdered cloves, and ten ounces of powdered charcoal. If this does not check the diarrhoea within twenty-four hours add to the above remedy three ounces bicarbonate of soda, seven ounces powdered cinchona bark, and give three times daily in a less amount of food until the dysentery is checked. When this is accomplished, give in the food once daily to each 100 mature fowls one ounce of the following mixture: One pound each of powdered fennel, anise, coriander, and cinchona bark; two pounds each of powdered ginger and gentian; and half a pound of powdered sulphate of iron. Continue this for from one to three weeks according to the improved condition of the fowls.]

HEALTHY ROOSTER HAS LUMP ON FACE.

To the Editor: I have a fine, vigorous rooster apparently in perfect condition that for six weeks has had a swelling on left side of his head between the eye and the beak. The lump is not hard, is the size of a pea, and does not change in size. The eye seems all right except that it is usually watery, due, no doubt, to the pressure. What is the cause and remedy?—Subscriber, Raymond.

[Answered by Geo. H. Croley.]

[In the absence of any further symptoms or details, we judge the trouble is due to some foreign substance that has lodged in the face of the fowl. A fox-tail, wild oat, or splinter may be found if the lump is carefully opened. If, when opened, some object is discovered, it should be gently removed and the wound washed with listerine, peroxide of hydrogen, or a carbolic acid solution. If, by chance, this is a mild sporadic case of swell-head, this treatment will likely cure it, but it would be well to examine the other fowls to see if they have any affection of the head, eyes, or throat that might indicate the presence of swell-head, canker, or roup.]

The 200-egg hen was discovered many years ago. In the 1901 Poultry Contest conducted by the "American Agriculturist" one flock of hens averaged 247 eggs, while the poorest return was from a flock in the same neighborhood; the hens in this flock averaging less than 10 eggs each hen per year.

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KILLING TRESPASSING HENS.

To the Editor: If my chickens go on a neighbor's place, has he the right to shoot them?—H. R. B., Fairfield.

[Answered by Geo. H. Croley.]

[It is the duty of the owner of fowls to prevent them from trespassing upon neighboring property, and the party who is damaged by the trespassing of the fowls may take them up and obtain damages through due process of law. If, on the other hand, he kills the trespassing fowls, he is liable for damage to the extent that may be awarded the owner by a court or a jury.]

FARMERS' UNION SUPPORTS PRUNE ORGANIZATION.

The Farmers' Union stockholders have voted to do for the new prune organization as they did for the raisin company. Their raisin warehouses were used as before, until the raisin company was assured, when the warehouses were turned over to the latter. While the Farmers' Union realizes that thus their own marketing organization will be weakened, they are to be highly commended for the patriotic and unselfish position they have already taken in favor of the State-wide prune association.

NEW AYRSHIRE DAIRY.

A new Ayrshire dairy is being established on the Willow Farm near Woodland by H. A. Johnston of San Francisco. Twenty-six registered females have been secured from Canada, and a bull from E. B. McFarland of San Francisco. Supt. W. G. Baine states that they expect to increase the number and to raise hogs as well. Buildings have been painted; concrete floors laid in the cowbarns; a concrete walk connects the milk house and barn; new fences built, and yards graded to drain off the water. A 150-ton silo will soon be erected.

Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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ALL OUR PURE-BRED CHICKS from Hoganized, trapnested flocks, have been reduced in price. Barred Rocks, Rhode Island Reds, Black and White Minorcas and Anconas, 12½c each, 2 or 1000; Brown Leghorn 10c each, $9 for 100; White Leghorns, 9c each, $7.50 for 100. Brown's Poultry Yards, 2750 San Pablo Ave. Phone Oak. 2182. Oak.

MODEL POULTRY FARM—White Leghorns. We are now booking orders for Hatching Eggs, Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired Heavy Winter Layers. W. C. Smith, Prop., Corning, Cal.

BIG VALUES IN BABY CHICKS May and June. Write at once for special price list. R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Well bred, hatched and shipped for safe arrival—the kind you want at a reasonable price. Roosden Poultry Ranch, Campbell, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396 Los Gatos, Cal.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

BABY CHICKS We will hatch during May and June, so order now and get them when you want them. All good strong, young chicks from good layers. White and Brown Leghorns, Barred Rocks, R. I. Reds and Black Minorcas. Campbell Poultry Ranch, Campbell, Cal.

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PLACE YOUR ORDER NOW for May delivery of White Leghorn chix from Jackman's pure-bred, heavy-egg producers. You get the best at lowest price, $7 per hundred. Special low prices in large lots. Sunnyside Poultry Farm, Route 2, 1610 Vine St., Sacramento, Cal.

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EGGS FOR HATCHING—True-to-type Barred Rocks of a first-class utility strain. Large birds bred to lay. $1.25 per 15; $6.50 per 100, charges prepaid and safe delivery guaranteed. G. L. Horine, Box 52, Winton, Cal.

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HERE IT IS—White Rock baby chicks. $15 per 100. Hatching eggs, $1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ceres, Cal.

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RHODE ISLAND RED BABY CHICKS and Eggs. Heavy laying strain. Send for circular. Rosedale Ranch, R. 1, Hayward, Cal.

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SPECIAL—Barred Rock and Rhode Island Red Chicks $12.50 per 100. Safe arrival guaranteed. G. L. Hawley, Madera, Cal.

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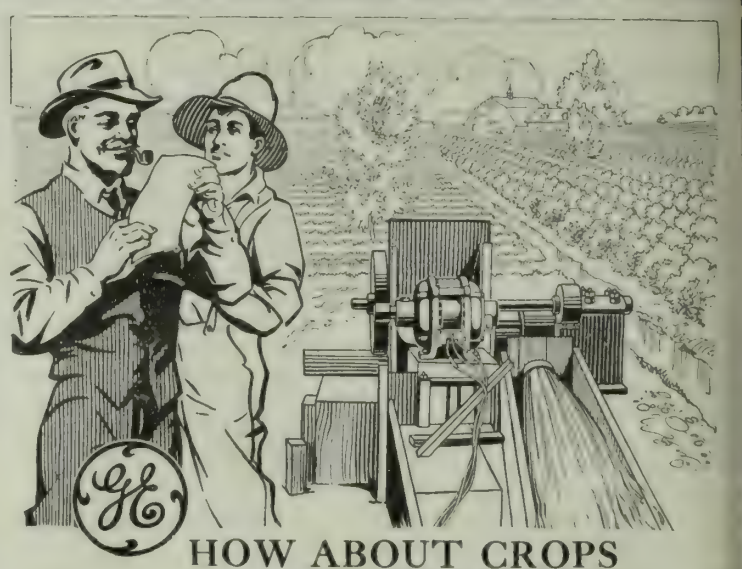
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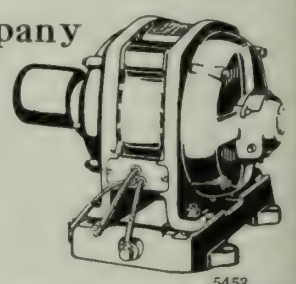
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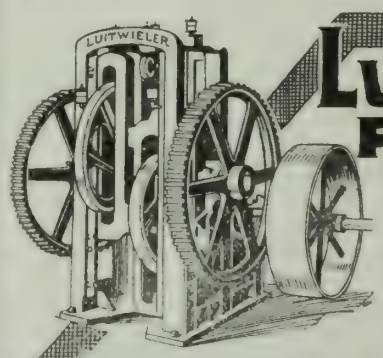
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The Home Circle Page of the Pacific Rural Press

FLORAL CORNER.

[By Geo. N. Tyler.]

In answer to the questions of A. N. R.:

Question 1. What method do florists use to root carnations?

Question 2. Are cinerarias annuals or perennials?

Question 3. Is it possible for an amateur to grow cyclamen from seed,

Carnations are rooted in the winter months from strong plants free from all diseases. You can root them now, but it is a little late. It would be better to get small plants out of 2¼ in. pots. In taking the carnation cuttings take the shoots from the flowering stems not too high up or low down; the cuttings must be soft. Cut just below a joint, or if they can be taken with a heel, so much the better. If a cutting breaks clean across when bent it is right for rooting, but if it knees it is too hard. Trim up the bottom leaves close to the stem, and trim the top back so that the cuttings will be about three inches long.

Get a box four inches deep that has cracks in the bottom, put in one inch of coarse gravel, and on top of this three inches of sharp sand for top, firm the sand in the box and water.

In making your cuttings throw each one in a pan of water, to prevent wilting, for when a cutting is wilted, its juices are expended and it is thus the same as a hard wooded cutting. At this time of year, put the box with the sand in a shady sheltered situation free from draughts. Put in the cuttings about one inch deep, one inch apart in the rows, and rows two inches apart, keep them well watered and sprayed for the first week, and as they draw moisture from the sand, give less water; they will root in about four weeks if conditions are favorable. Do not let them stay in the sand long after rooting. You can plant direct from the sand into permanent beds where they are to bloom. I will give cultural directions next week.

Cinerarias—Are classed as tender annuals or greenhouse perennials. Seeds should have been planted last fall. It is better to buy young plants now than try to grow from seed at this time of year.

Cyclomen—Are easy to grow from seed if the weather is not too cold. The seed is sown in light sandy soil, and barely covered, in October and November, and as soon as germinated, pricked off into flats, one inch apart, using a light soil with a great deal of leaf mould. I would advise buying small plants and growing them—plants out of 2¼ in pots if possible. I will give cultural directions later. But in chrysanthemum cuttings as described in a former article you can put in cuttings clear up to end of June and still get big flowers.

I have received a query on moving Bermuda lily bulbs. I would advise that you let the lilies grow on and bloom, and seed if possible. By seeding they will mature earlier. If you do not let them bloom, the bulbs after moving will come blind. The reason so many of the Bermuda bulbs come blind is on account of digging them before they mature. After they flower let them go dry, and as soon as foliage turns yellow dig and replant in new location as soon as possible, as it does not do lilies any good to stay long out of the ground.

TO COOK CHICKENS FOR CANNING.

Cut a lemon in two and rub the hen all over with the juice, or if no lemons are at hand rub over with vinegar and leave it to stand all night. Next morning wash off and wipe dry the chicken. Rub over with butter and sprinkle well with flour and salt. Put in greased baking pan containing half a pint of water, cover over with another pan same size to hold steam in (a roaster is the proper thing to bake old hens in), but the pans can be made to do. Now bake until the meat will slip from the bones, take bones out and heat up meat and gravy together and pour hot into fruit cans, any size, and seal up as you would fruit. When needed put can in boiling water and heat through.

TYPHOID FEVER.

The University of California is perhaps the national center of the fight against the ravages of typhoid. The death rate last year was only two-thirds that of the year before. The State Hygienic Laboratory will send typhoid vaccine to any physician in the State and vaccination is easy and practically painless. This is a safeguard to not only one's self but to one's close friends, for many cases of typhoid develop into typhoid carriers.

Other preventive measures against the disease are the State supervision of water, milk and food supplies and the disposal of sewage.

It is confidently expected that by 1918, California will lead all of the states in typhoid control.

GRAPE SYRUP.

One of the Rural Press subscribers, Levi Lindquist of Middleton, has been manufacturing grape syrup on his place and getting one dollar a gallon for it. He advocates all grape growers who have grapes rich in sugar, as the Black Melvoise and Mission and other varieties, to follow his example and unite to form a market for the product.

SMOKERS' SETS.

The stores are showing stands of wood in various finishes that have a good-sized drawer for tobacco and pipes and a tray on top for ashes. These are very light, easily moved around and would make fine gifts for any man who is a smoker.

Cucumbers make a delicious salad and an attractive one as well when served in their own skins. Do not pare but wash the cucumbers well and dry them, slice them the long way, scoop out as much cucumber as possible, take a portion, cutting it into small cubes, mix with diced celery and pimentoes, fill the cucumbers, cover with mayonnaise and serve on lettuce leaves. Garnish with sliced pickled beets.

Keep the coffee pot clean by scalding it out with water to which soda has been added.

TO SPRING.

By Mrs. R. M. Arthur, Turlock, Cal.

Here's to pansies for thoughts they say,
To the new striped marigold.
Here's to the violets' modest way,
And forget-me-nots of old.

Let's welcome these flowers of springtime,
And the daisies so bright and gay,
They bring with them all the sunshine
We need to fill our day.

Friendship's Garden.—Why is it that in the country, we see so few nice gardens, when every advantage is afforded at so little cost?

How different would the out-of-the-way farm look, and what a happy appearance it would present, if the very spring itself were to bloom around its door. Yet it is true, it's seldom seen.

I came to the country almost a year ago, and enjoyed the first few months, it being my first experience on a farm. Soon the novelty wore off. I began to miss my friends and city acquaintances, especially my back-fence neighbors. I became lonely and blue, thinking only of the drudgery part of farm life.

Springtime is here now and with it the sunshine and happiness, inspiring all lovers of nature to awake, —it is garden time.

I have written each of my friends who have gardens to select for me a slip of her favorite flower, that I may plant it and watch it grow.

I have taken much pleasure in tending my garden, and into it is woven fond memories that separation cannot destroy.

My garden of sunshine and love it will be when blossoms will be riotous in their profusion, their fragrance ever present to welcome me.

What more beautiful remembrance of a friend than the living thought expressed in the sweetness of living flowers.

When my garden is an attraction, many will come to visit me and enjoy it with me; too, others will be inspired to have the same around their humble little homes, thereby making the country about me a beautiful sight to behold. It will then, sooner or later, attract more settlers, who will be proud to be one of our community and anxious to make their homes cheerful looking also.

One needs to get away from the washtub and the ironing board once in a while—and a few strokes a day with the spade and the hoe will do wonders to a run-down system as well as a run-down garden.

MRS. BEST'S LETTER.

My dear Friends:

At this time of year, when everything is so fresh and beautiful, we are all moved to freshen up the inside of the houses and whether we have much or little money to spend, if it is spent wisely, we can make a vast improvement. To begin with the walls, paper of course gives a handsome effect, but tinting in soft, pastel shades, makes a very useful wall and one that shows up any pictures to be placed upon it. The exposure of the rooms should decide the color as a cold, north room can be made much more cheery by using a warm, tan wall coloring. The use of bright red and greens is happily a thing of the past. Of course in bed-rooms that are intended for individual use, there is more latitude in choice of colors. Many bedrooms are done in blue, especially if the bedroom furniture is light in color. There are many borders in use, both on papered and tinted walls, and they can be secured in either conventional designs or more ornate patterns with straight edges, or floral patterns in what is called cut out designs. These range from 10 cents a yard up and make a finish just below the picture molding.

If your ceilings are high, drop your picture rail to the tops of the windows and allow the ceiling color, which should be cream, to extend to the picture rail. Some of the paper houses are showing draperies in the same patterns and colorings as the cut out floral borders and they make a very attractive combination.

Woodwork in old houses is quite a problem and there are many reasons why white is not feasible, but it is very pretty and white paint can be applied on almost any woodwork that has not a high varnish and can be done by anyone at all careful in their work.

For kitchens and bath rooms, there is on the market an oilcloth paper of domestic make that gives very good service.

If you have floors that you wish to prepare for rugs, fill the cracks and nail holes with a paste filler, smoothing it over with a knife and when thoroughly dry, sandpaper the rough spots. It will then be ready for the paint. Personally, I prefer a color that is similar to a dark hardwood floor and there should be several coats applied so as to make a good surface.

Paint houses have booklets describing interiors of rooms and floor finishes that they are glad to furnish on request. Devotedly,

Rosabella Best.

Mother: "Why are you so quiet, Bobbie?" Bobbie (aged six): "I was just thinking how glad I am Christmas doesn't come in the summertime." Mother: "Why?" Robbie: "'Cause I wear such teenty-weenty little socks in the summer-time."

Mrs. Wealthy: "Are your berries fresh, little one?" Margaret (experiencing for the first time the trials of a berry-vender): "Yes, ma-am. Our bushes don't raise anything but fresh ones."



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HOW DUKE EARNED HIS LICENSE.

Duke was a dog that had not belonged to any one until Robin adopted him. The dog followed Robin home from school one day, and ever after had refused to leave him.

Duke proved to be a very civil dog, kind, affectionate, and possessed of more than ordinary intelligence; but—how he did eat! Robin often shared his own dinner with him in order to avoid hearing his father say: "That dog isn't worth his keep. He eats more than his neck is worth," or something of that sort.

Robin's little heart was near breaking one day, when he overheard his father telling his mother that Duke must be got rid of in some way before the time came round for licensing dogs.

His mother found him in a corner of the woodshed with his arms around Duke's neck, while the dog's eyes looked appealingly into those of his boy friend as if begging for protection. Every now and then the dog's tongue would lick the hand that drooped from his shaggy neck, as if in sympathy he could not otherwise express. And altogether it was a picture hard to look upon with dry eyes.

"It really seems a pity to separate them," Mrs. Jordan confided to Robin's father when relating the circumstances to him.

"Yes, it does. But I certainly cannot afford to both feed the dog and pay his license. If Robin will agree in some way to earn Duke's license I will agree to keep on feeding the rascal," Mr. Jordan replied, as Duke, who had slipped into the room during the conversation, snuggled a cool nose coaxingly into his hand.

Robin, who was close behind Duke, heard the proposition, and joyfully acceded to it. Earn the money for Duke's license? Of course he would! There were numberless ways in which he could do it. Why, he almost felt the money in his hand now.

In the first place there were sodas. No more of these until Duke could boast a paid-up license. Baseball games, too, must be cut out. Why, when Robin started in enumerating the many ways in which money slipped through his fingers he was sure that in three weeks, at least, Duke would find himself a respectable, licensed dog.

Duke, unmindful of the unusual interest he was exciting, still followed Robin about in faithful dog fashion all day, and at night stretched himself contentedly upon his bed of meal-bags in the woodshed.

"One dollar of your fee earned already, old fellow," Robin exclaimed, throwing his arms impulsively around Duke's neck one night, as he was settling himself down to dog slumbers.

As if half sensing the meaning of the words, Duke softly licked Robin's cheek, accompanying the caress with a low whine.

"I wonder if Duke understands what I am doing for him," Robin mused as he was undressing himself ten minutes later. "I'm quite sure he would do as much for me, if he could. Not the same thing, maybe, but I know he'd do anything he could to help me if I was in trouble," he assured himself as he jumped into bed.

A couple of hours later Robin was aroused from a dreamless sleep by something brushing his cheek. "It feels just like Duke's tongue," he murmured sleepily, and he was about to drop off again when the touch was repeated, this time accompanied by the clawing of a paw at the bedclothes. He put out his hand; it rested upon Duke's shaggy head. The dog was whining and acting strangely.

"What is the matter, Duke?" Robin said, by this time wide awake.

Duke's answer was a series of loud, short barks that soon woke Robin's father and mother and mother and brought them into the room. Duke immediately rushed through the door and down the stairs, Robin and his father and mother rapidly following.

Robin had wondered how Duke had managed to gain an entrance to the house, but the open door between the shed and the kitchen reminded him that he must have forgotten to close it.

A fire smouldering in the corner of the shed told the rest of the story. The dog had smelled it and hastened to notify the sleeping family of their danger through Robin, his little playfellow and friend. The smouldering flames were soon extinguished, but had Duke delayed five minutes longer they would have burst forth.

After the excitement was over, Robin's father stooped and laid his hand tenderly upon the head of the faithful dog who in all probability had saved all their lives.

"You have earned your license, old fellow; and if I continue to pay it as long as I live I shall still consider myself in debt to you," he said in a husky voice.

Duke's soft brown eyes looked first at Robin and then at Robin's father, while his wagging tail seemed asking, "Who will own me now, you or Robin?" — Helen M. Richardson.

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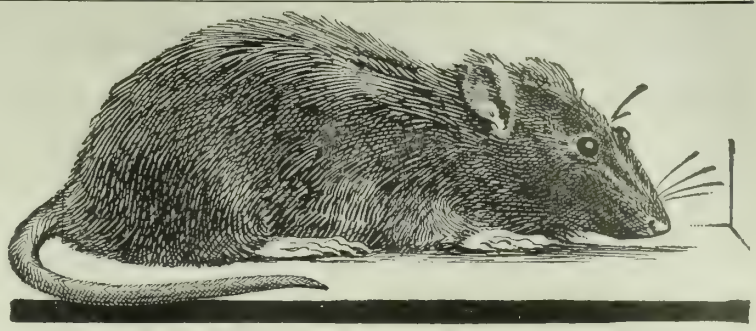
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The brown rat probably steals more of the farmer's profits than any other living pest. Every one of the millions of rats in this country annually destroys many dollars worth of produce and property. They breed faster than the farmer can exterminate them by traps and poison. To keep rats out, you have to build them out—with concrete.

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Build the cellar walls, of concrete—likewise the cellar floor. Above the foundation, fill the space between sheathing and lath with concrete to the height of one foot. In the same way fill the space between first floor and ceiling. Build steps and cellar hatchway of concrete.

How to Make Farm Buildings Ratproof

Smaller farm structures, such as milk houses, granaries, silos, hotbeds and cisterns, should be entirely concrete. Such structures are absolutely inaccessible to vermin and rodents, except through open windows and doors. If rats do enter, they can be exterminated easily, as concrete offers no cracks nor crevices in which they can hide.

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FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS.

San Francisco, April 26, 1916.

WHEAT.

The Eastern market has picked up a little in the last few days, but the Coast markets show little strength, and the only change in local values is a slight decline in northern bluestem. Stocks remaining in the country in Oregon and Washington are said to be large, owing to lack of transportation, but the crop is expected to be lighter than last year.

Cal. Club, ctl.	$1.57½ 1.65
Northern Bluestem.	1.87½ @1.90
Northern Red	1.85 @1.95

BARLEY.

The December option has been a little firmer this week, but trading in spot barley is limited, and while holders are not trying to force sales the market has little strength.

Shipping, ctl.	$1.37½ @1.40
Choice Feed, ctl.	1.32½ @1.35

OATS.

There is a small jobbing movement for immediate consuming requirements, but business is very quiet, and values are little more than nominal, standing about as last quoted.

Red Feed	$1.35 @1.37½
Red Seed	1.45 @1.65
White	1.45 @1.50

CORN.

Eastern corn shows some firmness in primary markets, but not enough to affect the local situation perceptibly, the amount required here being limited. The sorghum grains show a rather wide range of prices, even beyond the figures quoted, according to quality of offerings or local conditions in producing districts.

Eastern Yellow, ctl.	$1.80 @1.85
Milo Maize	1.40 @1.45
Kaffir	1.60 @1.65
Egyptian	1.50 @1.57½

BEANS.

Small white beans have been advancing by small degrees for several weeks past, and this week both small and large whites are marked up, as there is an increasing inquiry for these varieties from Eastern markets, where stocks are very light. The local supply in these lines also has been reduced to very small compass, and further advances are considered likely. Other grades show no change this week, and the demand has been very light for several months, while stocks in most lines are fairly large for this time of year. The cleanup of whites, however, is imparting a firmer feeling to the market in general, and will no doubt turn the demand more to pinks, which are expected to show somewhat better prices despite the large supply.

(On wharf, San Francisco.)

Bayos, per ctl	$4.50 @4.60
Blackeyes	2.90 @3.00
Cranberry Beans	4.55 @4.65
Horse Beans	3.00 @3.25
Small Whites (south)	6.15 @6.25
Large Whites	5.90 @6.00
Pinks	4.20 @4.30
Limas (south)	4.35 @4.45
Red Kidney	6.50 @6.75
Mexican Reds	4.50 @4.65
Tepary Beans	4.00

SEEDS.

There is a little alfalfa moving, but the season's business is about over. Sudan grass is getting considerable attention, and is offered at a wide range of prices, though the cheaper offerings are generally regarded with some doubt.

Melilotus Alba, lb.	23 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	5 c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Alfalfa, per lb.	22 @24 c
Sudan Grass	35 @40 c

HAY.

Offerings here are about normal for this time of year, and the daily arrivals clean up better than they did a few weeks ago. First cutting alfalfa is figuring more largely in the arrivals, and with old stock closely cleaned up, prices are exceptionally good, some very fine hay having been sold as high as $12 per ton. Much larger shipments are expected within the next week. New volunteer hay also will probably appear early in May. Fancy wheat and red oat hay in light bales is scarce and brings quite a premium, but the medium grades show no great strength; but with very adverse weather conditions in most sections for the last few weeks, comparatively high prices are expected for the new crop. There has been a larger shipping business to the north, but the southern, interior and export demand is light.

No. 1 Wheat	$13.00 @16.50
No. 2	12.00 @14.50
Tame Oats	12.00 @18.00
Wild Oats	12.00 @14.00
Alfalfa	12.00 @15.00
Stock Hay	6.50 @ 8.50
Straw, per bale	.25 @ .40

FEEDSTUFFS.

While the demand shows the usual spring contraction, there is fully a normal movement for this time of year, and with high prices for grain, etc., values are well maintained.

(Wholesale prices, per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$22.50 @23.50
Alfalfa Meal, per ton.	20.00 @21.00
Alfalfa Molasses Meal per ton	21.00 @22.00
Bran, per ton	24.50 @25.50
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00 @25.00
Cracked Corn	40.50 @41.50
Middlings	33.00lb34.00
Rolled Barley	29.00 @30.00
Tankage	45.00
Rolled Oats	29.50 @31.00

VEGETABLES.

Summer squash has been added to the list, bringing 60c to 85c per box. Cabbage is scarce and high, and artichokes hold up well. A little celery is coming from Florida, and eggplant and peppers from that source are easier. Mexican tomatoes are still held at stiff prices. The asparagus crop in the Delta district has been coming on rather slowly, and with a continued heavy demand for Eastern shipment and canning prices on good stock are still high, though there is a lot of poor stuff offered at lower figures. Rhubarb shows a wide range, with plenty of cheap offerings. Beans and peas are coming in freely from several directions, and in spite of large shipping business the prices are much lower.

Cabbage, ctl.	$1.25 @1.75
String Beans	5c @ 8c
Summer Squash, box.	60 @85c
Peppers, bell, lb.	25 @30c
Rhubarb, box, Bay	.40 @1.00
Asparagus, box	1.00 @2.25
Artichokes, doz.	.40 @50c
Lettuce, small, crate	1.00 @1.25
Eggplant, lb.	10c @15c
Peas	2@ 4c
Tomatoes	3.00 @3.50

POTATOES AND ONIONS.

New potatoes have again been marked down, as the crop is coming in well, and supplies have accumulated a little in spite of a lively demand. Oregons are lower, and old river stock is nominal, with dealers closing out odds and ends at irregular prices. Repicked Delta onions are higher, but poor stock is cheap. Oregons have been marked up sharply, while Australians find very little demand. A car of Bermuda seed onions from Chowchilla is selling at $1.25 to $1.50 per crate.

New Potatoes, ctl.	2.00 @2.50
Oregon Burbanks	1.50 @1.85
Delta Burbanks	Nominal
Onions, Delta ctl.	1.25 @1.75
Onions, Oregon	1.75 @2.00
Australian	3.00 @3.25
Garlic, per lb.	9 c

POULTRY.

Young stock has again stiffened up a little, as there is an active local demand and offerings have been limited. The best fryers sell up to 40c, and small fryers bring a slight advance over last week. Young roosters also have advanced, while hens remain weak. Belgian hares are steady, notwithstanding heavy offerings.

Live Turkeys, lb.	21 @23c
Broilers, 15 lbs. to doz. and less, lb.	35 @38c
do, over 15 lbs. to doz.	35 @38c
Fryers	35 @40c
Hens, extra, per lb.	21c
Small	19 @20c
Smooth Young Roosters, per lb.	28 @33c
Squabs, per doz.	2.00 @4.00
Geese, per pair	2.25 @3.00
Ducks, young, lb.	19c
Old	16 @17 c
Belgian Hares	11 @12½c

BUTTER.

Butter has again dropped a little, in sympathy with outside markets, though still somewhat higher than last year. Arrivals have been quite large, while the northern shipping movement seems to be over for the present. Eastern shipments continued until very recently, but are expected to stop at any time, as heavy arrivals in New York are causing that market to show some unsteadiness. Local dealers, it is understood, are not shipping at their own risk, the movement being handled on behalf of Eastern interests; and a peculiar phase of the matter is that much of the stock shipped out is picked up on the street at more than Exchange prices.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	25½	25	25	25	24½	24½
Prime Firsts	25	24½	24½	24½	24	24
Firsts	24½	24	24	24	23½	23½

EGGS.

Storage buyers have been actively in the market, and it is believed that more has gone into storage than at this time last year; but arrivals for the last week has been quite heavy, and prices have eased off a little.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22	22	21½	21½	21	21
Sel. Pullets	19	19	19	18	18	18½

CHEESE.

California flats have been coming in very freely this week, and the price is 1½c lower. Y. A.'s hold fairly steady at the former level, while Monterey cheese is a little firmer.

Y. A.'s, fancy	17½c
Fancy Calif. Flats, per lb.	13 c
Monterey Cheese	15 @16½c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	25	25	25	25	25	26
Eggs	22½	22½	22½	22½	23	22

DECIDUOUS FRUITS.

There are still plenty of cold storage apples, but with other fresh fruits arriving they receive little attention. The berry market is taking on more life, with a few raspberries and several lots of blackberries appearing and selling at fairly high prices. Strawberries are lower all round, with liberal supplies from several districts. Some small lots of gooseberries have appeared, but hardly enough to quote. Loquats have dropped again, and cherries are declining rapidly, though with only about half a crop no very low prices are expected during the season.

Blackberries, crate	$1.00 @1.50
Raspberries, basket	15c
Strawberries, S'n, crate	50c
Fresno	1.25 @1.50
Watsonville, chest	4.50 @8.00
Apples	.75 @1.00
Loquats, crate	1.25 @1.50

DRIED FRUITS.

Old figs are entirely out of the market, and the packers are getting actively into the market for future supplies. This is one market not affected by curtailment of export shipments, as the annual requirements of the United States are estimated at 20,000 to 22,000 tons, while the California crop, amounting to only about 8,500 tons, will be the total supply, as it will be impossible to get any more foreign stock this year. The market is accordingly very firm, and attractive prices are offered for both black and Calimyrna varieties, with nothing to indicate that values will be lower. Packers and dealers are also taking more interest in most other fruits, both for spot and future delivery. Apricots of the 1916 crop are being contracted at fully the present spot figures, and better figures are offered this week for prunes in both positions, in consequence of the evident shortage. Pears are little more than nominal. Peaches are steady here, with more firmness apparent in the Eastern market.

Apples	5 @5¼c
Apricots, per lb, 1915	8 @10c
Figs, white, 1916	9 @10 c
Black, 1916	5 c
Calimyrna, 1916	6¾c
Prunes, 4-size basis, 1915	4½c
1916	5 @5¼c
Peaches, 1915	4 @4½c
1916	4½ @5 c
Pears	5½ @7½c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6¾c
London Layers, 3-crown,	

MEAT PACKING PLANT PROPOSED AT FRESNO.

To learn why prices of beef, pork, and mutton are considered lower in California than elsewhere on the Coast or in the East, a committee of growers was appointed Mar. 15. On Apr. 22 this committee "decided to take steps to secure a co-operative packing house and union stockyards" at Fresno. Branch marketing plants are planned for San Francisco and Los Angeles. They hope to handle both fresh and cured meats. As it would take perhaps $300,000 to build and equip the plant and run it until the business would pay expenses, the committee is still making careful investigations of its feasibility.

Special Livestock Market Report.

No change has come to the livestock markets of San Francisco since last week except such a slight weakening on beef and mutton that it has scarcely affected the price quoted last week. Cattle are coming off the grass as the buyers demand them. There may be a shortage of sheep and lambs during May and June till the Nevada and Northern California stock begins to come. J. C. Johnson of San Francisco shipped 25 cars of live lambs to Chicago from Byron this week.

WOOL.

The wool market is quiet except for choice long wools, which move freely. Present arrivals are of poorer quality than last year, being dirtier and with more burs.

California Garden Flowers, by E. J. Wickson, $1.50 Postpaid, PACIFIC RURAL PRESS - Publisher 525 Market St., San Francisco.

20-lb. box $1.25
Imperial Clusters, 6-crown,
20-lb. box 2.50
Bulk, layers, 50-lb. box 2.25

CITRUS FRUITS.

The eastern citrus auctions are a trifle easier than they were a week ago, but the prices are still satisfactory. At New York on Monday, April 24, navels averaged from $1.80 to $3.05 per box; bloods $1.80 to $2.45; seedlings, $2.05 to $2.80; sweets $1.90 to $2.70; St. Michaels $2.10 to $2.45; Jaffas $2.65; valencias $2.65 to $2.90; lemons $3.20 to $3.55.

Shipments from southern California are going east at the rate of about 200 cars daily, and are nearly equal in amount for the season to last year at the same date.

Lemons are receiving a little more attention in the San Francisco market, and oranges are fully holding their own, though the demand will probably be affected by increased offerings of deciduous goods within the next few weeks. Values in all lines stand as before.

Oranges, Navels	$1.50@2.75
Tangerines	1.25@1.75
Grapefruit	1.50@2.50
Lemons, box	1.75@3.50
Lemonettes, box	1.25@1.75

HONEY.

New honey is expected here very shortly, and meanwhile the local market is dull and featureless, with stocks fairly well cleaned up and practically no demand.

Water White, comb	13@15 c
Amber	8@12 c
Water White, extracted	7@ 8 c
Light Amber	3@ 4 c
Dark	2@ 2½c

NUTS.

The nut situation shows little change, California stock of all kinds being pretty closely cleaned up, while the trade apparently has enough for present needs and is taking little interest in the spot market. The outlook for new crop is being closely watched by buyers.

(Prices f. o. b. San Francisco.)

Almonds (1915)	Nominal
Walnuts (1915):	
Budded, per lb	17½c
No. 1	14 c
No. 2	11 c
Jumbo	17 c

HORSES.

Few good drafters have been arriving in this market for the last few weeks, but apparently no great number are wanted, as the current offerings move off rather slowly, and animals showing any defect are hard to sell.

(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs and up	$ 250
Drafters, 1550 to 1650	150@200
Chunks, 1350 to 1500 lbs.	150@175
Wagon horses, 1050 to 1350 lbs.	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@ 75
Farm Workers	50@100

HIDES.

There has been quite an active demand the last few weeks, and all offerings are readily absorbed at an advance over the former prices.

Dry, 15 lbs. and over	31 @32 c
Kip, 10 to 15 lbs.	32 @ 33 c
Veal, 7 to 10 lbs.	34 @35 c
Calf, under 7 lbs.	35 @36 c
Wet Salted, Steers	17½ @18½c
Cows	17½ @18½c
Kip	19½ @20½c
Calf and Veal	23 @24 c
Bulls and Stags	13½ @14½c
Horses, dry, large	$2.25@3.00
Sheep, long wool	1.25@1.40
Medium	1.00@1.25
Shearings	.35@ .40

LIVE STOCK.

(Prices, paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)

Steers, No. 1	7½ @8 c
No. 2	7¼ @7½c
Cows and Heifers, No. 1	6½ @7 c
No. 2	5¾ @6 c
Bulls and stags	4 @5½c
Calves, light	8½ @9 c
Medium	7½ @8 c
Heavy	6½ @7½c
Hogs, grain-fed:	
100 to 160 lbs.	8¼c
160 to 175 lbs.	8½c
175 to 250 lbs.	8¾c
250 to 325 lbs.	8½c
Prime Wethers	7½ @7¾c
Spring Lambs, f. o. b. country points	$5.00@5.50

DRESSED MEATS.

Steers	11¾ @12¼c
Veals, large	12½ @13 c
Small	13 @14 c
Prime Wethers	13½ @13¾
Spring Lambs	16 @17 c
Hogs	11 @12 c

WOOL.

(Prices paid in the country.)

Red Bluff, year's	25@27 c
Sacramento Valley, yr's	19@25 c
Mendocino, year's	26@30 c
Mendocino, 7 mos.	22@23 c
Southern, year's	18@21 c
Southern, 7 mos.	15@18 c
Imperial Valley, year's	17@19 c
Imperial Valley, 7 mos.	14@15 c
Nevada	21@23 c

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	28.60	28.00		28.20
" 9	25.33	26.66	26.00	28.10
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	28.66	36.33	28.00	36.66
Feb. 6	26.68	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25
" 20	29.00	32.00	27.16	32.00
" 27	29.10	30.90	27.00	35.25
March 6	27.00	24.08	25.25	24.16
" 13	24.66	29.91	24.00	28.83
" 20	23.00	28.33	22.50	27.16
" 27	22.91	28.50	23.00	28.08
Apr. 3	23.00	28.50	22.23	28.83
" 10	23.08	29.31	22.00	28.00
" 17	23.00	27.33	22.00	27.50
" 24	23.00	25.25	22.00	25.00

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 30	28.16	36.33	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50
" 13	23.00	28.90	25.10	28.00
" 20	23.60	23.66	23.58	20.33
" 27	21.40	20.30	20.80	18.50
March 6	20.50	18.33	19.00	18.00
" 13	20.66	19.50	19.00	18.91
" 20	21.0¢	20.00	19.66	19.08
" 27	20.83	21.41	18.50	20.83
Apr. 3	21.75		21.00	
" 10	22.00		21.00	
" 17	22.00	21.16	23.08	20.91
" 24	21.80	21.83	22.25	22.58

TIRES

PRICES

Goods shipped to all points C. O. D. Money refunded on goods returned intact within one week.

Size	Special Prices on Plain Tread	Gray Tubes	Red Tubes
28x3	$ 6.55	$1.75	$1.95
30x3	6.95	1.85	2.10
30x3½	8.95	2.10	2.35
31x3½	9.45	2.15	2.40
32x3½	9.95	2.25	2.45
34x3½	10.95	2.30	2.55
36x3½	12.05	2.40	2.75
30x4	13.20	2.80	3.10
31x4	13.85	2.85	3.20
32x4	14.05	2.95	3.30
33x4	14.70	3.10	3.40
34x4	14.95	3.15	3.50
35x4	15.65	3.20	3.60
36x4	15.85	3.30	3.70
34x4½	20.25	3.85	4.30
35x4½	20.85	3.95	4.35
36x4½	21.25	4.10	4.50
37x4½	21.90	4.15	4.60
35x5	23.65	4.70	5.20
36x5	23.95	4.90	5.35
37x5	24.90	4.95	5.45

Non Skid Prices in Proportion.

SPECIALS

WHILE THEY LAST.

30x3½ SS	$ 7.90
34x3½ Cl	8.90
31x4 SS	10.00
34x4 Cl	12.75
36x4 Cl or SS	13.50
35x4½ SS	14.00
36x4½ Cl or SS	14.00
36x5 Cl or SS	15.00
37x4½ Cl	14.00
37x5 Cl or SS	15.00

Prices subject to change without notice.

Automobile Tire Company

Sixth and Olive Streets, Los Angeles.
F3737. H. A. Demarest, Bdwy. 4049
533 Van Ness Ave., San Francisco.
1776 Broadway, Oakland.
2nd and B Sts., San Diego.
Hotel Fresno Bldg., Fresno.
The Oldest Automobile Tire Jobbing Concern in the United States and the largest in the world.

Publisher's Department

The circulation of the Pural Press is gaining steadily. Last week we added 153 new subscribers to our list—we should have had more than 200, but part of the field force were off. Those that were at work turned in good lists.

At this season our book department expects less orders than during the winter. However we have a new book which should command sales all through the summer—Second Thousand Agricultural Questions Answered—you need this. Price $1.50, postpaid.

One of our Santa Clara county subscribers writes: "My father subscribed for the Rural Press when the agent for it was a Mr. McGrew in the early seventies, as I remember it, and I think there has not been a break in having it in our home since. For a Saturday night's comfortable reading and general agricultural reading it seems to be in a class by itself, and gives one a restful, though at the same time a progressive outlook for interests connected with the land."

Another new book of interest to horticulturists has just been issued by the Orange Judd Co. of 315 Fourth Ave., New York, entitled "Plant Propagation, Greenhouse and Nursery Practice," by Prof. M. G. Kains, price $1.50 net. The book is well illustrated, bound in cloth and contains over 300 pages. It was written in popular style to cover the new "wrinkles" worked out by plant propagators, and nursery, greenhouse and garden methods simplified. Teachers of agricultural practice should by all means have a copy in the library.

Classified Advertisements.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

GAS ENGINES—I can furnish rebuilt Fairbanks, Morse, Otto, Peerless, Samson, Union and other good makes in all sizes. All investigators buy and all buyers are delighted. Pay when satisfied. J. J. Pottinger, 189 2nd St., San Francisco.

IRRIGATION EQUIPMENT—For pumps, oil engines, gas engines, friction clutch pulleys, etc., write us. We can save you money. Commercial Iron Works, 481-497 Fifth St., San Francisco.

APPLES!—Buy direct from producer. Newtowns, 90c; Bulk pack, 4 and 4½ tiers, equal proportion. No. 2 grade for cooking, 65c. In 5 box lots 70c and 50c per box. Edwd. A. Hall, Watsonville, Cal.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

FOR SALE—Two 40 in. by 60 in. Russell Threshing Machines, with pneumatic stackers. For particulars write to owner. H. P. Mohr, Amador Valley, Alameda county, Cal., Pleasanton P. O., Box 277.

FOR SALE—A well-stocked nursery in a good business location. 5318 Geary St., between 17th and 18th Aves., San Francisco.

REBUILT GAS ENGINES from 3 to 50 h. p. Thoroughly overhauled and guaranteed. Write us your requirements. A FEW SPECIALS: 6 h.p. 2-Cycle Gas Engine, $125; 15 h. p. Field Gas Engine, $350; 35 h.p. Best Gas Engine, old but reliable, $200; 50 h.p. Otto Gas Engine, $900. Mechanical Installation Co., 181-89 Second St. Motors, Gas Engines bought, sold and exchanged.

FOR SALE—Used Ranch Tools, Windmills, pumps, engines, new galvanized tanks; 1000, $22.50; 2000, $32.50; guaranteed. Save half. Demmitt Company, 126 North Main, Los Angeles.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars Pacific Co-operative League, D236 Commercial St., S. F.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds $3.00 delivered. Order with remittance. WM J. SCHROTH CO., 112-B Market St., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.

CONCRETE MIXERS—2 brand-new mixers at manufacturer's prices. Write at once. Commercial Iron Works, 481-497 Fifth St., San Francisco.

WINDMILL FOR SALE—16 feet power aermotor and 40 feet steel tower, A1 condition, at bargain. Ogden Bolton, Jr., Route 6, Santa Rosa, Cal.

TREES AND PLANTS.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

PEDIGREED BURBANK FRUITING-FODDER—Cactus Plants. 100, $7.50; 1000, $45; 10,000, $300. El Campo Co., 227 Story Bldg., Los Angeles.

FOR SALE—300,000 yellow Jersey sweet potato plants. Prices from $2 to 50c per thousand. For information, write Parker Bros., Hemet, Cal.

All NAVEL, VALENCIA and LEMON trees, $15 per hundred, packed in moss. Less than 100 lots, 18c each. J. C. Johnson, Azusa, Cal.

PROFICHI FIGS, 1916 crop for sale. Limited quantity. T. H. Lynch, Box 21, R. R. 8, Fresno.

FOR SALE—Spineless Cactus Plants. Prices right. R. C. Engbert, Byron, Cal.

SEEDS AND BULBS.

WE BUY ALFALFA SEED containing Dodder, Mustard and other noxious seeds. Send us sample of any high or low grade seed you may have; also of mustard, burr and sour clover seed, flax, etc. Signed Mercantile and Warehouse Co., Fifth and Poplar Streets, Oakland, Cal.

SEED BEANS—We have choice Red Mexican and Buckeyes grown on sand land, producing a heavy crop. Well cleaned and in good order. Write for prices to THE GRANGE COMPANY, Modesto, California.

TEPARY BEANS FOR SALE—Eight cents per pound Robert Paulson, Lockewood, Cal.

WANTED.

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. R. Humphrey, Principal, Stockton, Cal., Box 704.

WANTED—A position as ranch superintendent. Qualified by experience and agricultural college training. Straight salary or salary with share in profits acceptable. Box 216, Pacific Rural Press.

LAND FOR SALE

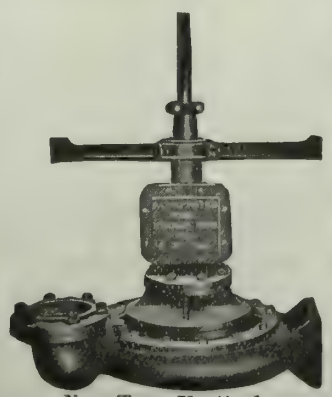
FOR RENT—Dairy ranch—440 acres, about 15 acres in alfalfa (60 more can be planted); 20 milk cows. 10 miles from R. R. depot. County road and creek running through ranch, pumping plant. 20 h.p Ostenberg gas engine, pump water from creek. School, 2 miles. Long lease to satisfactory party. Rental, $1200 per year, in advance. Victoria E. Oldham, Paicines, San Benito Co., Cal.

DAIRY RANCH—Four miles from Sanger in the famous San Joaquin Valley. 126 acres on Kings river. Riparian right. Pumping plant, stock, farming implements. Good buildings, fences, etc. Wish to retire Owner, Route 2, Box 44, Sanger, Cal.

FREE NEW WHITE BOOKLET—Tells "How," "Why," and "Where" of overlooked STATE, SCHOOL, GOVERNMENT and INDIAN Land Bargains NOW on market. Write JOSEPH CLARK, Sacramento.

EASTERN KANSAS FARM—160 acres, well improved. Trade for small California farm. J. L. Buck, Chowchilla, Cal.

The KROGH Vertical Pumps



New Type Vertical.

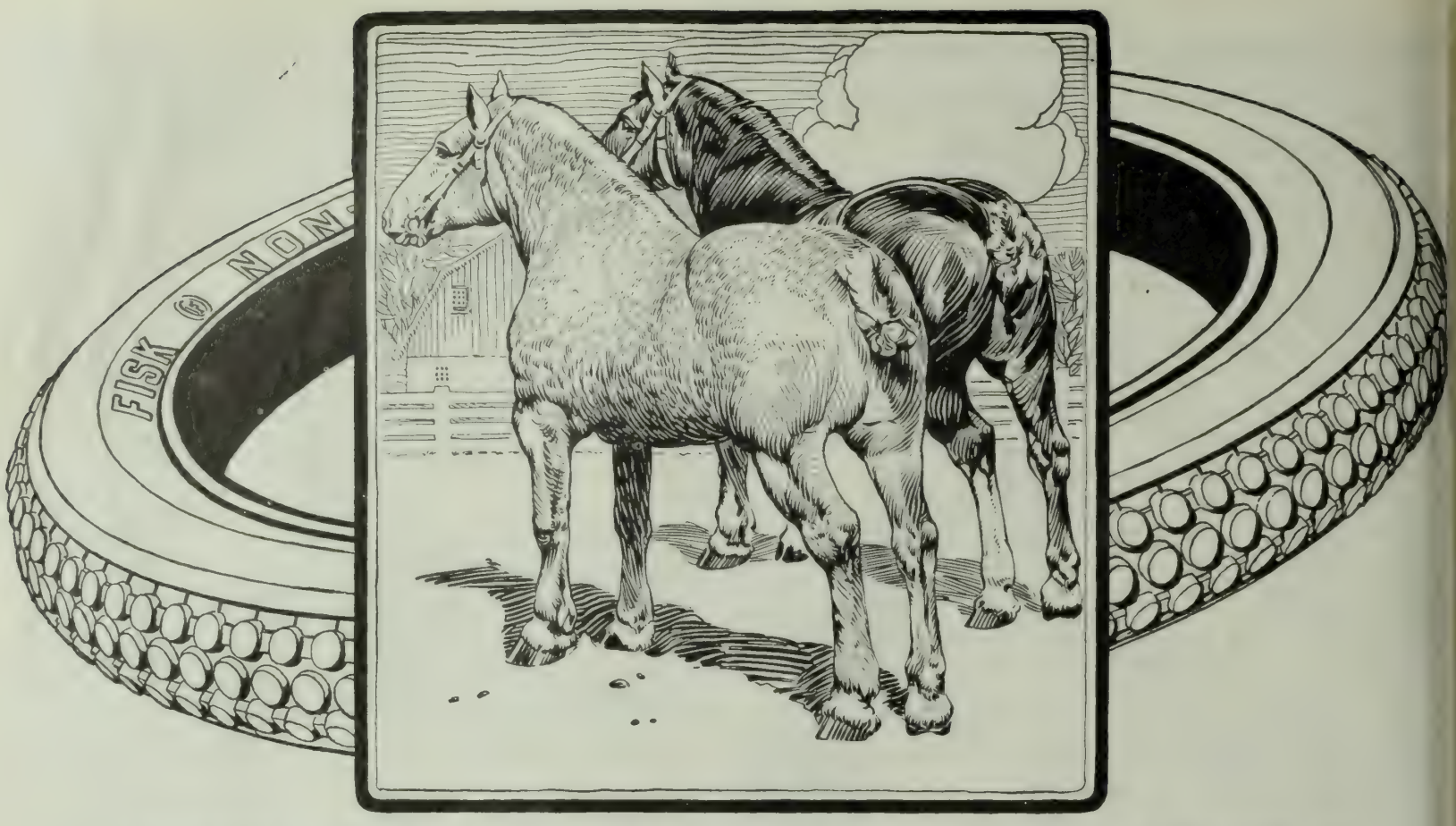
Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film; absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts means less friction and greater efficiency.

Get our Bulletin No. 78 before deciding on a pump.

KROGH MNFG. CO.

SAN FRANCISCO. LOS ANGELES.



It takes years to breed a good horse—years of knowledge of horses to obtain finally the type to meet the requirements for which the horse is intended. You don't expect the saddle horse to do the work of the Percheron—and it is just as unreasonable to compare the average automobile tire with Fisk Non-Skids.

Back of every FISK NON-SKID is an experience of 17 years of "tire breeding"

—an experience that enables us to offer you a tire of proven quality, strength and mileage, which meets every demand of the ordinary road conditions as you find them. That we deserve our reputation for quality "tire breeding" is attested by the fact that today we have the largest factory in the country for the exclusive manufacture of pneumatic tires—29 acres of floor space devoted to one ideal.

Fisk Prices Are An Important Consideration

Especially the prices for the grey Non-Skids. With their heavy traction-tread they cost *less* than the plain tread styles of many other standard makes. Price comparisons will prove to you that you can equip your car with Fisk Non-Skids on all four wheels — and get all that extra protection — for less than you may now be paying for the plain, no-protection styles.



Make Use of the FREE Service at the Fisk Branch Near You

More than 100 direct Fisk Branches in principal cities throughout the country are ready at all times to give you FREE Service, wider in scope than you get anywhere—that is a feature of the policy of Fisk organization. Inflation, inspection, air testing, changing tubes and casings, advice in the care of your tires, and so on—all free, regardless of the tire you use. Only supplies and actual repairs can be paid for. *That IS Service.* Locate the branch nearest you and make use of it.

THE FISK RUBBER COMPANY, Chicopee Falls, Mass.

Fisk Dealers Everywhere — Fisk Service Branches in** San Francisco, 1431-1439 Van Ness Ave.—Oakland, 2418 Broadway —San Jose, 280-282 N. First St.—Los Angeles, 10th & Hope Sts.—Pasadena, 722 E. Colorado St.—Portland, 54 No. Broadway—Tacoma, 725-727 Broadway—Seattle, 910-914 E. Pike St.—**More than 100 Branches cover the United States—write for complete list.

D

Vol. XCI—No. 19 Fifty-sixth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO MAY 6, 1916. LOS ANGELES

California State Library 7-1-

Poultry and Power on Two Acres.

Two acres, a two-horse power engine, a flock of chickens and turkeys, with fruit and vegetables, provide the living, give Hennings and Son more work than they can do, and have enabled them to improve their place to one of the best in the South within six years.

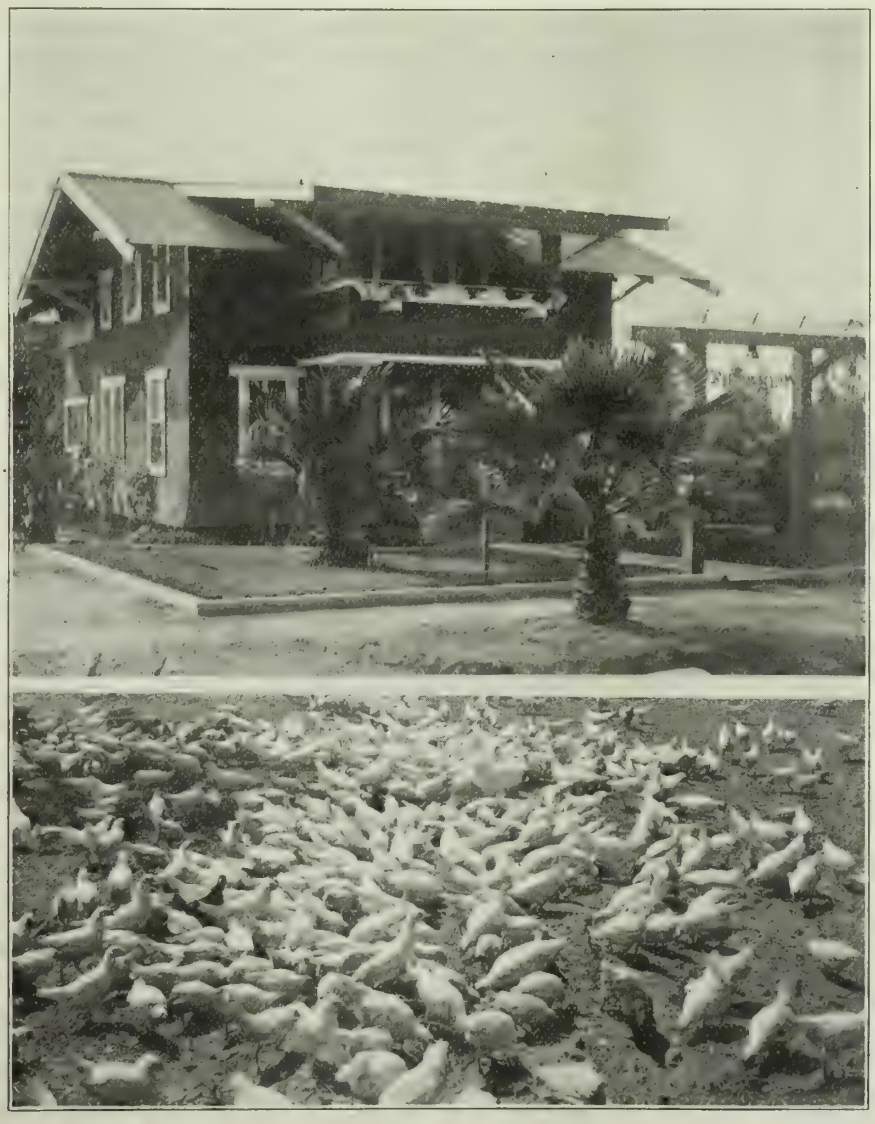
[Written for Pacific Rural Press.]

H. J. HENNINGS of San Gabriel gets more out of his two-horse-power gas engine than anyone else in the country. Even his automobile depends on the engine for air, and if the place on which Mr. Hennings makes his living from varied branches of agriculture were big enough to turn an ordinary tractor around on, we believe the engine would be hitched on by wireless to make steering easy or to start the tractor.

Poultry is the principal means of livelihood at Friedheim, the two-acre "peaceful home." There is so much work to do that Mr. Hennings and his son often have to call the wife and mother to outdoor health-giving exercise. Fruit and vegetables help along, and the flowers and lawn take some well-spent time. Every foot of their ground is made to contribute to their profits, either financial or for more enjoyable living.

The engine runs a dynamo which lights the house and outbuildings and poultry yards. It runs a washing machine, emery wheel, soldering iron, air pump, feed mixer, feed chopper, feed grinder, wood saw, ground feed sifter—well, it does it all on 8½-cent distillate, one gallon for all day's running. "I don't care how high gasoline gets—I haven't used 5 gallons of it in the past six months," says Mr. Hennings.

No lineshaft reduces efficiency of the engine—power is applied direct by belt to everything. The engine and dynamo are under cover.



Poultry, Fruits and Vegetables on two acres keep two men and an engine busily and profitably improving their home with the help of the Wife and Mother.

Electric Lights, Etc.—There are two batteries of five cells each of the latest Edison make. The dynamo generates 20 amperes at 30 volts pressure. This charges the batteries in seven hours if they have fully run down, which they don't. They can be charged at any time as a side issue to other work. The switch-board apparatus is simple as anything, but it enables Mrs. Hennings to run the voltage up high for the vacuum cleaner or the soldering iron. It also shoots the juice backward from the batteries through the dynamo, converting it into a motor which starts the engine at the turn of the switch.

The current may be run through the batteries getting the benefit of both them and the dynamo at once, or it may be run direct from the dynamo when the batteries are in other service.

Thirty-two electric lights are connected to the batteries, though only four or five are used at once. If more are desired, it is a simple matter to start the dynamo by means of the switch. Fire hazard is much reduced on this place. Mr. Hennings wired the house and place himself.

For entertainment, a "mirrorscope" is worked direct from the dynamo by two 50-candlepower lamps requiring 27½ volts. Alfred, the son, has rigged up a burglar alarm on the front gate, using a corset spring under the iron gate, which is connected with the storage batteries so that a bell rings in the house whichever way the gate is opened.

Machinery Galore.—In an opposite direction from the engine runs a belt to the washing machine in the shade outside so it is no trouble to keep clean on this farm. From the other flywheel runs a belt in the same direction to an emerywheel. Its speed of 3600 revolutions per minute is determined in half a minute by means of a watch and a handy vest-pocket speedometer. The neighbors help support the plant by bringing their tools to be ground.

The same belt wheel which runs the washing machine is hitched at another time to the air compressor on the opposite side of the engine. This puts 200 pounds pressure into a small tank. A hose leads to the garage. Everybody got the habit of stopping to blow up their bicycles, motorcycles, automobiles and tires, till it became necessary to post a sign, 1c for bikes, 5c for motorcycles, 10c for autos. The engine is also primarily responsible for the standing offer of $1000 to anyone who will find a chicken mite on the place. (They have 650 hens now and are raising 1500 chickens. There will be 3000 next year.)

A spray tank holding five gallons is hung between gaspipes connected through an old auto wheel into a kind of wheelbarrow. Liquid spray is poured in, the tank connected to the compressed air tank for a jiffy, then the houses are sprayed under 40 pounds pressure, at convenience. A 20-gallon tank for 150 pounds pressure is to replace the small one.

But the engine is hitched to the chickens in a more edible way.

(Continued on page 578.)

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ONE DOLLAR PER YEAR IN ADVANCE

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Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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W. H. SCHRADER - Advertising Manager
D. L. SCHRADER - Subscription Manager
R. E. HODGES - - Assistant Editor
J. C. LOOMIS - - Assistant Editor

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., May 2, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	.08	37.46	42.65	70	42
Red Bluff	0	19.73	23.37	88	50
Sacramento	0	18.16	19.07	86	48
San Francisco	0	27.05	21.37	82	48
San Jose	0	16.30	16.09	86	42
Fresno	0	11.73	9.01	90	50
Independence	0	10.32	8.85	84	...
San Luis Obispo	0	26.85	19.66	84	44
Los Angeles	0	19.89	15.15	80	54
San Diego	0	12.54	9.62	72	56

THE WEEK

IT IS hard for reporters to find words powerful enough to adequately express the present prosperity of the American people. It seems to be widely agreed that the phenomenon of unemployment has practically disappeared, which ought to be in itself a demonstration that the country is busy. At the end of April we are told that the monthly survey of business conditions throughout the country, as reported to the Federal Reserve Board by agents in each reserve district, shows that prosperity continued to increase during April in virtually every section of the United States. We have not space for the whole joyful narrative, but a few strong instances indicate the whole. Boston says: "Comparison with a year ago shows that the improvement is extreme"; New York: "Goods produced and sold last month probably greater than any March on record"; Philadelphia: "Trade brisk, prices rising, manufacturing plants working to capacity"; Atlanta: "Manufacturers working full time and many behind on orders"; Chicago: "Manufacturers and wholesalers enjoying good business; volume of general business continues high"; St. Louis: "Business excellent, shipments show large increase; buying power of general public has increased"; San Francisco: "Trade and financial conditions excellent."

It is surely pleasant to read such reports on this edge of the continent, where there is so much need of Eastern appetite and capital for development enterprises and where there are such large special products to minister to good living, and which require the purchasing power of prosperity for their enjoyment. The great Raisin Day celebration at Fresno at the close of last week was a fitting exposition of California's confidence in her calling to do great, unique things for the country and her courage to do them uniquely and well.

CALIFORNIA CHARACTER IN CHERRIES.

THE secret of California's advancement consists in doing one blessed thing after another, and all of them unique and characteristic. The cherry, earliest of the deciduous fruits, trips off first as an exponent of a prosperous year. On Thursday of last week California's carload of cherries sold in the Chicago market for $5470, a record-breaking figure. It is quite possible that this cherry sale may be the exponent of the attitude which Eastern buyers will assume this season toward our first fruit shipments, for surely the Eastern millions can well be unusually free buyers this year. And such attitude seems to have been foreseen by the large Eastern operators in fruits, for they have been rushing each other for supplies. As a result of rivalry among buyers for Eastern shipment, there is reported the sale of 70 acres of cherries on the trees by Fred S. Jones of Green Valley for $22,000—nearly $315 per acre, f. o. b. the top of the ladder. It will keep Fred from worrying about the price of gasoline. And still the buyer may make a lot of money. The Eastern people get very few sweet cherries except from California, for, though our production is worth less than a million dollars, it is greatest in value of all the States, and it is all sweet, while other States' products are mostly of the sour varieties. No State can touch California on the commercial sweet cherry, for though we have nothing beyond Oregon on size and quality, we are a long way farther from harvest showers and brown rot, and this distance settles the question. It may be well to keep your eye on the cherry.

EFFICIENCY.

WE HEAR much about Efficiency. He is an industrial god now making a drive on the esthetic realm. He is a reversal of the old order. Hitherto our earthly gods have moved in the opposite direction; they have rushed their hosts out from the ramparts of the Intrinsically Beautiful, across the plains of industry, wildly waving over the heads of clod-hopping industrialists broad banners emblazoned "The Beautiful for What It Is." But now the gods below have rallied their forces and are moving up the slopes, too slowly to waste breath, with pennants, too narrow to impede progress by catching too much wind, imprinted with letters which do not require too much paint: "The Beautiful for What It Does." It is the resistless, relentless advance of Efficiency!

Now, there is nothing impulsive nor impromptu about efficiency. It is deliberately planned, drawn out, trained, ground down to a feather-edge. It cuts to the quick, but is never hasty about it; it reaches the heart of a thing, but is never warmed by it; it compels admiration, but wins no love. The materialist worships it; the idealist jibes it. It has come to play its part in the world; entering and influencing, perhaps, every industry and enterprise of mankind. It may find in agriculture its greatest opportunity because agriculture is the industry of the most complex conditions and most numerous agencies. But mobilization of all these conditions and agencies will require much time and sustained effort for exact facts, the relations of them and the arrangement of them in systems—but all this work will be done. It is interesting to note that efficiency schemes, which are, so far as we can see, the very last cry in book-farming, should command such wide respect from farming people, who a generation ago were disposed to scout the practicability of even the simplest farming recipe if it were found printed in a book! It is, in fact, a striking instance of what is sometimes called "a complete reversal of the popular judgment."

GUMPTION.

BUT this question naturally arises: "It is possible that any theory and practice of measurements, calculations and tabulations can reduce farming to the exactitude of science and the perfection of mechanics?" To meet that problem with a dogma would surely be unwise, and yet it may be safe to say that, in such light as we now have, efficiency schemes can never constitute an adequate basis for farming success, though they may prove indispensably helpful thereto. Possibly that is all that is authoritatively claimed for them in any producing effort, and yet it is not toward such limited devotion to efficiency that the public mind is now running. Not only are efficiency operations sought for all material lines of production, but they are being advocated for the filling of churches, the emptying of penitentiaries, the perfection of professional service—so that the time is anticipated when either devils or appendices can be taken out of men, on the average, in one minute and seven seconds at an average cost of thirty cents.

It would be, of course, unwise to claim that such a capable efficiency could not do farming, and yet we must suggest that efficiency is not a creator of work; it is only a way of working, and though it may prescribe method, it can never displace design and initiative. We build no general argument on that proposition; we sustain it concretely by reference to an agricultural quality, which underlies all farming success. It is the quality of gumption. The word has a slangy sound, and loses no music in our ears thereby, but it is really a good dictionary word, and Carlyle, who had a good ear for 70-centimeter words, used it effectively—we almost said efficiently. And gumption is a word of grand dictionary definitions, to wit: "ready perception and discrimination; quick discernment and adoption of the elements of practical success; acuteness and common sense."

Each of these definitions is descriptive of some factor of success in farming, and probably all of them have been recognized as essentials to good husbandry since writing began. On the whole, then, in most human affairs, gumption is the endowment of success; efficiency-schemes the methods; efficiency the measure of it. We have no space to rummage the antiquities, but will say, with a reviser of Solomon, that gumption is the principal thing.

FARMING NEEDS BOTH.

IT NEEDS no argument to convince the open mind that the superior farming of the future will stand upon gumption and efficiency. In the two previous issues of the Rural Press we have emphasized efficiency, in the details of rotation principles and achievements of Prof. Gilmore, and in the organization of fruit-picking by Wm. Curtis Clark. In this issue the emphasis falls on gumption, as illustrated by the achievements of the Hennings' on their two-acre

farm near San Gabriel. As it would need a microscope to plot the elements of efficiency in curves and tabulations on a two-acre farm, the account which we give on other pages this week becomes a clearer demonstration of the achievement of unwritten and unmeasured gumption. To transform cheap distillate into power, and express power in such terms of poultry products and prosperity; to banish from small farming so much of the drudgery which too often is the chief component of it; to live in light and reasonable leisure because one can use his joy and mastery in mechanics to save his muscles; to be so good in business that even the wind generated on the place is turned into money—these, and the many other achievements which the account records, are suggestions of the agricultural uses of gumption. In other words, they are demonstrations of the pertinence of the personal equation in farming, which cannot be displaced by any amount of analysis, tabulation, rule-making and computing. We are glad to emphasize such an illustration, because we fear that there is danger of putting too much faith in farming by formularies. No one can either make an efficient formula, or use it efficiently, without gumption. On the other hand, to be naturally endowed with a modicum of gumption, and to draw continually more and more of it from study and experience, is to demonstrate mastery of things in their relations—and to practice that mastery, along well determined lines of successful action, is efficiency.

GUMPTION IN PRICE-FIXING.

ONE reason why gumption is indispensable in farming is because the business is so full of situations which cannot be put through efficiency processes. Efficiency properly calculated will hit the mark if you know where the mark is, or efficiency will show you exactly where the mark ought to be and hit that place—but suppose the mark is not there? For instance, there is no mark which it is now more important to hit squarely than the "minimum price" for prunes—which means the price which will induce enough growers to part company with their prunes to a co-operative selling corporation, to make such a corporation potent and successful. Theoretically, efficiency-processes will indicate clearly where that price ought to be. Take the total of investment in an acre of bearing trees and figure a fair interest on it; add to that taxes, insurance on buildings, etc.; add to that a safe figure for depreciation of buildings, working agencies and appliances of all kinds; add to that the operating expenses of that acre from plow to delivered product, including cost of management. Divide the sum of these items by the number of pounds in an average crop of prunes, and you will have the efficiency-prophecy as to what the minimum price of prunes should be—that is, when you sell your prunes to yourself as a member of a growers' selling corporation. This should be the price because it fully covers cost of production, including the earnings of your invested money and of yourself as working manager. Obviously, in the case of an association, the price should be drawn from data covering thousands of acres of prunes not from one acre, but we will not go into that now. When we have a figure which covers cost of properly invested and prosecuted production, we may call it the "efficiency minimum price," because it has been correctly calculated to include all economies, and to exclude all wastes and extravagances. Now, what is the next move? Efficiency in production has closed; efficiency in marketing must begin. As you as producer are to do the marketing and to have your share of the profits, your basis in your selling enterprise should be the cost of production, and then you should go to it and make all you can—with surety that all the stock will be disposed of and the public made hungry for more. In a whole-hearted and courageous co-operation, efficiently conducted, the "minimum price" should be the figure which covers all costs when production ceases and marketing begins, and this would be the "efficiency price"—taking some liberty with the word "efficiency," which is pardonable until some one tells us just what the word means in its new uses.

Now, what will happen if the projectors of the prune-selling corporation offer to the growers the "efficiency price," which producers should receive for the product when they turn it over to themselves as a selling concern? As soon as the turn-over price is fixed, dealers will offer Tom, Dick and Harry a quarter of a cent more on a three-year contract perhaps. They will sign up Harry, befuddle Dick so he will not sign anything, and brave, conscientious Tom will have to try co-operating all by his lonely. Manifestly it may be difficult to assure all people that they should draw their profits from the selling, and not from the producing side of their co-operative enterprise. The directors, therefore, may have to include in their minimum price profits sufficient to save Harry from giving the dealer most of the money which he should have for himself, and stiffen up Dick so that he will help Tom carry through the only scheme which will get what prunes are worth and prepare the way to sell more and more prunes as crops increase in volume. If efficiency will not do this, what will do it? Only one thing known to us and that is gumption. Gumption will teach co-operating growers not to expect too high minimum price. Gumption alone can tell the projectors what can be offered safely in view of a large year's product. What the prune situation needs is gumption and plenty of it, well distributed. Without gumption all around there can be no efficiency in the pending prune project. If you doubt it, read again the definitions of gumption given above.

Queries and Replies.

Querists must give name and address.

Balm of Gilead Borer.

To the Editor: My Balm of Gilead trees are losing all their leaves and a black substance oozes out of the bark and runs clear down the trunk.—J. R. M., Oleander.

Similar injuries to bark and subsequent yellowing of the leaves have been traced to boring larvae which cause sap-pockets under the mark is, or efficiency will show you ex- Cut into the places where the flow starts; and if you find worms, cut around the wounds to sound bark—covering the places with Bordeaux paste, tree-paint, or grafting wax.

ACREAGE OF FRUITS, BEARING AND NON-BEARING, IN CALIFORNIA, 1915.

[Compiled by Deputy State Horticultural Commissioner Geo. P. Weldon, from reports of county horticultural commissioners, and Growers' Information Bureau.]

	APPLES		APRICOTS		BERRIES		CHERRIES		FIGS		LEMONS		OLIVES		ORANGES		PEACHES		PEARS		PLUMS		PRUNES		WALNUTS		ALMONDS	
County	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.	B.	N-B.
Alameda	130	.....	5333	980	95	...	1000	160	....	....	4	.....	50	.....	10	.....	40	.....	437	250	125	20	1704	250	100	.....	385	.....
Butte	500	400	85	20	80	...	85	35	155	80	25	30	1900	2100	2000	340	3000	775	400	.....	100	125	2000	2000	20	40	2000	900
Calusa	.....	.....	30	15	.....	...	.....	.....	20	.....	.....	.....	.....	.....	40	300	300	200	30	20	.....	20	1000	3000	40	50	300	2500
Contra Costa	160	96	500	250	20	20	200	88	20	8	5	6	143	5	13	5	600	290	800	917	100	51	1100	330	30	1300	1750	1000
El Dorado	350	225	.....	.....	.....	...	80	40	.....	.....	.....	.....	18	15	.....	.....	300	25	500	1000	300	550	.....	.....	10	30	.....	.....
Fresno	250	30	2137	613	.....	...	.....	.....	2919	....	75	.....	502	.....	1788	.....	35000	.....	.....	.....	343	....	981	.....	159	.....	.....	.....
Glenn	78	145	200	270	.....	...	.....	.....	15	355	58	320	42	230	75	2830	150	2750	25	593	.....	....	210	820	5	170	200	1720
Humboldt	1100	450	.....	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30	450	.....	.....
Imperial	.....	.....	110	335	.....	...	.....	.....	52	113	13	9	52	143	73	198	32	198	37	103	18	25	.....	.....	.....	.....	.....	.....
Kern	100	1957	230	225	.....	...	.....	.....	14	57	.....	.....	40	525	450	1222	660	410	190	992	50	100	200	400	.....	100	.....	130
Kings	.....	.....	2118	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	360	.....	.....	7183	.....	.....	.....	.....	.....	1109	.....	.....	.....	.....	.....
Lake	242	10	31	2	20	...	10	....	10	3	.....	.....	45	.....	2	.....	150	51	1460	1000	.....	....	833	386	288	304	285	182
Los Angeles	927	650	1472	441	4296	...	.....	.....	84	69	3694	4965	2100	208	24407	8742	2922	3614	311	2388	491	295	229	21	8901	6240	437	.....
Madera	200	.....	200	.....	15	...	.....	.....	150	125	.....	.....	175	690	10	.....	550	900	15	.....	.....	45	75	.....	.....	47	50	.....
Mendocino	450	615	25	45	.....	...	50	25	20	25	.....	.....	10	7	.....	.....	37	145	255	725	35	....	335	275	10	.....	450	410
Merced	70	37	230	110	60	...	7	10	500	540	14	10	194	70	49	40	5000	1121	85	79	42	44	40	170	35	185	25	19
Modoc	265	335	.....	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Monterey	3000	1150	800	600	150	...	10	5	.....	.....	.....	.....	.....	.....	.....	.....	100	.....	80	100	.....	....	40	25	5	15	10	35
Napa	400	120	160	90	59	12	350	125	50	6	12	13	200	.....	20	23	500	82	425	235	100	24	3000	1200	160	90	.....	.....
Nevada	1500	250	15	5	50	10	75	20	20	5	.....	.....	5	.....	10	.....	350	300	600	1200	110	240	110	.....	20	50	25	.....
Orange	150	230	1600	160	200	...	.....	.....	.....	.....	3000	1550	386	.....	9806	6500	50	1000	.....	.....	25	....	.....	.....	12000	1900	.....	.....
Placer	450	.....	42	.....	500	...	350	.....	45	.....	.....	.....	320	.....	350	.....	7000	.....	1500	.....	5500	....	.....	.....	.....	.....	250	.....
Riverside	817	2522	2688	3323	23	...	29	334	7	16	2586	3368	1559	503	16363	3112	1837	1057	310	638	30	39	490	125	410	1592	999	426
Sacramento	400	100	490	75	3000	...	370	200	10	....	15	20	720	740	950	800	1880	950	3000	2000	1350	600	690	500	.....	150	1060	750
San Benito	400	25	2500	1000	300	...	100	25	.....	.....	.....	.....	.....	.....	.....	.....	700	200	350	100	.....	....	3000	1000	30	150	200	100
San Bernardino	1258	6550	1652	830	.....	...	43	80	.....	....	2602	2335	572	652	33390	7717	6703	2712	115	319	42	31	.....	85	649	1407	.....	.....
San Diego	1110	221	113	98	.....	...	8	10	10	16	3016	1604	1500	74	1262	114	503	255	118	67	17	37	48	54	116	216	85	21
San Joaquin	20	70	1000	.....	.....	...	1800	700	80	25	.....	20	600	300	20	50	7000	6000	800	1500	500	1000	600	1500	200	2000	2000	1000
San Luis Obispo	345	50	117	240	.....	...	.....	.....	.....	.....	10	.....	40	.....	7	.....	50	500	75	3285	.....	....	50	279	106	60	.....	.....
Santa Barbara	400	100	150	170	.....	...	160	125	.....	.....	900.	350	450	105	5	2	.....	.....	20	.....	.....	.....	.....	.....	4800	800	238	75
Santa Clara	342	407	8434	388	.....	...	1876	986	46	26	20	15	135	52	18	11	5463	375	1400	185	2915	162	54200	4206	563	196	.....	.....
Santa Cruz	15500	1100	1200	1000	500	...	150	200	.....	.....	15	60	.....	.....	1	1	100	100	50	325	.....	....	300	.....	.....	.....	35	.....
Shasta	323	114	10	7	110	...	6	7	10	5	.....	.....	140	250	5	3	324	454	100	15	25	150	760	130	37	40	5	1
Siskiyou	650	345	15	.....	80	...	45	30	.....	.....	.....	.....	.....	.....	.....	.....	175	25	40	10	65	50	15	5	2	12	1000	415
Solano	.....	.....	1300	150	.....	...	700	300	.....	.....	.....	20	20	.....	10	20	4200	600	1000	230	2521	1520	4345	1800	.....	.....	106	17
Sonoma	5007	3771	582	23	1500	...	655	589	102	....	8	2	700	.....	106	15	700	419	1097	554	102	45	7687	3004	328	278	912	1109
Stanislaus	119	5	388	217	85	...	33	27	346	37	7	2	74	45	105	50	3754	399	138	65	14	75	52	146	20	379	1500	998
Sutter	157	20	20	.....	.....	...	42	27	179	.....	.....	.....	50	25	.....	.....	2352	2756	221	109	80	3	787	888	15	239	500	400
Tehama	500	50	600	50	.....	...	.....	.....	100	.....	.....	.....	1500	450	225	75	3500	600	350	100	100	.....	1200	500	.....	.....	30	220
Tulare	375	155	325	350	15	20	10	20	325	685	625	775	800	3050	19750	22550	7845	1500	45	30	450	250	2550	1450	10	250	.....	.....
Ventura	.....	.....	2016	2421	.....	...	.....	.....	.....	.....	1713	2879	.....	.....	1386	862	.....	.....	.....	.....	.....	.....	.....	.....	5064	1412	3500	1100
Yolo	30	.....	1900	25	260	...	.....	.....	300	15	.....	.....	450	75	80	15	1950	100	900	125	600	150	1450	225	40	10	135	50
Yuba	430	75	80	25	50	50	25	25	120	200	25	.....	350	900	160	30	765	300	500	390	260	100	280	200	250	200	150	1895
Total	38410	22430	40898	14553	10468	112	8269	4198	5709	2113	18442	18228	15842	11574	112926	55527	113725	31163	17779	19649	16410	5751	91470	24774	34453	20662	18602	15475

Irrigating Steep Orchards.

[Written for Pacific Rural Press.]

Contour and basin irrigation combined is practiced by D. C. Lefferts of the Redlands district, while the contour system has been discarded in favor of surface pipe and basins in the National Orange Co.'s orchard in the Corona district.

Part of Mr. Lefferts' land is so steep that two basins were made per tree to avoid digging into the subsoil near the upper end of the basin. A furrow is contoured above the upper basin for each row and the water cut in with a hoe. Water is run in a 16-inch stream first to the lower end of the ditch where one man divides it into four streams, one per basin. When they are full, the stream is cut into the next four.

These basins are never cultivated but are filled with spoiled alfalfa hay in lieu of manure which has been too expensive, except the year the basins were first filled with it, when they were made in Jan., 1913.

Surface Pipe and Basins.—The 780-acre orchard of the National Orange Co. near Corona lies on a beautiful slope next to the hills, and was for years irrigated by contour furrows. Basins were made between the trees in the spring of 1915 and most of the livestock disposed of, since there would be no plowing or cultivating. Some of the basins were dug down at their upper side and leveed at their lower side so they would hold water about a foot deep. Others were made two basins between each two trees, one being higher than the other, thus avoiding the deep digging required for the larger basins. In every case, each tree was left on a three-foot shelf between basins so water would not come close to the trunks.

The rows run straight toward the mountains, about 180 trees in each row. The orchard is divided crosswise in three sections, the lowest and less steep having 80 trees per row, the others having about 50 each.

For irrigation, about 100 rows in each section have been assigned per man, though this is probably increased this season. Each man has a string of surface pipe long enough to reach from the ditch at the top of his section, to the lower end, 80 or 50 trees as the case may be.

One man handled 25 inches of water before the summer was over, according to D. Rycraft, who has charge of the irrigation; though at first it was a bit awkward. Pipe lengths were such that though the distance between trees up and down the slope varied with its steepness, one joint would always carry water to the next basin below. The first one below the ditch would be filled, then a joint added to carry water to the next. There was plenty of time to get a joint from the row last irrigated while the basin filled. When near the bottom, trenches would be dug so water would overflow from each of the last few basins into the next while the irrigator would go back to the ditch and change the water to run into the next row similarly.

In about 20 or 21 days, a man finished his block; but the first row in the next block would then be ready for another irrigation. He would simply go on irrigating it and so on until he had worked several blocks. Such a system required that an entire line of pipe be hauled back to the other side of the orchard every 21 days.

The basins were always moist when the next irrigation came due, because they were filled with mulch; but that is another story.

Old Muscats Double Crops.

[Written for Pacific Rural Press.]

Twelve acres of Muscats, nine of which are over 30 years old, belonging to G. M. Flint of Fresno county, hadn't borne a ton per acre in any of the three seasons preceding 1915. They bore 9654 trays in 1915 including the three acres of young vines which did not have much crop; and because they were picked after Sept. 14, each tray carried over six pounds of raisins. The crop weighed 30 tons 1500 pounds. The increase was very largely due to changes along three lines: pruning, irrigation and holeing.

The pruning was done so that a large part of the crop would have rested on the ground. No tall trunks with long arms to impede sap flow to the leaves and fruit. To prevent bunches resting on the ground, a man worked 10 days digging big holes four feet in diameter around all the vines. When the hot winds came, which did evaporate such an excess of moisture from the grapes in many vineyards that they "sunburned," Mr. Flint's crop was protected.

There was another element in the great freedom of this vineyard from sunburn. Whereas, Mr. Flint, along with his neighbors, had a habit of irrigating early in April, he investigated the condition of the soil before irrigating. A soil auger showed the ground soaked. So 20 rows on the north end were not irrigated until June. That 20 rows bore the largest berries, the fewest water berries, and the biggest bunches. The soil had dried out by June so that surface roots, induced to grow by the early saturation of the ground, would have been compelled to draw sap from the deeper roots to the detriment of the crop, but June watering kept them busy.

Grapes Instead of Wood Growth. The main reason for the greatly increased crop was the clipping of the terminal buds shortly after the "forms of grape bunches" appeared. The children did this using a little knife. Mr. Flint says that one of them could clip two acres per day.

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The effect of the clipping or pinching while the tissue of the young growth was soft, was to suddenly divert sap flow into the "forms of bunches" and to enlarge the sap channels in that direction so they continued all summer to divert much more than usual into the grapes. Pinching a little later after the young growth hardened, would have prevented the enlarging of the channels.

Shortly after the shock of the pinching was adjusted by the vines, laterals were put forth from the shoots, and these bore an extra large second crop. Ordinarily, the second crop is so late that it cannot well be picked for raisins, but the pinching started laterals so early that the second crop ripened in time to pick with the first crop and were dried. This was further helped by delay in ripening of first crop bunches hanging in the holes because they were sheltered by such abundant foliage.

This spring, about April 25, the grape shoots were pinched back as previously, and again several days later to catch the shoots which were not out far enough at the first pinching. He will not irrigate at all until June, his soil is not dry, and he has prospects for another fine crop.

Time to Plant Avocados.

[Written for Pacific Rural Press.]

Avocado planting time is late March, April, and May, says L. E. Nigh, who has for many years specialized on this fruit for the Armstrong nurseries of Ontario.

Trees grown in boxes about 5x5x6 inches are preferred because, as a rule, they have developed a mass of fine feeder roots, having been grown in a mixture of 1-3 soil, 1-3 sawdust, and 1-3 sand with a very little dried blood fertilizer.

Trees grown in the open and heavily manured have not worked for a living and consequently have a few big roots with very few feeders. Mr. Nigh believes that feeders do not grow well from these big roots, but the tree "invariably sends out new roots from the center of the ball." However, where field-grown trees have plenty of feeders they are as good as any.

Plant in soil well drained either naturally or artificially without trying to straighten out the roots, whether of field grown and balled trees, or those grown in boxes. If there is any tendency toward sour soil, apply some air-slaked lime around the tree. Fill around the roots with top soil which will immediately furnish food. Subsoil is not fit to put next to the roots until it has aerated a season. In light soil, it is well to set the trees a few inches deeper than in the nursery. Thorough soaking after planting is needed to get the dirt close to roots and avoid their drying out.

Protection. — Protect the trunks from the sun and wind with tree protectors; and the tender varieties should be shaded on the top, south and west sides during the first season with thin burlap tacked over four stakes set about the tree. This is for both summer and winter protection.

Take off most of the large leaves, especially if planted in hot weather or places exposed to much wind. If left on, they would evaporate too much of the water stored in trunk and roots, before newly started rootlets could gather enough to compensate for evaporation.

Irrigate every two weeks during the first season, with variations according to climate and natural soil moisture, being careful not to waterlog the soil. Monthly irrigation is enough after the first season.

No pruning is necessary at planting, and all future pruning will be simply to balance the tree and keep it low and bushy; so it will protect the fruit better from sunburn and from injury by swinging in the wind; also to make picking easier.

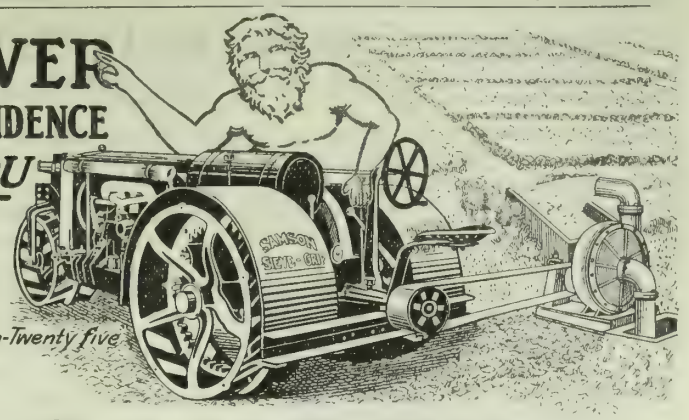
PRUNE OR PEA APHIDS.

To the Editor: Pale green lice which get small wings as they grow larger, cover the under side of my plum and prune leaves and kill them. Last year they killed my peas, and are in the garden again.—J. M. S., Ceres.

[They are the destructive pea aphids. Spraying at first appearance is far more effective than waiting till leaves are covered, on account of their rapid multiplication. Spray upwards with 1 pound blackleaf 40 mixed cold with 1 gallon liquid cresol soap and 200 gallons water.—Editors.]

The new Peach Ass'n proposes to grade the dried fruit into four different qualities and to put up a family pack containing 4 pounds. The grading will be inspected and labeled by the State.

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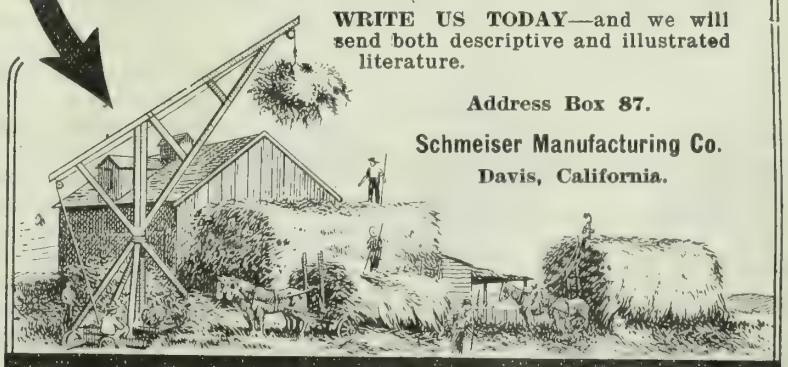
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On receipt of $1.00 we will send a sample gallon can, all charges prepaid, to any express office in California."

Deciduous Crop and Market Report.

[Written for Pacific Rural Press.]

The extraordinary prosperity of the East makes its unusually busy and highly paid wage-earners able as seldom before to indulge freely in the luxury of California fruits, fresh, canned, and dried. That they will comprise a highly profitable market for California farm products is reasonably assured—this in addition to possible developments in the foreign countries which are destroying more than they produce, but which will continue to eat whether or no.

Prospects for foreign sales were far more unsettled and the attempt more hazardous a year ago than now. Yet last year's crops moved off surprisingly well.

Supplement a healthy consuming market with a general shortage of fruit crops, not only in California but also to some extent in the East, and we have a very hopeful season ahead.

Cherries are moving in considerable quantity out of the State and fabulous prices have been paid as usual for the first few shipments. The crop for the State as a whole is light, perhaps 50 per cent. Santa Clara reports all varieties very light as do Placer county and the Sacramento river orchards. Suisun and Vacaville will go heavier than last year by 25 per cent. Aside from Santa Clara, San Joaquin county is the heaviest producer. The estimate for the latter is given at 25 per cent of normal in the tabulated crop report issued by Geo. P. Weldon, Chief Deputy State Horticultural Commissioner as compiled from reports of the county horticultural commissioners.

Apricots for eastern shipment will soon be moving at a rate depending on the prospective prices for canning and dried fruit. The apricot growers' Information Bureau estimates that there will be only 60 per cent of last year's crop in the State. With the prune-apricot organization launched, growers of dried and canning fruits are holding for such prices as will insure a minimum supply of shipping fruit and thus hold up Eastern prices. Santa Clara, with 21 per cent of the acreage as figured out by Mr. Weldon, has present prospects for only 50 per cent of a crop while Riverside, Yolo, San Benito, and Ventura with about 6 per cent each have 40 per cent prospects, and Alameda with 14 per cent of the acreage is on the way to half a crop. Pajaro Valley has many orchards which are total failures and as a whole may not be over 15 per cent.

Apples in cold storage far exceed the quantity of a year ago, but can scarcely depress the market for the coming crop, either for canning, drying, or shipping. The strong hand exhibited last season by the apple organizations of the Watsonville, Sonoma, and Beaumont districts augurs well for the present season's marketing. Santa Cruz with 51 per cent of the State acreage according to the horticultural commissioners has an 80 per cent crop, and Monterey with 12 per cent and Sonoma with 16 per cent have present promise of a ¾ crop or less. In the Watsonville district Bellflowers can not exceed a 40 per cent crop, while Newtowns may be 75 per cent according to our own representative.

Plum acreage in Placer county equals 39 per cent of the State and the estimate is an 80 per cent crop as given in the tabulated report. Solano has prospects now for a fairly good crop. Sacramento and Yolo with 8 and 4 per cent of the State acreage respectively have had good conditions with present prospects of a 75 per cent crop. Tragedies, Climax, Duke, and Diamond are generally full crops, though some varieties fall to 20 per cent.

Peaches are spectacular. With all their hoariness due to the preposterous prices heretofore prevailing, spot peaches are moving freely now at 5 cents, partly due to a clean-up of other fruit, but mostly due to the evident preliminary success of the growers' organization which guarantees a 5-cent minimum. The holdover that has year after year been used as a club to squelch ambitious holders of dried fruit, is dwindling away. Butte county reports 30 tons left. Notwithstanding the havoc wrought by little-leaf, blight, etc., in which Fresno county with 29 per cent of the State acreage has been the chief sufferer, the state crop as a whole has a chance of 75 per cent. Fresno reports only 50 per cent, partly due to bad weather at spraying time. Muirs seem generally nearly a full crop. Fresno growers report canning peaches at 65 per cent. If orchards had been better pruned, cultivated, fertilized and sprayed last season, the good prices ahead would be making more money for the growers, as was pointed out last summer in Pacific Rural Press.

Prunes for the State are estimated at 65 per cent of last year which was light, and there is no doubt that extra good prices will be received for the coming crop. This position will be strengthened if the proposed organization meets the necessary approval of growers. However, it is becoming a problem to keep Santa Clara county orchards bearing well, though perhaps judicious pruning might make a startling difference if applied all over this Valley where over 55 per cent of the acreage lies. The prunes now on the trees are most likely to stick. Butte county also reports trouble with the old trees. But her young trees seem well set. Their crop for this year is estimated around 1800 tons or 2-3 of last year's crop. Sonoma and Napa as well as the Sacramento Valley have very light crops; but Tulare county is fortunate with nearly a normal crop.

Pears will probably always have a strong market owing to their use in canning, drying, and fresh shipment, combined with the difficulty of getting men to cut out pear blight without spreading it. Some scab has shown up, but even this merely shuts the fruit out of the shipping class. A ¾ normal crop is likely for the State, though Sacramento with 18 per cent of the total acreage is estimated at 70. The Vacaville and Suisun crops are reported twice last year's.

Grapes promise well for table and raisin varieties, both as to crops and markets. Tokays and Malagas have large bunches and lots of them. The table-grape market is benefited by the experience last season of shipping them under the law providing for 17 per cent sugar. The markets have learned not to fear sour grapes. The vineyards are in good condition. The Raisin Co. has 5,000 tons more on hand than last year owing to the 30,000 tons more than normal that were produced. Such a crop is not to be expected this year. Mildew, however, which hurt last year, is being generally prevented by early sulphuring.

Almonds are mighty short in Butte county—estimates being made of only 15 or 20 cars from that district. In Yolo, Contra Costa, and San Joaquin counties, each of which also has about 12 per cent of the State's acreage, the crop is 50 per cent or more, though less than that

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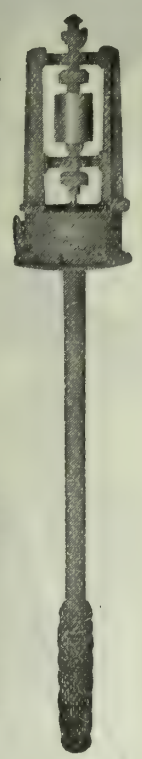
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in San Joaquin. Paso Robles reports a very heavy crop, about 70 tons in prospect or double last year's. Colusa also reports good crops. The State crop may reach 50 per cent of normal.

EXCLUDE ALFALFA WEEVIL.

To the Editor: The writer has just returned from an important conference of quarantine representatives of Ariz., Cal., Col., Ida., Mont., Utah, and Wyo., held in Salt Lake City, April 20 and 21. This conference was called by Governor Wm. Spry of Utah, for the purpose of arriving at some uniform regulations governing the entrance of products liable to carry alfalfa weevil into the state.

The conference brought out the fact that there is grave danger of the weevil gaining entrance in sacks of potatoes, because green alfalfa is often used to cover the potatoes, as tules are used in California. In Montana a number of weevils have been taken in potato cars. It was agreed that some restrictions should therefore be placed on the shipping of potatoes from Utah into other states, and that such restriction should compel the screening of all potatoes before shipment, and transference to clean sacks, the state inspector of Utah to certify under oath to this work being done.

Emigrants moving from an alfalfa weevil state are apt to use hay in packing goods or cars, hence the seeming necessity for restrictive quarantine measures in this case. It was agreed that the state horticultural inspector of Utah should certify, under oath, that every carload of emigrant movables was free from material liable to carry alfalfa weevil, before it could leave the state.

No good reason could be given by anyone present for a quarantine on alfalfa seed, bees, or grain.

Every state except Utah favored an absolute quarantine on hay and cereal straw. All of them favored restricted quarantine on nursery stock, potatoes, livestock, emigrant movables.

The conference was characterized by a spirit of fairness throughout, and the practically unanimous action of those present indicates the possibility of more uniform regulations in the western states.

Sacramento. **Geo. P. Weldon.**

PREVENTS ONION SEEDS.

To the Editor: I have noticed inquiries in your paper about onions running to seed, and I should like to give my experience if you think it would help anyone. When I plant either old sprouted onions or fresh onion sets, I always watch my onion rows and whenever a seed stem appears with pointed bud on top, I cut it off as close to the ground as I can. The same onion never sends up two seed stems; and if the sets have plenty of moisture, they will make big onions in the usual way after the seed stem is gone. Otherwise, they would all go to seed with no onion left at the bottom. And the sprouted onions will (if the seed stems are kept cut out) make quite a quantity of smaller onions that are fair size to use, and keep well all winter when stored for home use.

Pope Valley. **Mrs. S. P. Barnett.**

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The result of installing construction, which is at best only temporary to effect a saving of a few cents on the initial cost.



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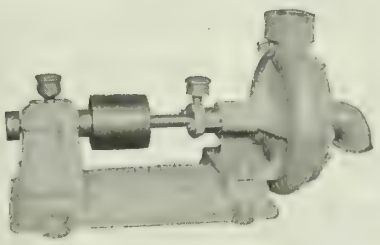
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1916 SMYRNA FIGS

Mr. Grower, how many will your trees produce this season? They have brought as high as ten cents per pound in the sweat-box on account of the war interfering with importations. You have done your pruning, plowing, irrigating and cultivating, but this expense will be wasted, unless you secure a sufficient supply of **PROFICHI FIGS** of the right varieties. The Mamme crop was short this season and the **PROFICHI** crop will be short as a consequence. I have a larger Capri orchard than my Smyrna trees require and will have a surplus of **PROFICHI FIGS** for sale. After spending your time and labor to secure a crop, can you afford to lose a $200 a ton crop by neglecting to secure the necessary **PROFICHI FIGS?** Limited quantity, June delivery, for sale. Order now.

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Mechanical Power on the Farm.

HANDLES BULK GRAIN FROM COMBINED HARVESTER.

[Written for Pacific Rural Press.]

A tractor-hauled combined harvester cuts and threshes 1000 bushels of grain per day for J. W. Jennings of the Ramina ranch at Tehachapi. This grain is hauled without sacking, directly to the elevator erected on the railroad by the ranch company. The saving of sacks and labor the first year (1915) on the 2500 acres, paid for complete installation of the elevator and conveying system together with bins and cleaning machine and smutter. The total cost of these was nearly $2,000.

A 50-bushel hopper was built under the harvester grain discharge. A spout from this discharged into a wagon driving alongside the harvester. At the elevator the grain was dumped by allowing the hind wheels to drop into a small chute. A rubber belt with buckets carried the grain into the cleaning and smutting machine; and thence a conveyor or elevator dumped it into the bins. This installation can be made for $25, says Mr. Jennings, plus the cost of the cleaning machine and a 2½ to 5 h.p. engine to run it. The grain is conveyed by machinery from bins to cars.

Owing to the distance, three four-horse teams are used. Two are continuously hauling while the other loads the wagons.

Saves $47.30 per Day.—The cost of the teams is figured at $6.50 per day including the driver. An extra man at the warehouse, and fuel for the distillate engine there are figured at $5, making a total cost of $24.50 per day to handle 1000 bushels of grain from harvester to bins.

The cost by the old system was 3 teams @ $6.50, sacks for 1000 bushels $36.80, man on harvester as sack gig $2, sack sewer $3, man to pile sacks in warehouse $2.50. This totals $63.80 per day besides the loss of 10 per cent of sacks by mice equaling $8 per day. The advantage in favor of bulk handling is $47.30 per 1000-bushel day.

Loss of grain in sacking on the harvester is avoided, and it is not re-handled to run through the cleaning machine, both of which are big savings. In case of storms the grain is all under cover.

"I am satisfied from my own experience," says Mr. Jennings, "that every grain farmer should, by himself or co-operating with others, equip himself to handle grain in bulk."

TRACTOR SPADES FURROW BOTTOM.

[Written for Pacific Rural Press.]

A plowpan is pretty general in California. It is caused mostly by plowing always the same depth so that year after year the walking of horses in the bottom of furrows, and the pressure of plows on the bottom as they lift and turn the top dirt, has made a hard layer under the plowed ground. Roots have more or less trouble to penetrate this layer; water does not drain through it, nor does subsoil fill up with water so well in the wet season. In the dry season, the subsoil moisture does not come up through it so well.

This has been a problem in the transition from horse plowing to tractor plowing. Some tractors have partially avoided it by running on the unplowed ground ahead of the plows. The objection to this on wet or easily packed soil is that it is likely to turn over in chunks. These become non-productive injurious clods if not worked down at once. This objection has less weight, perhaps, with track-laying types. Another solution has been for the tractor bull wheel to run in the furrow. This bull wheel has lugs which spade up the bottom of the furrow more or less and leave it loose.

Even where a gang plow is used and the plow pan of only one furrow in several is loosened, this affords drainage into the subsoil reservoir whence moisture will be drawn in dry seasons. Anyway, after several years, most of the plowpan would be broken up by this means.

But in another way, tractor plowing is eliminating this plowpan. One does not have to be merciful to a tractor up to its reasonable limits. Tractor plowing is deeper plowing, in which the plowpan is turned up and mixed with the other soil year by year. The subsoil is opened to roots which in turn make it more pliable for other roots and permit its locked up fertility to be worked into available forms.

Running in the furrow, especially on soft land, reduces appreciably the loss of power due to slippage, though it requires some leveling device for the lubrication.

"We tried to run the bull wheel on the land," says L. C. Tuck of Dixon, who operates a Big Bull tractor with lugs on the wheels, "but the land over which the wheel passed turned up cloddy. With the wheel in furrow, there was less slippage and the land was turned over loose and in fine condition."



For Dependable Ranch Supplies of All Kinds, No Firm Can Compare with

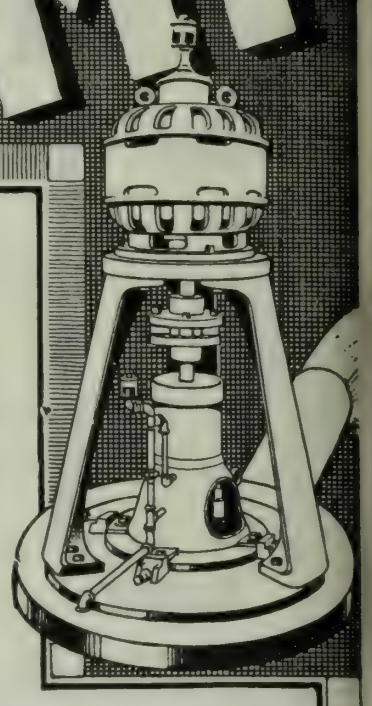
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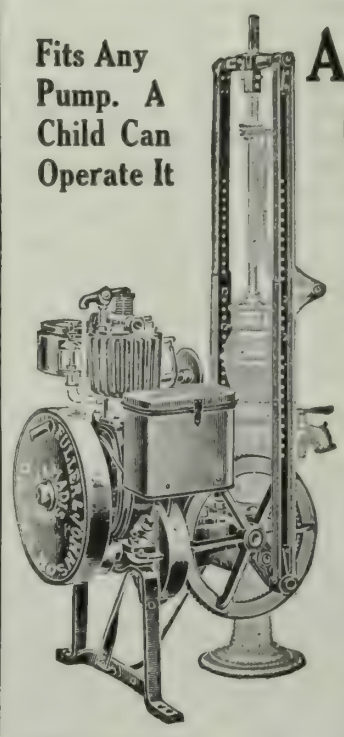
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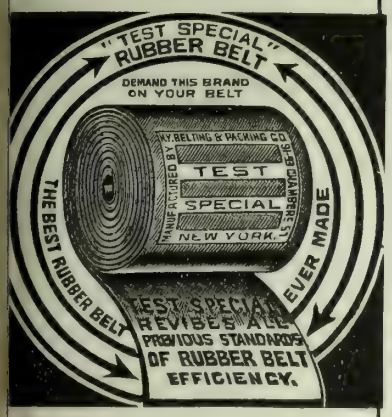
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OIL FROM ASPHALT-BASE CRUDE WINS IN ENGLAND.

It would seem that Pacific Coast motorists are not the only ones who believe in oil made from asphalt-base crude.

According to the National Petroleum News, such motor oil is very poular in England. The publication referred to prints the following quotation from a letter received from a British marketing company, regarding the use of oil from asphalt-base crude, in the isle across the pond:

"We have sold several thousand tons during the last six months and we understand from buyers that these oils are giving every satisfaction."

TRACTOR BUILDS LEVEE.

[Written for Pacific Rural Press.]

Building a levee with a tractor has its conveniences, for the tractor can be moved on its own power, to whatever position is desired. Instead of using a dredge, J. Gilcrest for the Yolo Orchard Co. hooked the winch of a Yuba 18 tractor to the cable which hauled six cars, each holding a yard of dirt, some 200 to 300 feet to the top of the levee, where it was dumped. The grade was often 20 to 30 per cent. Over 60,000 yards of dirt were handled in this way from July 1 to Dec. 26, 1915. This was an average of about 400 yards a day moved at a cost of 9 cents per yard. The gearings were in first class shape at the end of the job, according to Mr. Gilcrest.

TRACTOR HAULS BEES.

[Written for Pacific Rural Press.]

Tractors are being used for about every purpose these days. H. C. Powell of Visalia recently purchased a Bates Steel Mule tractor and on this occasion hitched four wagons to his "Mule," each wagon loaded with bees and honey. The total load was 12 tons and this was hauled from Tagus Switch to Lindsay, a distance of about 28 miles. The amount of distillate consumed was 22 gallons. Only three-quarters of a gallon of oil was used on the trip. The average speed maintained throughout the trip was two and one-half miles per hour. In speaking of the above Mr. Powell says it was very interesting to see how the "Mule" took hold of the load and with what ease it did the work.

OIL MOTOR AVOIDS DELAY.

[Written for Pacific Rural Press.]

A three weeks' run without a stop right after equipping their plants with Victory oil motors, is the record recently made by the New Almaden Mining Co., who have one of the largest quicksilver mines in the world.

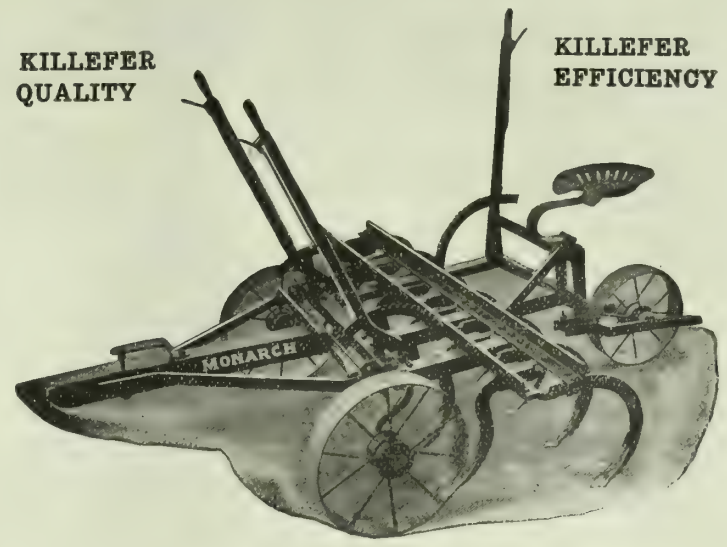
As quicksilver has reached the price of $300 per flask, delays for lack of power would be expensive. This sounds like the oft-repeated admonition for farmers to overhaul and repair machinery in slack times because time has a multiplied value at rush seasons.

A band-saw run by an automobile cut up 150 cords of stove wood last winter, according to Art. Florey of Downey, who operated it. He claims that the band-saw required less power than a circular saw, and that it would easily run through a log two feet in diameter.

Monarch Cultivator (K)

KILLEFER QUALITY

KILLEFER EFFICIENCY



The Killefer Monarch Cultivator has more varied uses on the ranch than any other tool we manufacture. As a Chisel for bean and beet ground before planting, it has no equal. As an Orchard Cultivator, where deep cultivation is desired, it gives perfect satisfaction.

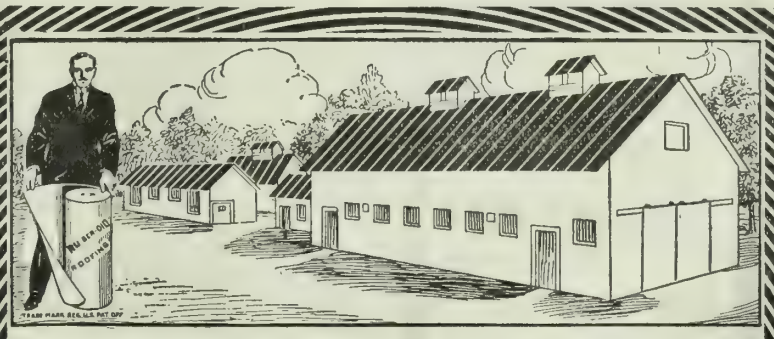
As an Alfalfa Cultivator, when fitted with our Special Alfalfa Tooth, it does excellent work, loosening the ground to a depth of from six to eight inches without injuring the stand. This deep cultivation enables the water to percolate to a greater depth than any cultivator on the market. Made in 5, 6 and 8-foot sizes.

Corvallis, Ore., April 3, 1916.

THE KILLEFER MFG. CO.,
2209 Santa Fe Ave.,
Los Angeles, Calif.

Gentlemen:—
The Monarch Cultivator did us a good job in our Alfalfa field, taking out a tough grass sod which nearly had the Alfalfa whipped out. Am pleased with its performance. We are handling it with a 30 H. P. Motor.

Yours,
J. B. CORRIE.



For All Farm Buildings

You want roofs that are *permanently* waterproofed—roofs that will end your repair bills—roofs that cannot warp, rust, crack or leak. For such a roof use

Pronounced "RU" as in RUBY
RU-BER-OID ROOFING
COSTS MORE - WEARS LONGER

RU-BER-OID Roofing is waterproofed with a compound containing high-grade animal and vegetable substances. The felt is free from wood fibres and paper stock. It contains no coal tar or asphaltic oils.

RU-BER-OID roofs applied more than 20 years ago are still giving perfect service, and the same quality is sold today by the best dealers everywhere.

The colors of **RU-BER-OID** are permanent and attractive. Beautiful Colored **RU-BER-OID** (Ka-lor-oid), comes in Tile Red and Copper Green.

The U. S. Court of Appeals has enjoined imitators from using the word "Rubberoid or any similar name as the trade name or brand" of their roofing. The "Ru-ber-oid Man," shown above is on every roll of the genuine. If the Ru-ber-oid Man is not there, the roofing is *not* **RU-BER-OID**.

Farm Building Books Free

Illustrated books, valuable to every farmer, telling and showing how to roof or build all kinds of structures, will be sent free. Mail the coupon.

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Also manufacturers of **Pabco Preservative Paints** and **Amiwud Wall-Board.**

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Send me samples of RU-BER-OID and the books opposite which I mark X. I intend to roof a .....

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General Agricultural Review.

GRAINS AND FIELD CROPS.

The Dodge Rice Co. is talking about putting up a mill at Colusa.

Santa Barbara and Ventura bean planting will be going on till May 15 safely.

Yolo county wheat has taken better color on account of cooler weather.

About 30,000 acres of rice are to be planted in Glenn and Colusa counties this year.

The Wasco Land Co. shipped 5 cars of rice to Louisiana; supposedly for European ports.

A state-wide corn-growing contest has been arranged for Arizona by the State Bankers' Ass'n.

Two carloads of Tulare county rice were shipped to Europe and two to Texas this season.

Asparagus growers of Oakley are pleased with results from the shipping season just closing.

A. L. Gilbert of Oakdale has contracted for the pea vine silage of the Pacific Pea Packing Co.

Dr. Washington Dodge of Butte City is to test rice for silage for cows, says the Colusa Sun.

Canned peas have been going to Europe from Oakdale so much that there is less holdover than last year.

Perris Valley alfalfa growers held a mass meeting recently to discuss storage warehouses, uniform prices, and electric rates.

The Oakdale pea cannery started its 10 weeks run Apr. 27. They have 550 acres of peas, of prime quality owing to favorable weather.

Will the short straw increase the amount saved for grain, or will the uncertainty of grain maturing increase the quantity cut for hay?

Manteca sugar beets last year tested 19 per cent sugar, some of them going up to 21.9 which is about as high as they go anywhere.

Most of the alfalfa on the east side of the Sacramento valley has been cut and is already in the stack, being of a better quality this year than usual.

Gridley rice acreage is increased 20 per cent over last year. The seeding was done two weeks earlier than last year, an important feature in getting the rice to maturity before fall rains.

About 2000 acres of sweet potatoes are being planted around Atwater and Livingston, Merced county. The normal crop is around 21,000,000 pounds, besides hog feed which comprises tons of the small potatoes.

Grain prospects north of Chico as far as Red Bluff are better than in the district south of Chico, but the entire east side of the Sacramento is badly in need of rain and some growers say that the grain is too far advanced in many localities to be materially benefited by rain from now on.

Twenty-eight representative men from the Sacramento and San Joaquin valleys and Los Angeles have been appointed by the Sacramento Valley Development Board to investigate the feasibility of substituting elevators for bulk grain instead of sacks. This committee is to meet in Stockton 10 a. m. May 6.

CITRUS, OLIVES AND NUTS.

Eat olives on Ripe Olive Day May 16.

The Spanish almond crop has been damaged by frost and rain.

The net gain of membership in the Cal. Almond Growers' Exchange to Apr. 26 since Sept. 11, was 169.

Demand for orange trees to plant in Tulare county is said to be considerably stronger than a year ago.

Reports coming from the country are that as high as 17 cents has been offered for Nonpareil almonds.

The San Fernando Fruit Growers' Ass'n met May 1 to learn all they could about controlling citrus and olive pests.

Grow small-sized Valencias. They sold at $3 to $15 per box in Chicago recently when large sizes dragged at $1.90 to $2.60.

The California Avocado Ass'n held its semi-annual meeting and display of fruits Apr. 29. A specially interesting program was given by the best authorities.

The olive holdover is practically all of the small sizes, and even these are being sold as if all would be gone before another crop comes on. The demand for oil is said to be growing stronger.

The Eastern Contra Costa County Almond Growers' Ass'n admitted 13 new members at their recent meeting, making 33 new members in that association for this season. They market through the Cal. Almond Growers' Exchange.

DECIDUOUS FRUITS.

The Cal. Cured Fruit Exchange has closed its Sacramento plant.

Prune buyers have recently offered 5¼ cents for Shasta county prunes.

R. C. Merryman of Exeter recently subscribed for a large block of Peach Ass'n stock.

Hayward prune and apricot growers are to hold a big mass meeting soon in the interests of the proposed State organization.

Over 77 per cent of the peach growers of Winters and Capay valley districts had signed up in the Peach Ass'n two weeks ago.

It is safe to say as this is written, that the Peach Growers' Ass'n has enough acreage and stock subscribed

YUBA
BALL TREAD TRACTORS

Takes the place of horses on the farm---in all kinds of work.

The catalogue will tell you how.

Sent on request

THE YUBA CONSTRUCTION CO
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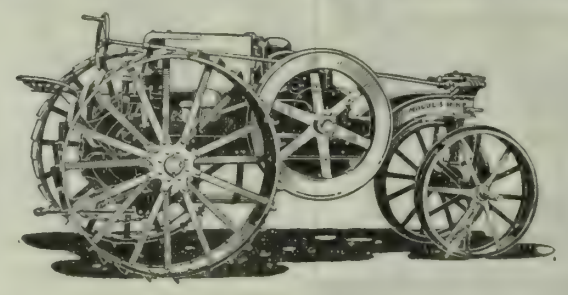
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C. & S. Axle Grease has consistency (standing up under all conditions of temperature) wearing qualities (holding up under severest conditions); and the price, based on its quality, is reasonable.

WHITTIER-COBURN COMPANY
San Francisco

A Plain Statement of Fact

Mogul 8-16: $725 Cash f. o. b. Chicago



AT the present prices of gasoline and kerosene, no farmer can afford to use a gasoline tractor. Gasoline averages now over 100 per cent higher in price than kerosene and is likely to go higher rather than lower, in the opinions of men who know the oil business.

Again, it is neither safe nor economical to use kerosene in a tractor not specially designed to operate on kerosene. Merely changing the fuel mixer is not enough; the design of the whole motor must be changed.

Kerosene and gasoline tractors of equal power sell for about the same price and use practically the same amounts of fuel. On that basis a **Mogul 8-16** tractor saves each year, in fuel bills alone, about a third of its price. The figures prove the truth of this statement.

If you are considering the purchase of a tractor this year, give these facts careful study, from every point of view, before you spend your money.

Mogul and **Titan** tractors are designed specially to operate on kerosene and to give their users the full benefit of this advantage. There are four sizes—**Mogul 8-16** and **12-25, Titan 15-30** and **30-60.** Write us for full information before you buy any tractor.

International Harvester Company of America
(INCORPORATED)
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San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah



When Miles Mean Dollars

you can't afford to take chances with *ordinary* tires.

You do not want a *promised* service, but the *guaranteed* service that goes with Pennsylvania Oilproof

VACUUM CUP TIRES

You want the positive *traction* on heavy roads given by the sturdy Vacuum Cups.

You want the *non-cost extra mileage* that Vacuum Cup users always get.

You want the *triple guarantee* that goes with Vacuum Cups—*guaranteed* non-skid on slippery pavements, *guaranteed* Oilproof, *guaranteed*—per warranty tag—for

6,000 MILES

PENNSYLVANIA RUBBER COMPANY, Jeannette, Pa.
Direct factory branches and service agencies throughout the United States and Canada

Look for the Yellow and Blue Vacuum Cup Sign Displayed by Dealers Everywhere

VACUUM CUP TIRES 6,000 MILES

You pay for the Quality – the Safety costs you nothing

o warrant continuing the work.

Five cents has been offered for Shasta county dried peaches and $42.50 per ton for green pears. But the growers there believe that this is not the time to sell.

Thermalito's opportunity for berry and vegetable growing is being urged to public attention by the Oroville Register. A proposed irrigation district will help if carried.

A pony of 10 boxes of Advance, Guigne, Chapman and Maubra 12-row cherries sold in New York Apr. 21 at $12.25, $7.50, $11.50 and $3.37½ per box respectively.

The first full carload of cherries shipped from the State left Vacaville Apr. 22 partly filled. It was completed at Sacramento and sold in New York for $5,473 for the 2285 boxes.

Machinery for the Lake County Canning Co. is ready to be installed before the crops are ready. Only beans and a few samples of fruits and other vegetables will be put up this season.

Loganberries and strawberries of the Watsonville district will be canned this year if pending arrangements are made. The cannery will employ 250 hands when running full blast on blackberries.

Pres't W. J. Wilson of the Kings County Packing Co. says that his company is paying twice what it did last year for freestones to can—that is, $15-$16 per ton. He is boosting for the Dried Peach Co.

Visalia growers of canning and shipping peaches have turned over their 5000-ton crop to a committee of their organization who recently refused to contract at the prices offered by Southern California canners.

Members of the Tulare County Growers' Ass'n have tentatively sold their fruit to the Golden State Canning Co. of Ontario and will probably not operate their own cannery this year. The company wants 1500 tons at $15 for frees and $20 for clings.

Every apricot grower in Kings county should look for brown apricot scale now, and if many are found, should spray next winter with distillate emulsion, is the warning given by Horticultural Commissioner Fred K. Howard, who has found these scale unusually abundant.

Horticultural Inspector Tom Henry of Paso Robles reports the following shipments into his territory: almonds 74,434; prunes 18,234; pears 5,024; apples, 1,345; cherries, 1,149; peaches 987; apricots 798; walnuts 541; plums 330; grapes 1,720; berries 1,328; ornamentals 1,732. Over 3,000 almond trees were rejected.

The Pacific Coast Ass'n of Nurserymen will meet this year at Medford, Ore., June 20-22 inclusive. The program will include discussion of Reforms and Financing the Industry, Improvements and Methods of Selling Stock, Standardization of Selling and Salesmen, Cost of Production, and Expense of Growing Nursery Stock.

MISCELLANEOUS.

The Orland Farm Center holds its annual picnic May 6. All farmers of the county are invited..

The Southern Counties Flood Relief Ass'n, consisting of representatives from nine southern California counties, recently organized and adopted a resolution asking Congress for an appropriation to help prevent future floods. Steps for a State flood control scheme were also planned.

May 11 will be Irrigation Day in Glenn and Colusa counties. Gov. Johnson, Elwood Mead, Max Thelan, A. B. Humphrey and others will give addresses at a luncheon at Willows. A tremendous effort is being made to settle the legal difficulties of water users in Glenn and Colusa counties so that the country may be developed properly.

Chas. Cristadoro sends us "Ten Commandments for the Dairy Farmer," one of which is elaborated with the statement that a cow which produces 4000 pounds of milk in a year just pays for her keep, though she costs as much to keep as the 8000-pound cow.

ARNOTT & CO. HAY PRESS HEADQUARTERS

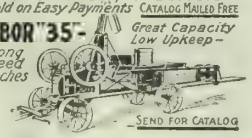
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Especially Strong for Alfalfa - Feed Hopper only 39 Inches from Ground - Largest feed Opening -



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Write for prices on sizes 12, 16 and 22 H-P.

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Write for Catalog No. 47 F

A Better Maker Not Made

For Water Deep Under The Ground

Jackson Deep Well Turbine Pumps give continuous and efficient service. They do not get out of order as they have no valves or plunger rods. Very little care or attention needed as they are oiled from the surface. Are much lower in cost than other types of deep well pumps when the expense of dug pits, cribbing and timbering is reckoned. They raise water from the very bottom of the well, thus eliminating heavy vacuums and delivering all the water the well yields. They develop slow wells and increase their flow.

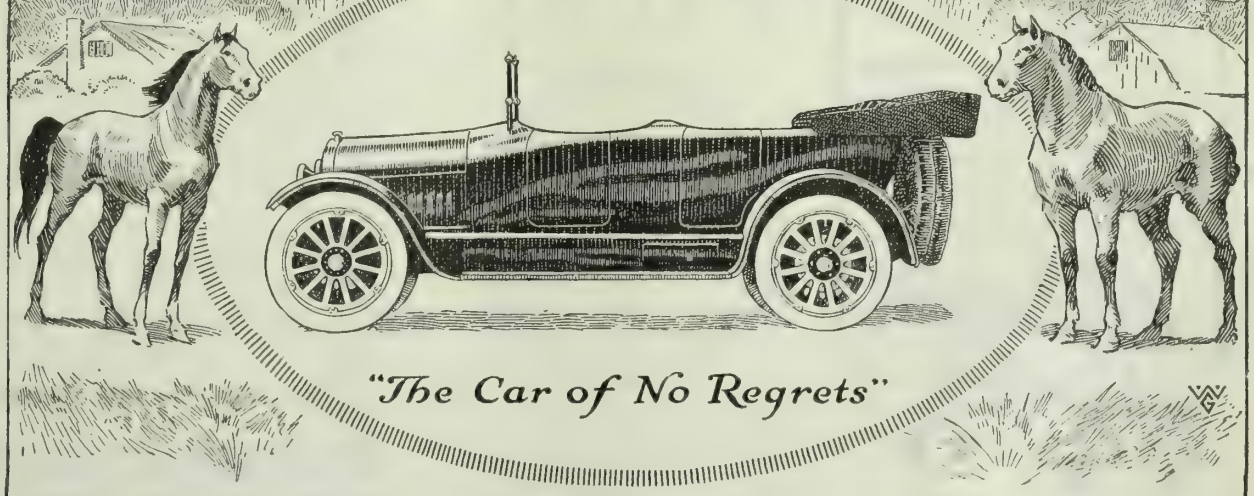
Like all Jackson Made Pumps These Deep Well Turbine Pumps Are the Very Best Pumps Made for the Purpose—They are Dividend Earners, Not Expense Makers

Whatever your water problems may be our Expert Pumping Engineers will help you out free of charge—write

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"The Car of No Regrets"

The admired characteristics of Thoroughbred and Percheron are combined in this *pioneer* Eight. The Speed, Grace and Stamina of one are merged with the Power, Sturdiness and Reliability of the other

The Farmer is quick to recognize *quality* in stock and no less appreciative when he finds it in machinery. His motor car is as personal to him as his fine horses and is generally purchased with the same care.

We are confident that the King is so very much the car he has long desired, that we urge his investigation of this successful Eight before deciding on *any* other make.

The Eight-Cylinder King has been in operation for over a year throughout America and in more than thirty foreign lands. Prior to this, the King Four made a most enviable reputation the world over for efficiency and reliability.

The new Model E is larger and more powerful than our *pioneer* Eight, and contains many thoroughly tried advances in automobile engineering.

Aluminum pistons are a feature of this model; one-third the weight of iron pistons, they greatly increase engine power and reduce the strain on crank-shaft, bearings and all reciprocating parts. They also resist carbon and economize fuel.

Cantilever Springs—which the King introduced to America—reach their highest efficiency as designed for this car. These springs give a restful, lazy motion over the roughest roads and keep the tires gripped to the road.

From a stand-still this car will accelerate to 25 miles per hour *in eleven seconds*, without gear-changing, and lightning "get-a-way" from a start "in high" is only a small part in the amazing performance of the King's super-motor. Hills melt before this powerful car, and they're mostly taken in high gear. "Locomotive" speed is always ready—for the need that comes once in a lifetime. Silence, economy, and ease of operation are naturally features of this perfect mechanism.

Model E, 7-Passenger, 60-Horse-power Touring Car, $1350

SEND FOR CATALOG AND NAME OF NEAREST KING DEALER

KING MOTOR CAR COMPANY, DETROIT, MICHIGAN

New Pointers on New Dairy Law.

[Written for Pacific Rural Press.]

Several points of special and new interest to dairymen were brought out April 27 at the conference in San Francisco of city health officers, veterinarians, and others interested in the new dairy law which is to go into force Oct. 1.

Many dairymen are being solicited to buy pasteurizing plants for their ranches, and many are doing so. Many cities already refuse to allow milk to be sold unless it has been pasteurized within the cities. The law provides that milk for human consumption must not be repasteurized. It is suggested that before buying a pasteurizer, each dairyman find out what is likely to be required by the city where he expects to sell milk. Owing to difficulty of supervising the cleanliness and accuracy of the many small country pasteurizers, it is thought that most cities will require their supplies to be pasteurized at central plants.

Moreover, the cost of cooling to 50 degrees after pasteurization exceeds the cost of pasteurization in most cases, and should also be considered before investing.

Score Card Changes.—Milk from tuberculin-tested non-reactors must be from dairies which score 70 per cent for Grade A raw; and 60 per cent for Grade A pasteurized from cows not tuberculin tested. Scoring must be based on the score card of U. S. Dept. Agr. as printed in another article. The objections pointed out in that article are insurmountable unless the State Dairy Bureau can prevail on the U. S. Dept. Agr. to incorporate certain suitable changes in the score card as applied to California. This the Dairy Bureau is attempting.

Tuberculin Testing. — The intradermal tuberculin test must be applied after the law goes into effect Oct. 1, by members of the State Veterinarian's force, unless the milk is to be pasteurized. Four men will be added to that force under civil service examinations to be held in June. Cattle supplying small towns which do not now have milk and dairy inspection will be tested first. Applications for test, made from now on, will be considered evidence of good faith until it can be done. A means of marking and identifying reactors is being sought by State Veterinarian Chas. Keane.

The intradermal test is considered more searching and far more accurate than the thermal test on account of the many conditions that make a cow's normal temperature vary; and Dr. Keane believes also that five or six herds can be tested in the former way in the same time as one by the thermal test.

Milk Temperatures. — Temperature of milk before delivery to pasteurization plants is left to the discretion of the State Dairy Bureau. F. W. Andreason, the head of this Bureau, contemplates that milk shall be cooled immediately as much as possible with the water on the place provided it be delivered to the pasteurizer within two hours of milking, otherwise special cooling will be required.

Efforts will be made to get railroads to furnish refrigerator cars. These have been refused to certain milk shippers supplying Oakland, but are furnished to shippers over 50 miles from Los Angeles because such dairymen would not otherwise ship to that city. Refrigerator cars will be necessary especially in the interior, to keep the bacteria down to the required 100,000 per cubic centimeter for Grade A raw, 10,000 for Grade A pasteurized, and 50,000 for Grade B pasteurized.

LAMBS SHOULD BE CASTRATED.

To the Editor: I am raising a small bunch of lambs and expect to market the buck lambs when about six months old. Will you kindly advise whether it is best to castrate these lambs.—C. E. G., Fernley, Nevada.

[Yes. Wethers grow and fatten much more quickly than rams and do not worry the females in the flock. Also you should be able to realize a better price for them from the butcher. Experiments have been made showing that wethers make 11 per cent more gain in weight under similar conditions than do rams.—Editors.]

Make Your Silo Pay Big Profits

Save the day wages and board of *two or three* men by getting a Smalley—the *only* machine with a real Grip Hook *self-feeding* table.

Save 1-5 to 1-4 the *power cost* and needless belt wear with the one pulley, low-speed chain drive on blower.

Save excessive *repair expenses*, break downs and delays. Steel in castings makes Smalley one-fourth heavier with a wonderful record for long service.

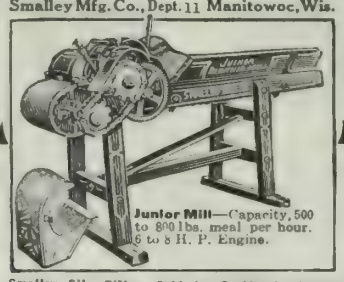
Smalley Silo Filler

Cut feeding costs in half. Fatten cattle, hogs, sheep and poultry with alfalfa chop. Patented alfalfa re-cutting attachment handles leaves, stems and all. No waste. Sell your So. 1 hay and mill off-grades for feeding. Make combination feeds from clover, rice straw, bean straw, oats and dried corn stalks.

Blower built independent of cutter. Fan speed increased or decreased without changing speed of knives. Extension table on hopper prevents accumulation of litter.

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Smalley Mfg. Co., Dept. 11 Manitowoc, Wis.



Junior Mill—Capacity, 500 to 800 lbs. meal per hour. 6 to 8 H. P. Engine.

Smalley Silo Fillers Sold by Pacific Implement Co., San Francisco, Cal.

Shorthorn Bulls
and
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On April 21st we arrived from Missouri with a carload of choice registered Bulls and Heifers.

INSPECTION INVITED.

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REDWOOD TANKS. SILOS
Water Troughs, Windmills, Frames, and Towers.
Steel and Wood.
Prices the lowest.
BROWN & DYSON
640 So. Center St., STOCKTON, CAL

SURFACE IRRIGATION EXPOSITION DRAIN PIPE.

We have purchased all the Drain Pipe in the Palaces and Courts at the Exposition. This is made of light galvanized iron in 10-foot lengths, and will slip together—can be used for surface irrigation.

PACIFIC PIPE COMPANY.
Main & Howard Sts., San Francisco, Cal.



The Supremacy of the De Laval Cream Separator

Supreme in Skimming Efficiency

Over 35 years of experience and thousands of tests and contests the world over have demonstrated the De Laval to be the only thoroughly clean skimming cream separator, under all the varying actual use conditions, favorable as well as unfavorable.

Supreme in Construction

This applies to every part of the machine—to the bowl, the driving mechanism, the frame and the tinware. The De Laval Patent Protected Split-Wing Tubular Shaft Feeding Device makes possible greater capacity, cleaner skimming and a heavier cream than can be secured with any other machine.

Supreme in Durability

The De Laval is substantially built. The driving mechanism is perfectly oiled and the bowl runs at slow speed, all of which are conducive to durability and the long life of the machine. While the life of other cream separators averages from three to five years, a De Laval will last from fifteen to twenty years.

Supreme in Improvements

This has been the greatest factor in De Laval success. Not a year goes by but what some improvement is made in De Laval machines. Some of the best engineers in America and Europe are constantly experimenting and testing new devices and methods, and those which stand the test are adopted.

Supreme in Service

With its worldwide organization and with agents and representatives in almost every locality where cows are milked, no stone is left unturned by the De Laval Company to insure that every De Laval user shall get the very best and the greatest possible service from his machine.

Supreme in Satisfaction

De Laval users are satisfied users, not only when the machine is new, but during the many years of its use.

Supreme in Sales

Because they are supreme in efficiency, construction, durability, improvements, service and satisfaction, more De Laval Cream Separators are sold every year than all other makes combined.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below.

DE LAVAL DAIRY SUPPLY CO.
SAN FRANCISCO SEATTLE
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

P For Every Purpose NEW Threads & Couplings. Hot Asphaltum Dipped
I Second Hand and NEW
P Screw Casings Fittings and Valves Guaranteed for Pressure
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REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Gilts)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize Senior Yearling, P. P. I. E.
3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.

SAN FRANCISCO OFFICE, 1210 FLOOD BLDG.

Lupines are not Loco Weeds.

And yet Lupine hay may cause animals to act crazy and may kill them. What precautions should be ta ken?

To the Editor: I am sending two weeds which are common here with us. A neighbor contends that the larger of the two is "loco weed." Please give me the common name of both, also if there is any difference between the two. The smaller was grown on poor soil, the larger on deep, rich soil.—O. B. I., Corning.

[Answered by Dr. H. M. Hall, University of California.]

The plants sent by O. B. I. of Corning are both species of lupines. The small one is the small-flowered lupine (Lupinus micranthus); the larger one, although also a lupine, cannot be specifically determined in the absence of flowers. Neither one is a loco weed and neither would produce the symptoms of loco poisoning. It is well known, however, that the seeds of most, if not all, species of lupines are poisonous, and it is therefore very advisable that they be not fed to stock during the period when the seeds are forming. If your correspondent does not possess a copy of California Experiment Station Bulletin 249, he should write to the Director at Berkeley for one, since information regarding poisoning by lupines is there given.

What the University Bulletin Says.

As lupines are now shooting their beautiful blooms in all parts of the state it should be generally known in what way they may be dangerous to live stock. The Bulletin to which Dr. Hall alludes says these things:

Nearly all cases of poisoning with lupines occur in the northern part of the State where the plants are used to some extent for hay.

Poisonous Characters.—Several of our species of lupine are known to be poisonous to stock and it is quite probable that many more will be found to be more or less injurious. As far as present investigations go the seeds are the only part of the plant positively known to be poisonous, although the green herbage may cause bloat if eaten in large quantities, especially when it is wet or when eaten by animals just in from a dry range or when hot or very hungry. Animals do gradually become immune to bloating. Lupines are often fed as hay with no ill effects if gathered either before the seeds have matured or after they have fallen from the pod. Sometimes stock have been poisoned by lupine fed under apparently the same conditions as in preceding years when no ill effects followed. But in every case of poisoning it was found that the hay had been cut after the poisonous principle had formed in the seeds and before these had fully matured and shattered out. Lupines, therefore, should never be fed nor cut for hay while mature or nearly mature seed is in the pod, unless it has been positively proved that the species used is not poisonous. Even when not in seed great caution should be exercised in the use of lupine hay.

Symptoms.—The animals appear crazed and rush about in all directions butting into each other and other objects. This first stage of frenzy is followed by a second characterized by irregularity of movement, violent spasms, and falling fits, increasing in severity until finally collapse occurs. When the animal is unable to stand, convulsions follow each other at short intervals. Death usually occurs within one-half to one and one-half hours after the first symptoms, although animals may sometimes linger on for a day or so. During the attack the pulse is strong and irregular, there is often frothing at the mouth, the flow of urine is increased and this is sometimes bloody. The lungs and cerebral membranes are congested and in more violent cases small blood vessels are found ruptured in various parts of the body.

Remedies.—The permanganate of potash remedy is recommended for cases of poisoning by lupine, but it must be administered very early in the attack to be effective. By the rapidity with which the symptoms appear it is evident that enough of the toxic substance to cause death enters the general circulaion very soon after the seed has been eaten.

The permanganate remedy is administered in this way:

Horses—Permanganate of potash, 15 to 20 grains; Sulfate of aluminum 15 to 20 grains.

Cattle—Permanganate of potash, 30 to 50 grains; Sulfate of aluminum 30 to 50 grains.

The thoroughly pulverized chemicals are first dissolved in a pint to a quart of pure hot water and after cooling, the solution is administered as a drench. Great care must be exercised to insure a complete solution of the permanganate since any undissolved crystals may lodge in the mucous membrane of the mouth and throat and set up a serious irritation. The powder should be added to the water, the solution thoroughly stirred and allowed to settle for several minutes, the solution is then drawn off and any dregs which may remain in the bottom discarded. All organic matter, such as sugar, syrup, etc., must be kept out of the liquid and the water used should not be strongly alkaline.

Acids are also recommended for lupine poisoning. For this purpose acetic acid or very dilute sulphuric acid is suitable. Since vinegar contains acid its use would be beneficial. Alkalies should be avoided.



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If planted this May or June
WAGNER'S GIANT RHUBARB
Should yield 15 tons first year.
SPINELESS CACTUS
Best food for hogs.
$10 per 1000 slnbs.
MULEFOOT HOGS
Most prolific and healthiest known. Choice pedigreed breeding stock, both sexes. 140 head ready for delivery. Will accept bankable notes or mortgages as payment.
J. B. WAGNER,
Pasadena, Calif.
RHUBARB, BERRIES, CACTUS, HOGS.

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Air-Dried
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PIPE For irrigation water, supply-power. Cheaper than any other pipe of equal size, capacity and endurance.

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SILOS For dairymen, stockmen, farmers. In sizes from 25 tons to 300 tons. The best silo made today.

All Remco products are built to your order. Only clear, air-dried redwood is used. Write us your needs and we will send you full information.

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1608 Hobart Building **San Francisco, Calif.**

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ELECTRIC APPLIANCES in the household not only add to the convenience of all members of the family, but they are economical and time-savers. **ELECTRIC APPLIANCES** include **CHAFING DISHES, COFFEE PERCOLATORS, VACUUM CLEANERS, ELECTRIC IRONS** and every other appliance that is needed in the modern home, not forgetting **ELECTRIC FANS.**

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SPARE the horses. Mica Axle Grease makes easier pulling. It gives a smoother bearing than ordinary grease, because it contains powdered mica—blended with the grease by a special process. The mica keeps the spindle smooth, resists wear and pressure, and makes the grease last twice as long. Get a can from your dealer today.

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MICA AXLE GREASE

SALT YOUR HAY DOWN

When You Stack It or Bale It

The modern way—
The sensible way.

WHY NOT?

Costs You Nothing---

—the salt more than pays for itself in the weight of the hay—holds the moisture, makes 5 tons equal 6.

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—checks the growth of molds when the moisture content is high.

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—the cattle thrive on salted hay and they like its taste. Stock will eat it up clean, where unsalted hay will be mussed over and wasted.

—leading dairymen use **SALTED ALFALFA HAY** all the year round for feeding dairy cows to increase the flow of milk.

20 Pounds of Salt to Each Ton of Hay

—that's the proportion. Stack three feet of hay, sprinkle the salt over by hand; then another layer of hay, more salt, and so on.

IT PAYS!

With the Live Stock Men.

DAIRYING AND DAIRYMEN.

Morris and Sons have been buying granddaughters of Tillie Alcartra.

A. B. Humphrey has a purebred Guernsey community nucleus at Escalon.

Post and Card have brought in 29 Holstein cows from Wisconsin for their ranch at Angiola.

J. W. Benoit of Modesto reports the sale of a choice young service bull to A. J. Zabala of Salinas.

Mr. Rowley of Exeter reports the loss of half of his Jersey cattle and hogs from feeding moldy alfalfa silage.

A rabid dog attacked J. W. Jones and his daughter near Hanford and also caused the death of several head of cows and hogs.

O. J. Ames of Oakdale recently sold the last of his young Jersey bulls of serviceable age, Dainty Maid's Diploma, to J. F. Tulloch of Oakdale.

Owners of the Pure Gold Stock Farm of Elk Grove have recently erected a stave silo and are planning a 60-cow sanitary milking barn for the near future.

Geo. Cochran and C. F. Nowlin of the Sanitary dairy, El Centro, milk over 100 cows and handle the milk in a sanitary way similar to that described in a recent issue of the Pacific Rural Press.

Shieber Bros. of Calexico are reported to have recently purchased a son of Tilly Alcartra from Morris & Sons Corp. of Woodland for $700. He was sired by Westside Mayflower Prince. This is a splendid investment.

Manager W. A. Beard of the Sacramento Valley Development Board has purchased 74 grade Holsteins for his 120-acre alfalfa ranch near Marysville. To head the herd he bought the purebred bull Segis Oak Tritomia Fobes from the Jas. Henderson Co. of Sacramento.

From Mar. 16 to 22, reports of tests of 575 Holsteins were entered in the Advanced Register. Over half of these were with first or second calves. In 7 consecutive days, they produced 241,276.8 lbs. milk, containing 8525.225 lbs. fat with an average test of 3.53 per cent. The average production was 419.6 lbs. milk containing 14.8 lbs. fat.

An auction of 300 Holstein and Durham milk cows and heifers, 200 of them now milking, and most of them not over five years old, is to be held May 17 beginning 9:30 a. m. at the Wm. Collier ranch between Livingston and Turlock. Col. R. R. Briggs of Turlock is the auctioneer. Many of the cows are giving over 80 pounds milk per day. The owners, Wm. Collier and Manuel Mancebo, are going out of the dairy business.

HOG BREEDERS AND STOCK.

Dr. C. C. Park of Santa Barbara is going into hog raising on a newly acquired 120 acres.

Hayden Smith of Woodland shipped on Apr. 27 a Duroc hog 7½ months old weighing 212 pounds to J. T. Donaldson of Modesto.

At the Cal. Swine Breeders' Sale, Chico, May 24, E. H. and H. L. Murphy will sell six Berkshires.

H. L. Murphy of Perkins will show two carloads of cattle and hogs at the Butte County Exhibition May 22.

H. H. Hoppin of El Centro is experimenting extensively with several varieties of beets to be fed to several varieties of hogs for pork.

Pig scours is a symptom of indigestion caused by two much feed, changing the sows' feed, dirty feed, or chilling the sows or pigs, says the Mo. Col. Agr.

Miller and Lux recently bought 22 registered Berkshires from Markofter and Latta of Elk Grove. The stock will be distributed among their several ranches.

Keeping hogs clean by lining their bathing pools with wood is practiced by H. G. Farnsworth of El Centro. Sheep dip is also kept in pools 5x5x1 foot deep.

Frank and Lewis Gill, Hodges Bros., and Will Thompson of Porterville combined Apr. 27 to sell two cars of hogs for the Los Angeles market. The price was $7.75; the average weight 190 pounds.

Dr. T. B. Spalding of Turlock recently bought from J. W. Sepit of Iowa, two bred big-type Poland-China sows, and from J. W. Pfander of Iowa a purebred service boar. Dr. Spalding sold 8 gilts and a boar to the Browning Stock Farm of Woodland.

Willoughby & Sons of Calexico keep clean water for hogs to bathe in by submerging floors surrounded by cribbing, in pools through which irrigation water runs as regulated by gates. Unless these hogs are vaccinated there is great danger of cholera.

H. G. Farnsworth of El Centro keeps his hogs healthy and cholera-resistant by mixing 1 teaspoon saltpeter, 4 tablespoons salt, and a cup of sulphur and feeding the mixture with tankage once a week. He does not vaccinate though cholera has surrounded him. These things ought he to have done and not left the other undone.

At the semi-annual meeting of the Cal. Swine Breeders' Ass'n at Davis May 6, 10 a. m., Wm. Bernstein of Hanford speaks on "The Value of a Good Sow"; J. M. Bomberger, Modesto, "Substitution of Feeds as Regards Cost, for Growing and Fattening Hogs"; at 1 p. m. R. R. Ingals of the University, "Boys' Pig Clubs"; D. O. Lively, San Francisco, "Hog Industry in Cal."; A. B. Humphrey, Mayhews, "Hog and Vineyards"; Prof. G. H. True, "Livestock at University Farm."

BEEF CATTLE AND BREEDERS.

Miller and Lux have just imported 90 purebred Hereford heifers and 110 Hereford bulls from Midland, Texas.

E. H. Murphy of Perkins took a car of purebred Shorthorn heifers and a bull Apr. 29 to Lanfair, San Bernardino county, where he reports a ready sale.

W. H. Hammond of Chico, who recently bought a carload of purebred Shorthorn cows and heifers, will show them at the Butte County Spring Exhibition, Chico, May 22-28.

The demand for purebred beef stock in the East is very strong since foot-and-mouth disease has been cleaned up and it seems like the bull supply would be short there this fall.

SHEEP AND SHEEP BREEDERS.

High lamb markets have led to the warning by State Veterinarian Chas. Keane not to sell off too many of the ewe lambs.

Blevins Bros. of Colusa recently moved 2700 head of sheep from their winter quarters near Arbuckle to the Moulton ranch pastures.

In eradicating hard scab on fine wool sheep the first dipping should

AUCTION SALE
300 Cows and Heifers

On the WM. COLLIER Ranch on the State Highway, 1 mile north of Livingston or 8 miles south of Turlock.

WEDNESDAY, MAY 17.

At 9:30 a. m. (Rain or Shine).

This is one of the finest Dairy Herds in the San Joaquin Valley, and consists principally of Holsteins, with a few Durhams; all young and in fine condition; most all have 1st, 2nd, or 3rd calves. They are heavy producers, many going from 80 to 100 lbs. of milk per day. The owners invite inspection before sale. 200 Cows milking at present time. 100 Heifers, many springers, and lots of Calves. Owing to the large number of Cows to be sold, the Sale will commence promptly at 9:30 a. m.

The Bulls at the head of this herd are registered Holsteins.

All will be sold without reserve as owners are retiring from the dairy business. No outside stock will be sold at this sale.

FREE LUNCH.

WM. COLLIER—Owners—MANUEL MANCEBO.

COL. R. R. BRIGGS, Auctioneer. Phone 4F13, Turlock.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

GEO A SMITH'S JUNIOR HERD SIRE JOKER won the following prizes at the Wisconsin State Fair in 1915: First Prize in the Under Six Months' Class, 35 competing. First in the Wisconsin Special. First in the Wisconsin State Futurity. Total Winnings, $63. A Litter Sister won First in the Under Six Months Class. A Litter Brother won Second in the Under Six Months Class. Five of this litter won First on "Pen of Pigs." Four of this litter won First on "Get of Sire." Four of this litter won First on "Produce of Sow." Four others of this litter won Second on "Produce of Sow." His Sire, Jumbo Hadley, at the same Fair, won: First Prize Two Year Old Class; Senior Championship, Grand Championship. Joker had to compete with boys from the leading herds of the Middle West, which had been fitted to show at the Panama-Pacific International Exposition, but which were not allowed to come on account of the quarantine. Gilts and sows bred to this boar for sale. One to a carlad. For further information, write, Geo. A. Smith, Corcoran, Cal.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—The Money Makers. Everything registered and cholera immune. Nothing to offer for immediate delivery. Sows now farrowing. The pigs from these sows will be ready to ship during late May and June. Am booking orders now for these. The offering represents the very best and most popular blood lines the breed produces. Sires and dams by Champions and Grand Champions. Let me have your orders early. C. B. Cunningham, Mills, Sacramento County, California.

LARGE YORKSHIRE SWINE—50 choice gilts, open or bred. 20 yearling and Fall boars at attractive prices. You are at liberty to return what we ship you at our expense if price and quality are not satisfactory. Riverina Farms, Paradise Road, Modesto, or Box 2350, San Francisco, Cal.

REGISTERED DUROC JERSEYS—Only 5 of our choicest Fall boars, the best of 110 head, and 12 gilts left to offer. Am booking orders for Spring pigs, representing the most noted families. Entire herd in class "A" condition. Breeding guaranteed. Prices reasonable. Haden Smith, Route 1, Box 97A, Woodland, Cal.

REGISTERED DUROC-JERSEY — Weanlings, sheats, gilts and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

YOUNG'S POLAND CHINAS—Large type Boar, I. B. A. Wonder won first and reserve champion P. P. I. E., weighing 730 lbs. under 2 years in breeding condition. Weanling pigs, either sex—none better—$15 up. Satisfaction or money refunded. W. A. Young, Lodi, Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES — World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

REGISTERED DUROCS—"High Model" stock. 100 weanlings of both sexes. Also some mature sows, either bred to "River Bend High Model," or open. Prices reasonable considering the blood lines. River Bend Farm, St. Helena, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

RANCHO RUBIUS DUROCS according to winnings at last State and World's Fairs, are best sows in the State. Weaned pigs, large litters, now ready. $15, either sex. Elmer Lamb, Ceres, Cal.

MAYFLOWER THOROUGHBRED STOCK FARM—80 Duroc Spring pigs. Fancy stock priced low. Bred sows for Fall farrow. Write for breeding and prices. John Kincaid, Bakersfield, Cal.

BLATCHFORD'S PIG MEAL weans easily and safely, no trouble; no milk. Write for free folder, "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

LARGE, QUICK MATURING registered Berkshires—Both sexes, $10 each for weanlings. Older ones at farmer's prices. J. M. Bomberger, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen S. Day, Box 1140, Sacramento.

ROSELAWN STOCK FARM—Registered Poland Chinas and Shorthorn cattle. Young stock, both sexes, for sale. T. B. Gibson Estate, Woodland, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

BERKSHIRES AND POLAND CHINAS—Young thoroughbred stock. Best breeding. $10 and $15 each. Walker & Bent, Chino, Cal.

REGISTERED DUROCS from Eastern sows. One yearling and several Fall gilts. No culls. S. S. Southworth, Nana, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

PIGS OUT OF SUPERBA — Panama-Pacific Grand Champion Poland China. Booking orders now. Chas. R. Hanna, Riverside, Cal.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

ast three to five minutes according o the U. S. Dept. Agr.

An unusually large amount of nutton is being shipped east from California this season in refrigerator ars, seeming to indicate lamb short- ge everywhere.

W. H. Samson and E. E. Thomp- on, who have 1000 ewes on their iver ranch above Tehama, have old upward of 900 lambs at $5.25 o be delivered in July.

A "wool car" run by the U. S. Dept. Agr. and the agricultural col- eges, has been exhibiting sheep earing different grades of wool, amples of the various grades with heir prices, and exhibits showing he natural shrinkage, strength, and haracter of the grades.

According to T. H. Ramsey of Red Bluff there are not a thousand head of lambs in Tehama county that have not already been contracted for. The prevailing prices have been $5.00 to $5.25 with a few outstanding bands that will range close to the railroad selling as high as $5.25 for summer delivery.

Most of the wool in Tehama coun- y has been sold at prices ranging rom 24 cents upward. The con inued dry weather is drying up the owland pastures so fast that sheep men are already beginning to go to the summer ranges, although there s still too much snow in the moun- ains to allow general moving of locks. The situation is considered one of the most serious in recent years. The large flocks on the Stan- ford University's Vina ranch are still being held on the foothill pas- tures.

SWINE.

FOR SALE—Fancy belted Hampshire hogs. Well belted young sows and boars, registered. Prices reasonable. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonsall, California.

POLAND-CHINAS—250 lbs. in six months our aim. Imported sows. None better. Linn & Porter, Route A, Modesto, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

REGISTERED POLAND-CHINA SWINE — Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, $10. H. E. Boudier & Son, Napa.

REGISTERED BERKSHIRES—Old and young stock Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

FOR SALE—Registered Poland China Boar, two years old. Price, $20. H. Wohlleleven, Livermore, Cal.

PURE-BRED BERKSHIRES—Stock of all ages. Brae Bourne Ranch, Route 3, Box 172, Santa Rosa, Cal.

"BOARS"—Pure-bred Durocs. Write for description. R. A. Holdridge, Dixon, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED BERKSHIRES—Big-boned. Cholera immune. Riccomi Bros., Mountain View.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRE PIGS — Write or call. Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED POLAND CHINAS—Large type. C. M. Stetson, Route "A," Ceres, Cal.

REGISTERED BERKSHIRES — Weanling pigs, $10 each G. A. Casey, R. 7, San Jose.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

POLAND CHINA HOGS—Registered. J. R. Miller, Llewellyn Ranch, Lathrop.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

READAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Ripon, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

BEEF CATTLE.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco, or H. J. Macomber, Paicines, Cal.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of imported Villager 295884.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON-NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G. Ranch, Esparto, Cal.

GEORGE WATTERSON—Breeder registered Herefords, Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

THREE HIGH-GRADE HOLSTEIN HEIFERS—Very nicely marked and fine individuals. Four years, 18 months and 6 months of age. Price, two hundred. James H. Gray, Winters, Cal.

VANDERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly records. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller & Lux, Colony Farm, Dos Palos, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butters as two-year-olds. A. A. Jenkins, Tulare.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke Co., Lockeford, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

FRANK MEACHAM, Petaluma, California — Breeder Red Polled Cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS — Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

BULL CALVES from a grandson of Colantha Johanna Lad and from a son of King of the Pontiacs. J. W. Benoit, Route C, Modesto, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

HOLSTEIN HEIFERS FOR SALE—Fourteen high-grade and five registered. All bred to registered bull. N. E. Mulick, Willows, Cal.

HOLSTEIN BULLS out of A. R. O. cows, sired by a son of King of the Pontiacs. Prices reasonable. J. H. Harlan Co., Woodland, Cal.

REGISTERED HOLSTEINS—32 high-grade Holstein heifers coming fresh this Fall for sale. E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

ELEVEN REGISTERED HOLSTEIN COWS—Priced to sell as a bunch at very low figure. K. W. Abbott, Milpitas, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells live stock—any kind—any quantity.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

REGISTERED JERSEY BULLS from Register of Merit cows. D. F. Conant, R. "B," Modesto.

BREEDERS OF A. R. O. Holstein-Friesian cattle exclusively. Dirk Dairy Farm, Lemoore.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEYS — Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

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SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

BREEDER of Registered Holstein Cattle. Ernest Otto McClure, R. 2, Modesto, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED HOLSTEINS—Golden West Herd. D. & H. Rowles, Modesto.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

SHEEP AND GOATS.

ANGORA GOATS will clean up your rough land and furnish mutton for the ranch. Choice Mohair breeding animals at $5.00 each. Pino Grande Ranch, Guerneville, Cal.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

THE BULLARD FLOCK RAMBOUILLETS—Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

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BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets, Hanford, Cal.

HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

FOR TRADE—If you have young horses, mules, cattle, or land to trade for a young Jack, fully guaranteed, see James W. McCord, 508 N. Douty St., Hanford, Cal. Phone 471-J.

MISCELLANEOUS.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Coley Co., Inc., 631-637 Brannan St., San Francisco.

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

Holstein Bull



Peterje Cornucopia Creamelle.

The Dam of this bull is almost a 25-lb. cow; her average fat testing, 4.74%. This high percentage in fat of the dam shows that this bull would be an **excellent buy** for any dairyman who aims to improve the butter-fat output of his herd.

Write or come and see him.

F. STENZEL,

San Lorenzo, Calif.

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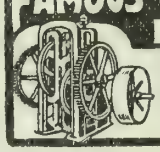
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Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 180837 and Breed's Model 165859, both winners of blue ribbons at State Fair.

Descriptive catalog upon request.

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Gilts from Weanlings to one year old. Bred or open. Boars from weanlings to 8 months.

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Veterinary Queries and Replies.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for $1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

BOAR'S SHEATH SWOLLEN.

To the Editor: I have a boar whose sheath is swollen and bags water. He lies down most of the time and gets up only to eat.—H. B., Bethany.

[Douche out the sheath daily with a 1-1000 solution potassium permanganate warmed.]

CALF PASSED RED URINE.

To the Editor: During the latter part of last winter a four-months-old calf, fully weaned and running on volunteer pasture, commenced to mope around and lose flesh. I could not make out what ailed it, but one morning saw it pass red urine. That day a veterinarian said it was white scours. I'm sure this calf never had any scours and its manure was like any other animal's on green grass. He gave me some white powders. When I got home the calf seemed some better, and improved from day to day until now it is almost fat and very lively. So it never got the medicine. A few weeks ago another calf three months old, getting a feed of six quarts of milk with a big spoonful of Croley Calf Meal and running on green grass, took sick like the other calf. I gave it some of the medicine and it died. On opening it, I found the bladder very full of red urine and the whole length of the large intestine was filled with hard manure, but it was all green like it should be.—B. H., Glenn.

[This is haematuria. It is caused by eating feed produced on sour soils. Give ounce doses of alum twice a day for two or three days.]

VACCINATION FOR BLACKLEG—FEED CALVES OFTEN.

To the Editor: I have been reading the Pacific Rural Press for some time. But one very important but neglected subject is the calf. I undertake to say that this State sustains a loss of $100,000 every year from one cause or another from calves that have never been properly started, stay "runty" and are subject to all kinds of setbacks. Then the healthy calf from four to twenty months old is subject to blackleg at any time of the year. Whether he is gaining flesh fast or losing flesh, he drops off.

Now I would like to know about this vaccine problem. I have used both pills and government vaccine, and I have bled them, and they still drop off. It is possible I have not given them the best treatment, so I should like to know how often to vaccinate and the best manner of treating them.

I see from the "Medical Journal" that it is an open question whether vaccination for man or beast is best. If you think the subject worth while, give us some light.

I have also heard all sorts of opinions as to the best time to castrate animals. Should one regard the signs of the zodiac to get the best results?—B. F. R., Adelaide.

[Your estimated figure is placed far too low; losses far exceed this figure. Practically all the digestive troubles of calves are due to faulty methods of feeding. A suckling calf if allowed to run with its mother will take small amounts of feed many times during the day. The present practice of giving a calf away from its dam all it will take twice a day is bad, and if dairymen would make a practice of feeding four and five times a day in small amounts the youngsters would be stronger and better constitutionally and be much freer from digestive disturbances which are at the root of the great percentage of calf troubles.

Vaccination for Blackleg is absolutely a success. The makers of this vaccine give full directions for its use, which cannot be improved upon provided the calf actually gets the vaccine injected into its anatomy. Blackleg vaccine will not, however, protect the animal from any trouble other than blackleg. With all due respect to the article you refer to in the Medical Journal, the writer absolutely believes in vaccination for both man and beast, which is proved by its results in his daily practice

The signs of the Zodiac have nothing to do with the results of castration. An operation properly performed with the proper after care will bring uniformly good results. The weather in the spring of the year when it is mild and before fly season begins is the best time.]

If present plans carry out, Chico will have the biggest livestock show ever pulled off north of Sacramento, May 22 to 28 inclusive. J. H. Guill, Jr., who has charge of the livestock division of the Butte County Spring Exposition, states that they are expecting good Shorthorn, Holstein, Jersey, Shire horse and hog exhibits, as they have already received entries from a number of Sacramento and San Joaquin valley breeders. It is thought that this show will stimulate interest in better stock in the upper Sacramento valley more than any other one thing. Mr. Guill says that 41 head of hogs have been consigned to the hog sale which will be held May 24. Prof. Gordon H. True and Prof. J. I. Thompson will do the livestock judging. The entire show will be held under immense tents.

Tagus Ranch

BREEDERS OF PUREBRED

Holstein Cattle
Polled Angus Cattle
Duroc Jersey Hogs

Tagus Switch, Tulare Co., Cal.

Oak Grove BERKSHIRES

CHOLERA IMMUNE

Our herd is Cholera Immune, the only Immune Berkshire herd in the State.
Fine herd boar in use and they are second to none on the coast. Our sows are of equal merit.
We know that we can supply what you want.

Write Us or Call.

OAK GROVE DAIRY FARM
H. G. ARMSTRONG, Prop.
Woodland, Cal.

Stanford Holsteins

HERD SIRES:
King of the Pontiacs 14th.
Dutchland Col. Sir Ormsby.

High class young bulls of serviceable age for sale, sired by one of our great bulls and out of A. R. O. cows. Prices right.

STANFORD VINA RANCH
VINA, CALIF.

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.
Write or call and see us.
SWINELAND FARM,
W. O. PEARSON, Prop.
Woodland, California.

Geo. A. Smith and D. Wiechman Sales

482 Dairy Cattle 482

Mr. Wiechman will sell at his ranch
FIVE MILES SOUTH OF CORCORAN, CALIFORNIA,
on the Angiola Road.

ON TUESDAY, MAY 16

90 extra fine selected Dairy Cows, mostly Holsteins and large producers.
40 2-year-old heifers coming fresh soon.
40 yearling heifers. Some bred. 30 heifer calves.
2 extra high-class Registered Holstein Bulls.
All young cattle and most of the cows were sired by Registered Holstein Bulls.
100 hogs, mostly feeders.

The Geo. A. Smith herd of grade cattle will be sold on Wednesday, May 17, at his Home Ranch, two miles south of Corcoran, and will consist of

60 high-grade heavy producing cows.
50 2-year-old heifers, coming fresh soon.
80 yearling heifers, many of them bred.
30 extra fine growthy, thrifty, heifer calves.
28 steers from 2 months to one year old.
10 extra high-bred young Registered Holstein Bulls ready for service.

Most of this stock was sired by Registered Holstein Bulls, and those that are bred are bred to a $900 Registered Holstein Bull.
20 very high-class, high-grade Guernsey heifers, fresh and coming fresh soon, and two very fine Registered Guernsey Bulls will be sold as a special attraction. **Inspection especially invited before the Sales.**
Terms: Cash, unless other arrangements are made before the Sales.

B. Wiechman, Geo. A. Smith
Owners

Col. Ben A. Rhoades
Auctioneer

GRANDSONS OF TILLY ALCARTRA

At Prices within Reach of Every Breeder and Dairyman.



A Grandson of Tilly Alcartra.

We have several splendid grandsons of this now famous cow which we can deliver to you at prices which will suit the pocketbooks of every dairyman wishing to improve the quality of his herd, whether it be a grade or pure-bred herd. These bulls are sired by our herd bull, Prince Alcartra Korndyke and out of A. R. O. cows, and are the only living grandsons of a cow having a record of over 30,000 pounds of milk in a year. Such an opportunity for increasing production has never been offered **DAIRYMEN AND BREEDERS** in California, price and quality considered. Buy one of these bulls and solve your low production problem. Write

J. S. GIBSON CO., Box 97, Williams, Cal.
"THE NAME GIBSON INSURES QUALITY."

HILLCREST STOCK FARM

Thornton S. Glide, Prop.
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SHORTHORN CATTLE

Shropshire and Merino Sheep

FOR SALE
SINGLE
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CARLOAD LOTS



KING LANCASTER,
Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.
THEY HAVE GRAND CHAMPIONS BEHIND THEM.

DUROC JERSEYS

—Our Old Customers Are Coming Back for More Stock—
—There's a Reason, Too—

In our herd are animals of the following breeding—Defender, Cherry Chief, Proud Col., Freed's Col., Mo. Model Top, Golden Model, and Crimson Wonder. We offer now eighty 9-11 months gilts and twenty brood sows, all open or bred to our famous boars.
Ranches, HOLTVILLE and DEVORE, San Bernardino Co. Address,

PETERS, LAMSON & WALKER
DEVORE, 500 Head Registered. CALIFORNIA.

GET STARTED RIGHT
Registered Duroc Jerseys.
$10 each PIGS $10 each
are money makers.
What's the use of raising "Scrub Hogs" when purebreds may be had at this price! They grow faster. Send today
NEW ENGLAND CALIFORNIA CORPORATION
RIPON, CALIF.

White's Berkshires

Are Money Makers.
THEY GROW.
Gilts and Boars
Out of First and Fifth Aged Sows
P. P. I. E.
F. W. WHITE, Elk Grove, Cal.

Dewey Strong & Townsend
SCIENTIFIC PRESS PATENTS PATENT AGENCY
911 Crocker Bldg., S. F.
Circular containing 100 mechanical movements mailed free.

Skim Milk-Barley Hog Ration Pays.

[Written for Pacific Rural Press.]

As long as hog buyers persist in paying the same price for soft half-finished hogs, does it pay to feed high-priced grain even in face of the more rapid gains?

This is the question asked on all sides when a suggestion is made that more grain in the pig's ration would make a better growing hog. S. F. Bonner of Gridley is most emphatic in saying that it does. His conclusion is based on results he has secured in raising and fattening hogs for the market on a dairy ranch, where skim milk and alfalfa are the usual feeds for hogs. In fact his records show that when charging 12 cents a hundred for skim milk and $1.15 a hundred for barley, the actual cost of producing a pound of pork was three and three-quarters cents a pound.

Mr. Bonner starts to feed his pigs before they are born, giving the sows a ration composed of rice bran slop. This is continued till two weeks after farrowing, when rolled barley and skim milk are substituted. These are fed all the sows will eat, being mixed about one part barley to seven parts of skim milk. This not only keeps the sow in good flesh but also gives the pigs a healthy start.

As soon as the pigs are old enough to eat some, five or six weeks, they are fed in separate troughs, fenced off from the sow, a ration of barley and skim milk, mixed one part barley and three parts milk. They are given all of this ration they will eat from weaning time till marketed, which is usually right around six months at a weight of 200 pounds.

In April a bunch of pigs was seen on Mr. Bonner's ranch that were three months old. This lot was receiving a little better than two pounds of barley and seven pounds of milk a day and were making gains of eight and nine pounds a week each.

While such gains are largely due to the feeding, Mr. Bonner attributes no small portion of his success to breeding, his practice being to breed grade Poland China sows to registered Chester White boars, and the value of this cross is evidenced by the large uniform litters on the ranch.

Not only does Mr. Bonner disagree with the usual feeding method in vogue, but also with the idea that white hogs sunburn in the hot interior valleys. He states that in his experience he has never had a white hog sunburn or become scaly and contends that the reason for this is filthy wallows, where the hogs roll and get covered with mud, which later dries and irritates the skin. He provides his hogs with plenty of good, clean drinking water but no wallows.

At a small expense he has erected movable farrowing houses in the division of each pen, large enough to accommodate two sows. So far he has not fed alfalfa hay or pastured his hogs on alfalfa, but later he expects to seed each pen to alfalfa.

HOGS SHOULD DRINK MORE.

[Written for Pacific Rural Press.]

Keeping only the best sows for breeding purposes, as well as careful attention and feeding, are the causes as given by Elmer Lamb of Ceres for the general healthy condition of his Duroc herd, splendid litters full of life, and with practically no runts.

Mr. Lamb has fed a great many spineless cactus the past season, and has found them fine succulent feed especially in winter when he has no other green feed. The large percentage of water in the cactus keeps the hogs healthy, as in the cold season with ordinary feeds they would not drink enough water.

Two weaned sows and a boar by Oran Cherry King Jr. and out of Ohio Lady were recently sold to F. A. Heron of Modesto; 1 sow and boar of the same breeding to John Kincaid, Bakersfield; 1 gilt to J. H. Herch of Denair; 2 Oct. gilts to Wm. McIntyre, McFarland; 2 bred gilts to Mrs. Hattie Bingham, Denair.

Lieut. Bryan, U.S.N. stated before the Am.Soc.of Naval Engineers: "Oils made from the asphalt-base crudes have shown themselves to be much better adapted to motor cylinders, as far as their carbon-forming proclivities are concerned, than are paraffine-base Pennsylvania oils."

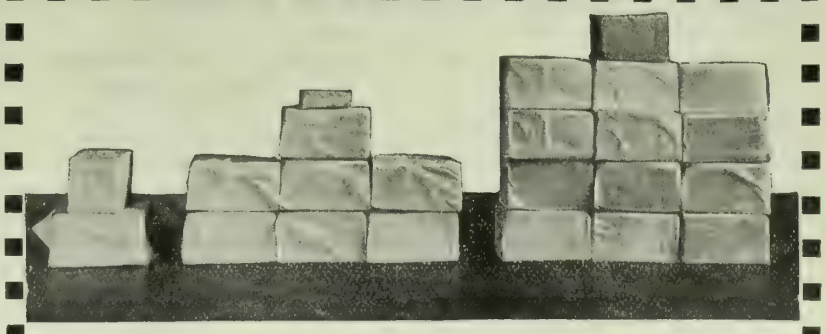
Zerolene is scientifically refined from selected California crude—asphalt-base. Highest competitive awards, San Francisco and San Diego Expositions. For sale by dealers everywhere and at service stations and agencies of the Standard Oil Company.

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Warranted to Give Satisfaction.
Gombault's
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Has Imitators But No Competitors.
A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.
As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address
The Lawrence-Williams Co., Cleveland, O.



Separator running at full speed. Loss of butter 1.75 pounds
Speed reduced 10 revolutions. Loss of butter 7.28 pounds
Speed reduced 20 revolutions. Loss of butter 12.74 pounds

Which pile did *you* lose?

These figures from the Purdue Experiment Station Bulletin No. 116, show the loss in butter resulting from not turning a fixed-feed separator at exactly the speed stamped on the crank.

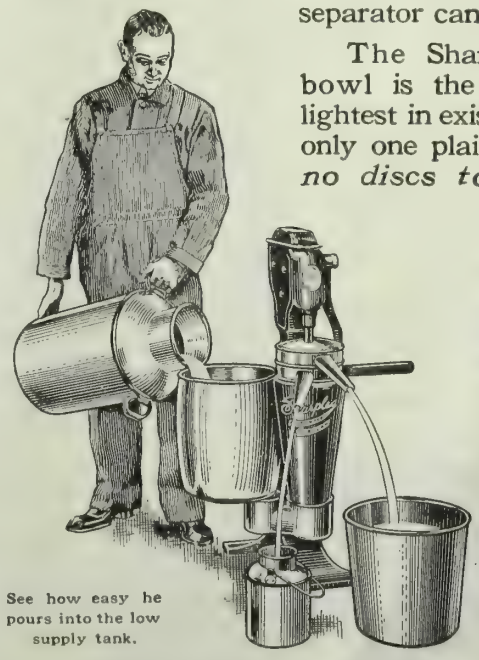
And investigations showed that 19 out of every 20 separator operators thruout the country turned their machines too slow much of the time.

THE NEW
SHARPLES
SUCTION-FEED

is the *only* separator made which *will not lose cream at varying speeds.* The wonderful "Suction-feed" always feeds the milk to the bowl in exact proportion to the separating force being generated. At 45 revolutions it *skims clean;* at 55 it *skims clean* and at 35 revolutions it *skims equally clean.* No other separator can do it.

No matter how you turn the New Sharples you always get *even thickness* cream. Just set the cream screw at the desired thickness and it will come out *velvety* and *even*—no matter how you vary the speed. No other separator can do it.

The Sharples Tubular bowl is the simplest and lightest in existence. It has only one plain part in it—*no discs to wash* and bother with.



See how easy he pours into the low supply tank.

All these and many other features explain why the New Sharples is the profitable separator for *you* to use. It is described in detail in catalog *"Velvet" for Dairymen.* Send for your copy today. Write Dept. 31.

The Sharples Separator Co.

Also Sharples Milkers and Gasoline Engines

West Chester - - - Pennsylvania
Chicago San Francisco Toronto Portland P

Farm Poultry for Profit.

GREEN FEED FOR LATE HATCHES AND HENS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona, Cal.]

Green feed must be had if any profit is expected.

For the farmer with land plowed and harrowed in season there is no need to be afraid to venture planting green feed, the moisture will come up to grow it if he does his part right and selects the kind of feed that does best in dry weather.

I have always found that the Dwarf Essex rape seed was the quickest to respond to dry weather conditions. It likes a soil a little moist to germinate the seed, but after that it thrives and grows even though the ground is dry and hot.

It is best to sow the seed rather thick in the row and have the rows rather close together. As a help, run something over the rows of seed to pack the soil close. The finer the soil is worked the better, because it holds and draws moisture better than when rough and chunky.

After the plants get up it will be well to stir the soil between the rows every few days until they cover the ground. Now by planting about every two weeks one can have a succession of green feed with very little labor. If the ground is so dry it will not germinate the seed, dig a shallow furrow and put the garden hose on it for a half hour, then when the water has soaked in stir the soil and sow your seed. This will insure your crop starting.

Lettuce also gives good return for labor, and most everything likes lettuce. Chickory is also a good green feed for old and young alike. Of course the man that has alfalfa is ahead of all these things except in the fall when chickens do not care much for alfalfa.

Good strong kale plants or cabbage can be set out where the ground is too dry for starting seeds. Plant as you would tomatoes by putting water in a hole prepared for the plants, drop the plant in the hole and seal the root from the air by pouring about a cup of water over the soil. When all are planted cover up with the soil taken out and shade the plants if day is very hot; by planting in the evening it is possible to do without shading and this saves much work.

Kale and cabbage plants are very subject to plant lice in our dry climate, but these pests can be kept down by blowing insect powder on the under sides of the leaves.

POULTRY AND POWER ON TWO ACRES.

(Continued from page 561.)

All those chickens receive ground grain and chopped green stuff daily throughout the year and the cost is not prohibitive, for a sack of corn is ground up in 20 minutes and cracked in half that time by this 2 h.p. distillate burning engine. Wheat is often cracked because less of its energy is thus consumed in digestion. Oats and barley are ground. Shells are ground finer and made more economically available. Oat hulls are sifted out to be used in the brooders. They make the finest kind of dry litter to keep the chicks healthy scratching for the fine feed that is thrown on this litter. The hulls always contain more or less flakes of the oat grain nearly like rolled oats—"makes fine picking. Here are 200 chicks hatched two weeks ago. Haven't lost one."

Feed Grinders and Mixer.—The feed grinder is fixed solid outside the engine house and runs from the same broad engine belt wheel as the air compressor. Another belt runs from the same belt wheel to the feed chopper located above the grinder. Another belt from the same wheel runs still higher to turn the feed mixer. The grinder hopper is removable so that a larger one with larger opening can be put on, and dry alfalfa hay is ground to meal in the same machine. When oats are being ground, a little belt is fixed to the grinder shaft to run the shaker which sifts out the hulls.

Chops Green Stuff.—"Green stuff makes eggs. We have 10 layers' yards, five on each side of an alley, besides a big yard and some little ones. The hens are switched back and forth onto the stubble after we have cut the greens. Where the hens have just been switched to other yards, we sprinkle the ground, sow grain broadcast, plow it under, and don't have to wet it again. In 9 days it is up three inches. We have more greens than we can use. We cut most all of it and run each

Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

WYANDOTTES—Beautiful, useful and profitable. Best for showing; best for egg-laying; best for table. Largest Wyandotte Farm in the Southwest and the only complete family of Wyandottes known. Eleven varieties and each from the finest strain bred in the United States. Hatching eggs and baby chicks reasonable. Write us for full particulars. VILLA WYANDOTTE FARM, Villa Road Lamanda Park, Cal.

NOT TOO LATE for chicks if you get our White Orpingtons, trapnested and bred for early maturity as well as heavy laying. Begin laying at five months, just when eggs are highest. Baby chicks and hatching eggs for sale from 1000 grand range-raised birds known throughout the West as big money-makers. Prices reasonable. Catalog free. WHITTEN RANCH, R. D. 5, Box 647, Los Angeles.

LIVABLE BABY CHICKS—We are supplied by reliable Breeders and experienced hatchers. Better chicks cannot be had from any source. All varieties, any number. High quality bird bargain prices laying hens and pullets. Free exhibit. Everything in Poultry, Pigeons, Rabbits, Dogs, Cats, Canaries, Pets. Give us a call or write. **Fancier's Exchange**, 642 S. Main St., Los Angeles, Cal.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the deserved **Heavy Winter Layers.** W. C. Smith, Prop., Corning, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Will and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396. Los Gatos, Cal.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

MAY CHICKS—Our utility breeds, R. I. Reds, Barred Rocks, Black Minorcas, White, Brown Leghorns by the dozen, hundred, thousand—at prices that mean business. Send card for special circular and offer. Will save you money. Roofden Poultry Ranch, Campbell, Cal.

BABY CHICKS—We will hatch during May and June, so order now and get them when you want them. All good strong youngsters from good layers. White and Brown Leghorns, Barred Rocks, R. I. Reds and Black Minorcas. Campbell Poultry Ranch, Campbell, Cal.

PLACE YOUR ORDER NOW for May delivery of White Leghorn chix from Jackman's pure-bred, heavy-egg producers. You get the best at lowest price, $7 to $8 per hundred. Special low prices in large lots. Sunnyside Poultry Farm, Route 2, 1610 Vine St., Sacramento, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., INC., Poultry Supplies, San Francisco.

INCUBATOR CHICKS—White Plymouth Rock, White and Brown Leghorn. Highest class of stock bred to standard and to lay. If you are interested in the best send for catalogue. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

EGGS FOR HATCHING—True-to-type Barred Rocks of a first-class utility strain. Large birds bred to lay $1.25 per 15; $6.50 per 100, charges prepaid and safe delivery guaranteed. G. L. Horine, Box 52, Winton, Cal.

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THOROUGHBRED HATCHING EGGS Barred Rock, R. I. Reds, Buff Minorcas, White Rocks, Blue Andalusians, India Runner Ducks. Ducklings and breeders on sale. Cedarhurst Ranches, R. D. 2, Sacramento.

WHITE LEGHORN CHICK BARGAIN! 1000, $70 100 lots $8 express paid. First-class Hoganized yearling breeding stock. First-class chicks. Rinconada Poultry Ranch, Campbell, Cal.

BUFF ORPINGTONS—Eggs from high-class matings that have correct color, shape and large size. Choice exhibition and utility stock for sale. No chicks. E. J. TALBOTT, San Mateo.

PLACE YOUR ORDERS with the SANTA CLARA HATCHERY for the different breeds of baby chicks and baby ducks. Joseph A. Bihn, Prop., San Jose, Cal., Route 6, Box 336C.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized, heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorcas, White Leghorn stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

BABY CHICKS—Strong and healthy, from high-bred free-range White Leghorn stock. Prices on application. Western Hatchery, W. S. Waldorf, Petaluma, Cal.

WHITE ORPINGTONS AND BUTTERCUPS—Hoganized and Tested—220 egg strain breeders. Chicks and eggs for sale. M. S. Woodhams, San Mateo, Cal.

ORPINGTONS, BUFF AND WHITE—Black Minorcas and Carneaux Pigeons. Cockerels ready for service. Susan Swaysgood, Route 2, Pomona, Cal.

HERE IT IS—White Rock baby chicks. $15 per 100. Hatching eggs, $1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ceres, Cal.

BUFF ORPINGTONS; BUFF LEGHORNS; BOURBON RED TURKEYS; BUFF DUCKS.—Summer sale of high-grade breeding stock and hatching eggs. Send for price list. The Ferris Ranch, Route 2, 144D, Pomona, Cal.

BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trapnested stock. Fairmead Poultry Farm, Fairmead, Cal.

BLACK MINORCA, BUFF ORPINGTON, R. I. Reds, eggs for hatching. Also cockerels for sale. Mrs. R. A. Holdridge, Box 282, Dixon, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and cockerels. B. C. Quessenberry, R. 4, Lodi, Cal.

RHODE ISLAND RED BABY CHICKS and Eggs. Heavy laying strain. Send for circular. Rosedale Ranch, R. 1, Hayward, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs $2 to $5. Chicks, pullets, cockerels. R. W. Stawetzki, Route 2, San Jose, Cal.

TRAPNESTED LEGHORNS—White and Buff Stock. Eggs, chickens. Arthur R. Schroeder, Box 179B, Mountain View, Cal.

BARRED ROCK AND R. I. RED CHICKS—$11 per 100. Good chicks. Safe delivery. G. L. Hawley, Madera, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

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BOURBON RED TURKEYS—The best Bourbons west of the Rockies. Four firsts on males at Panama-Pacific and Los Angeles, 1916. Eggs from large, dark, free-range hens mated to 1st Los Angeles old Tom, $3 per 12, $5.50 per 25. Summer sale on hens bred to old Tom. Send for price list. The Ferris Ranch, Route 2, 144D, Pomona, Cal.

HART'S BRONZE Turkeys — Vigorous young stock. Eggs by the setting or incubator lots. Circulars free. Albert M. Hart, Clements, Cal.

MAMMOTH BRONZE TURKEY EGGS from selected stock. Also young Toms. M. M. Reiman, Planada, Cal.

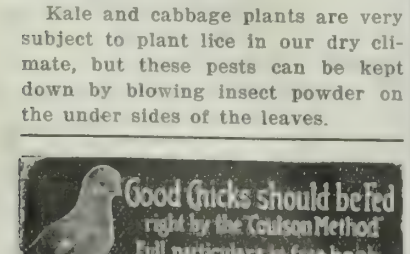
PEKIN DUCK EGGS for hatching, $1.00 per dozen. L. D. Collins, R. F. D., 54G, Denair, Cal.

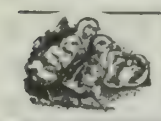
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BELGIAN HARES—Young stock for sale. Hurd Bros., St. Helena, Cal.

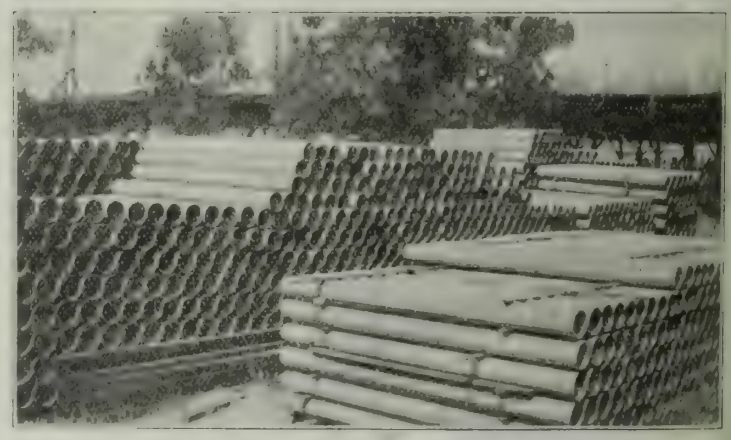




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FOR SALE—Two 40 in. by 60 in. Russell Threshing Machines, with pneumatic stackers. For particulars write to owner. H. P. Mohr, Amador Valley, Alameda County, Cal., Pleasanton P. O., Box 277.

FOR SALE—Used Ranch Tools, Windmills, pumps, engines, new galvanized tanks; 1000, $22.50; 2000, $32.50; guaranteed. Save half. Demmitt Company, 120 North Main, Los Angeles.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars Pacific Co-operative League, D236 Commercial St., S. F.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds $3.00 delivered. Order with remittance. WM. SCHROTH CO., 112-B Market St., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building Stockton, California. Established fifty years.

CONCRETE MIXERS—2 brand-new mixers at manufacturer's prices. Write at once. Commercial Iron Works, 481-497 Fifth St., San Francisco.

WINDMILL FOR SALE—16 feet power aermotor and 40 feet steel tower, A1 condition, at bargain. Ogden Bolton, Jr., Route 6, Santa Rosa, Cal.

TREES AND PLANTS.

FOR SALE—Manzanillo Olive Trees, budded on Pichone seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

SWEET POTATO PLANTS—Yellow Jersey, Red Jersey, White Pacific. Strong plants; inspected. $2 per 1000, postpaid. R. M. Plympton, Arroyo Grande, Cal.

PEDIGREED BURBANK FRUITING-FODDER—Cactus plants. 100, $7.50; 1000, $45; 10,000, $300. El Campo Co., 227 Story Bldg., Los Angeles.

FOR SALE—300,000 yellow Jersey sweet potato plants. Prices from $2 to 50c per thousand. For information, write Parker Bros., Hemet, Cal.

ALL NAVEL, VALENCIA and LEMON trees, $15 per hundred, packed in moss. Less than 100 lots, 18c each. C. Johnson, Azusa, Cal.

FOR SALE—Spineless Cactus Plants. Prices right. C. Engbert, Byron, Cal.

WELL BORING — Water guaranteed. Low prices. David Bahrs, Marysville.

SEEDS AND BULBS.

WE BUY ALFALFA SEED containing Dodder, Mustard and other noxious seeds. Send us sample of any high or low grade seed you may have; also of mustard, burr and sour clover seed, flax, etc. Signed Mercantile and Warehouse Co., Fifth and Poplar Streets, Oakland, Cal.

SEED BEANS—We have choice Red Mexican and Buckeyes grown on sand land, producing a heavy crop well cleaned and in good order. Write for prices to THE GRANGE COMPANY, Modesto, California.

LAND FOR SALE

IF YOU ARE LOOKING for a profitable Poultry and orchard income home, pleasantly located, close to schools, churches, stores, electric and steam cars, in thriving American neighborhood, then investigates this at once. Two acres, bearing fruit, new bungalow and buildings, best of market for products at door, much larger income than usual from the poultry and at a price that will sell it quick. $1000 or less will handle. Address Owner, George Ellison, Campbell, Cal.

FOR RENT—Dairy ranch—440 acres, about 15 acres in alfalfa (60 more can be planted); 20 milk cows. 10 miles from R. R. depot. County road and creek running through ranch, pumping plant. 20 h.p. Ostenberg gas engine, pump water from creek. School, 3 miles. Long lease to satisfactory party. Rental, $1200 per year, in advance. Victoria E. Oldham, Palermo, San Benito Co., Cal.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

FOR SALE—Small improved homestead of 40 acres, with or without apiary. On good roads. $500 without apiary. If desired apiary also for sale. Address Owner, Mrs. Ida Young, Lockwood, Monterey Co., Cal.

FOR RENT OR SALE—Land for Asparagus, Dairy or Beans. Address James M. Berry, Thornton, San Joaquin County.

EASTERN KANSAS FARM—160 acres, well improved. Trade for small California farm. J. L. Buck, Chowchilla, Cal.

MUSCAT VINEYARD 60 acres, olives 10 acres, by owner. Box 266, Lincoln, Cal.

WANTED.

WANTED — RESPONSIBLE REPRESENTATIVE — 12 sales in 1. Sells to farmers, teamsters, contractors, etc. Lifts 3 tons, hoists, stretches wire, pulls posts, many other uses. Free sample to active agents. One agent's profit $45 in one day. Another $1000 in Dec. Let me start you. Write for Big Color Plate. Secure exclusive sale. HARRAH MFG. CO., Box M, Bloomfield, Ind.

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. R. Humphrey, Principal, Stockton, Cal., Box 704.

WANTED—A position as ranch superintendent. Qualified by experience and agricultural college training. Straight salary or salary with share in profits acceptable. Box 214, Pacific Rural Press.

day's cutting through the green feed chopper. We have a little alfalfa patch which Alfred chops and dries on trays for the rabbits. Green stuff makes eggs. Here are 100 Hoganized white Leghorns shelling out 80 to 85 eggs per day. We got 425 eggs yesterday from the 650 hens. We chop a cartload of greens per day and feed it in troughs where it keeps clean. The sides of the troughs are spaced off with vertical lath 16 inches tall so there is no waste."

The octagonal feed mixer is housed with the sacked ground feed, though its belt wheel is in line with the engine. The composition of the feed varies daily, for the Hennings family watch their chickens closely. It is different, too, for the growing chickens, the brooder chickens, the layers, and the breeding pens which are kept separate.

The mixer holds several sacks of feed which are dumped in proper quantities and rotated so that the feed falls through wires stretched across inside to help mix it. Five minutes does the work. Besides the grains and greens, oil meal, beef scrap, bone meal, shorts, and charcoal go into the ration and a scratch feed made of assorted whole grain is fed in the open, after mixing it dry by hand.

Capital.—Mr. Hennings used some of his original capital to buy the two acres and put up the buildings six years ago. All stock, trees, machinery, and living have been made on the place. He saved $125 on the cost of the house by sawing lumber with the little engine.

To Markets by Auto. — San Gabriel is some distance from Los Angeles, so it was necessary to fit the automobile with a body to carry eggs, etc. Gasoline being too expensive, he put on a Spitdorf magneto and Master carbureter so that the automobile burns cheap distillate. This car has been in use five years. After a cold night it requires a little gasoline priming to start, but no priming is used during the day. At night the magneto is switched onto electric headlights. One cafeteria takes all their eggs with some from their neighbors twice a week; "124 dozen last Tuesday."

Vicissitudes. — The Friedheim Poultry Ranch was not built in a day nor without misfortunes. An acre of rhubarb made them $1500 the first year, $1000 the next year and then went to the bad for lack of markets. They turned to turkeys, up to 400 or 500 per year. These paid well for a while, but are now being reduced in favor of the more staple White Leghorns. The last of the rhubarb was dug out this spring and the orchard trees which have been planted on this ground are being intercropped with potatoes, berries, garden vegetables, sweet corn, beets, and mangels, the latter to be chopped for the chickens if green feed ever gets scarce.

Every tree was planted by the Hennings. Their first house was a little temporary cracked paper-finished shack. Their home now is a large two-story ornamentally finished bungalow, a credit to the neighborhood. Large palms decorate the front lawn and tropical as well as California flowers about the house and yard. Concrete gate posts support the ornamentally designed name of the ranch. An umbrella tree shades the screened summer kitchen, a piano and phonograph supplement the mirrorscope for entertainment, and the Hennings are now really living.

MISCELLANEOUS.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

GAS ENGINES—I can furnish rebuilt Fairbanks, Morse, Otto, Peerless, Samson, Union and other good makes in all sizes. All investigators buy and all buyers are delighted. Pay when satisfied. J. J. Pottinger, 189 2nd St., San Francisco.

IRRIGATION EQUIPMENT—For pumps, oil engines, gas engines, friction clutch pulleys, etc., write us. We can save you money. Commercial Iron Works, 481-497 Fifth St., San Francisco.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

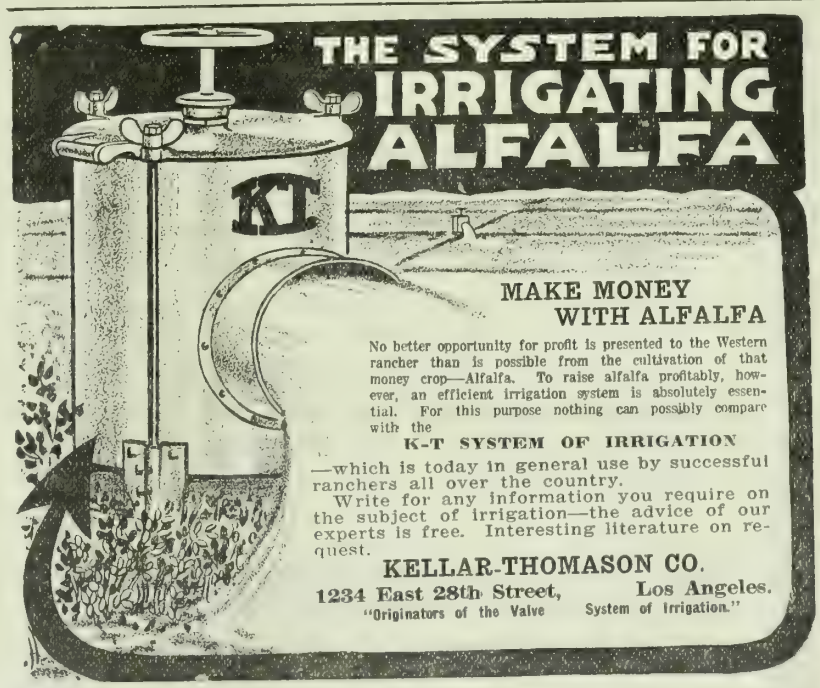
FOR SALE—A well-stocked nursery in a good business location. 5318 Geary St., between 17th and 18th Aves., San Francisco.

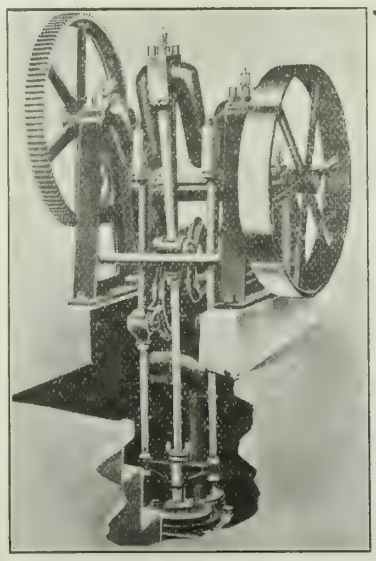
POULTRY NOTES.

Scarcity of poultry combined with the Easter demand, caused a sharp advance of prices. Remember this next Easter.

For lice and mites Geo. Fan of Ceres sprays with water which has been run over carbide, 50 gallons per 10 pounds. He says it is sure death to all vermin on poultry or stock and will cause the vermin to vacate buildings.

Plans for a $6,000,000 reservoir to catch flood waters of Kings river and prevent recurrence of the disastrous floods recently experienced at Tulare Lake, have been approved by officials of the Alta Irrigation District. It is proposed to assess the cost against all water companies in Kings River Valley.

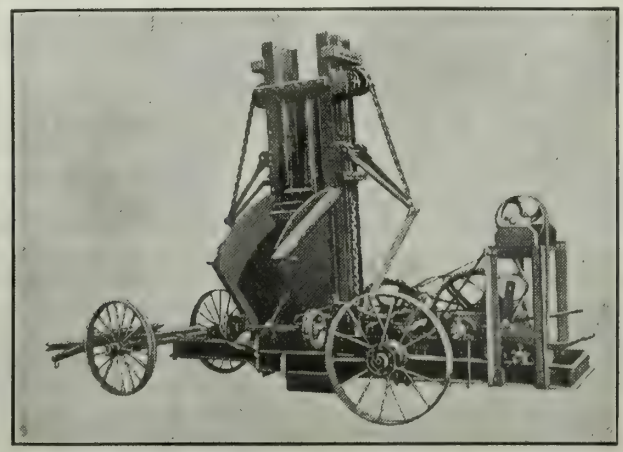




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The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends:

I saw a new thing in rugs at one of the furniture houses called Siberian Porch rugs that looked as though it were made of heavy twisted cord. It comes at about the same price as the Crex rugs and was certainly much better looking.

Displayed in this same store were the most brilliant colored tables and chairs for use out of doors—bright yellow tables and vivid green chairs with the gaudiest of chintz cushions—color and plenty of it seemed to be the object of the display. While an adjoining window had the always practical, everlasting rustic hickory in both tables and chairs.

One of the big china houses is having a silver display of many patterns which are made in both plated and sterling ware—in fact they state that only a jeweler can distinguish one from the other. The trend is most decidedly toward the plain patterns—something anyone who has the care of silver will be glad to hear, for it is much more work to keep an ornate pattern clean than a plain one. All table silver is to be advanced in price the first of the month, due to the increased cost, not alone of silver, but of the baser metals.

Those of you who are clever with your needles or who have a bridal shower to prepare a gift for, will be interested in a window of stamped linen articles that I saw. These included card-table covers, pillow cases, small bath towels, hot roll and sandwich holders and they were all most reasonably priced.

One of the gift shops had leghorn hats painted in wreaths of forget-me-nots and roses—we have had the painting on maline and net some time, but these are the first hand-painted straw hats I have seen.

Some of the stores are showing fancy collars of crepe or net with plaited frills attached to extend to the waist line. They would dress up the plainest kind of a waist.

I saw in a clothing store very good looking leather belts in either tan or black with initial buckles. Some of them with the three initials, while others only had one. I could not help but think how proud any boy would be to have one for a birthday or graduation gift. They were only seventy-five cents. Devotedly yours, **Rosabella Best.**

KEEPING HAMS.

Many different plans for keeping hams through the summer are suggested. A very successful method is to dust the ham with pepper, especially around the bone, wrap in paper, then enclose in a muslin bag with a loop to hang it up. After the bag is carefully closed, paint it all over with melted paraffine, paying especial attention to the seams. Hang the meat in a dark, airy place with the windows well screened.

Oil of lavender placed in a saucer and slightly diluted with warm water is claimed to rid a room of flies in a very short time.

PREPARE FOR SUMMER TIME

From the Imperial Valley, where it does get warm in the good, old summertime, comes a description of a house built for summer comfort, that may interest some of the dwellers in other valleys of the state.

The secret of the coolness of this house is in the double roof, dropping windows and a long screen porch.

Over the regular roof of the house, there has been constructed a second roof with a space for passage of air between. At the ridge of the outer roof, there are provided a number of ventilator shafts, so that warm air reaching the top may readily escape.

The dropping windows of the house are a novelty. They are built high in the wall and are rather shorter than the ordinary window and when opened are shoved downward into the wall. This causes the opening at the top of the window, giving the air at the top of the room, which is the hot air, a chance to escape.

A desert cooler, which can be built very easily at home, is also a feature of this house and helps keep food in good condition in the extreme heat. Build it just as you would an ordinary cupboard, only have the back and door at the front made of burlap.

Cover the top of the cupboard with a zinc pan, in which there are tiny holes around the edges. The zinc pan when filled with water will keep a steady drip over the burlap sides of the cooler, and the breeze passing through the damp cloth thoroughly cools the interior. The cooler should be kept on the porch or outside the house where the wind can strike it.

In the corner of a back room of the house, or out-of-doors if desired, a shower bath may be improvised. If outside the house, there must be a board walk laid, for comfort. If the farm has an artesian well or a gasoline engine, that will pump water into a high tank, the problem of water pressure for the shower will be easily solved.

The screen porch makes an outdoor room by day and can be used for a sleeping porch at night. The collapsible cots that can be turned up against the wall during the daytime make comfortable beds and do not occupy too much space.

Trellises or arbors with quick-growing vines combined with a few flower beds about the yard help make a restful atmosphere about the home.

HOME LAUNDRIES.

The Home Economics Specialist of the University of Arizona urges all farmers who have gasoline engines to have power-equipped laundries in their homes, to relieve the busy wife of one of the hardest burdens. The cost of the laundry is not prohibitive as washing machines with wringers are about $25, stationary tubs about $10 and then there would be the expense of piping connections, which expense would be comparatively small, if the men on the farm could do the work themselves.

FLORAL DEPARTMENT.

[By Geo. N. Tyler.]

Carnations are, next to the rose, the most popular variety, but new varieties quickly run out, due to overpropagating and forcing. Where today is the Mrs. Thos. Lawson, the so-called $30,000 Flora Hill, the leading white of its time, and so on? Even the old reliable Enchantress is on the go and in a few years you will see the last of it, but a new one will come along to take its place. Matchless and White Wonder are displacing White Enchantress.

Buy your small plants now, out of 2¼ or 3 in. pots. They should have been planted a month ago. Make your bed very rich, also give plenty hydrated lime in the soil, for they thrive on lime; before blooming give a liberal application of bone meals.

After planting them out, give the bed or plants a good watering and when it dries out enough to work, cultivate thoroughly and let go on the dry side till growth starts. After they are up four or five inches, pinch the tops out to make them branch; you can continue the pinch at intervals till August, then let them run up flower shoot and they will make good flowers as soon as the cold weather sets in. At this time give them a liberal dose of bone meal, and about one inch dressing of half rotted manure. They like sandy soil, but will do well in most any soil except heavy adobe. They like an eastern exposure, shelter from strong winds, and shade from hot afternoon sun.

Insect Pests.—The green lice attacks them; keep them down by a strong spray. A climbing cut worm eats out the heart of the flower buds; there is only one to a plant and if you go out after dark with a lantern you can generally find them working, or else look around the base of the plants where they hide in the day. They are about ½ inch under the soil. Fungoid diseases, die-back, anthracnose fairy ring, black spot, and a new disease, yellows—branch rot. These can all be kept under control with a good fungicide; Bordeaux mixture is good.

Here is a fungicide that I have used with success for a number of years with good results, both in the garden and greenhouse: Take 25 lbs. of quicklime and put in a fifty gallon barrel, add enough water to cook the lime, and while cooking add 10 lbs. of flowers of sulphur. After it is all cooked up fill the barrel with water and stir thoroughly, then let settle. After the resulting liquor is clear it will be a golden color. In spraying the plants in the garden, that require a fungicide, use one part of the liquid to one of clear water; spray the ground around the plants, and the foliage. It will burn up all diseased foliage but will not hurt the tenderest growth. Spray on a hot day, the hotter the better, about noon. It will keep indefinitely as it forms a scum on top and does not evaporate. After you have emptied the barrel you can fill it up with clear water, stir thoroughly, and when settled use the resulting liquid clear.

Gophers greatly love carnations and do a great deal of damage. If you cannot trap them off or smoke them out, make a wire frame and grow carnations in it. Dig your hole for your plants and frame about 10 in. square and 10 in. deep; cut a piece of one-inch chicken wire that has been galvanized after weaving, 10 inches square and place in bottom of hole. Cut a piece 10 inches wide and 30 inches long and make a round cylinder. Place cylinder on 10-inch square piece, fill up with soil and you have an absolute gopher-proof cage to grow your plants in.

Supports. — Make a cylinder, as thick through as you desire, out of 12-in. wide 1½ in. mesh wire; get some flat stakes ⅛x1¼, about 2 ft. long; weave the stakes through the 1½-in. mesh, first painting them green, so they will look nice in the garden. Any plant that you desire to fix up, first tie to a center stake, slip the support over them and then cut the strings. As the plants grow you can slide the support up on the stakes. Never tie a plant up to a center stake as it only breeds fungoid diseases. The air must circulate through the plants so they will dry off thoroughly after spraying, etc.

FRUIT JAR COVERS.

To the Editor: I have been told that the Mason Jar Co. (or some other company) is making a new cover for the Mason jar, similar to the Economy jar top, that seals by suction in the same way, and requires no screwing. Could you tell me if this is so; and if so, where I could buy the covers? If this is so, I shall keep my Mason jars; but if not, I shall do away with the Mason jars and buy Economy, as the fruit is so much easier canned, of so much better flavor, and keeps so much better in the Economy jars.—Mrs. S. P. Barnett, Pope Valley.

The Mason Jar Co. have on the market a new jar the same shape as the Economy and sealing in the same manner. They have a new top for the old style Mason jar, made in two parts—a circular piece which just covers the top of the jar and a rim which fits over the edge and screws on.

TO DESTROY ANTS.

To the Editor: Will you please tell me how to keep ants out of a house?—L. D. G., Fairmead.

The Kellogg Ant Paste, which is like a very thick syrup, is good to spread along the line of march and they come in swarms to devour it. Then they leave, supposedly to die, and none will return for some time, but ultimately they do come back, unless this paste is renewed from time to time. The University of California, which has been waging a war of extermination on the Argentine ant, is recommending the use of preventives in the yards. There are small tin cans on the market containing sponges which are to be wet with an Argentine Ant poison and placed wherever ants are in evidence. Any druggist can get this for you. The theory is that if the ants are destroyed in the yards, there will be none to enter the house.

Get the mosquito netting in place and fly-traps in working order.



Saves 1/3 Your Fuel

—a one-third saving on your fuel bill, year after year, doesn't that make it worth while to find out about this range instead of picking out a range on its "looks?"

It's a perfect baker first and always, and needs no blacking.

Arcadian Malleable Charcoal Iron Range

Built like a locomotive boiler. It stays airtight, because it is rivited metal to metal with no stove putty to crumble and let in false drafts, that boost fuel bills, and spoil baking.

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NO MORE ANTS



KELLOGG'S ANT PASTE MAKES ANTS DISAPPEAR

— AT ALL DRUGGISTS —

The **STEPHENSON Patent Cooler**
No Ice Required

Perfect Ventilation Absolutely Sanitary



Awarded first prize wherever exhibited. If not for sale at your dealer's, write for particulars and prices.

L. Anderson Co., Mfrs.
MARTINEZ, CAL.

IT CAN BE DONE.

Somebody said that it couldn't be done
But he, with a chuckle, replied
That maybe it couldn't, but he would be one
That wouldn't say so till he tried
So he buckled right in, with a trace of a grin
On his face. If he worried, he hid it.
He started to sing as he tackled the thing
That couldn't be done; and he did it.
There are thousands to tell you it cannot be done
There are thousands to prophesy failure.
There are thousands to point out to you, one by one
The dangers that wait to assail you;
But just buckle right in with a bit of a grin,
Then take off your coat and go to it;
Just start in to sing as you tackle the thing
That "cannot be done" and you'll do it.

WATCH YOUR SNEEZE.

There is trouble enough in the world without sneezing more trouble into it. Every time you sneeze while you have the grip or a cold, several million cold or grip microbes are sent flying out into the air which other people must breathe. So the New York health authorities are circulating a card bearing this easily remembered couplet:

"Cover up your cough and sneeze;
If you don't, you'll spread disease."

If it is easy to remember that couplet; it ought to be still easier to remember to "cover up" the coughs and sneezes. The old idea was to teach this little act of decent thoughtfulness as a simple matter of good breeding. But now the health experts want everybody to know that it is more than that. It means preventing the spread of discomfort, disease, possible death. For grip and colds in America are almost, if not quite, our deadliest plague.

This is why school children, passengers on elevated trains and others have been receiving wholesale this little bit of practical poetry. Don't forget it. When that mischievous titillation begins back of your nose, reach for your handkerchief. And instead of scattering microbes scatter this advice both by word and example:

"Cover up your cough and sneeze;
If you don't, you'll spread disease."

In the prevalent epidemic of influenza, there is hardly a community that is free from its attacks. Fortunately its assaults can be guarded against and its virulence modified. In these changeful spring days, with a jumping temperature and alternate wet and dry weather, sufficiently warm clothing is a first necessity. Doctors suggest care in keeping the feet dry, the avoidance of overheated rooms, a moderate diet, and absolute abstinence from alcoholic drinks. Perhaps one of the best safeguards against grip is not to worry about it. A case of "nerves" is more likely to invite it than not, all other things being equal. Keep your head cool, your feet warm and dry, and go about your business as cheerfully as you can, and the danger will be reduced to a minimum.—Christian Herald.



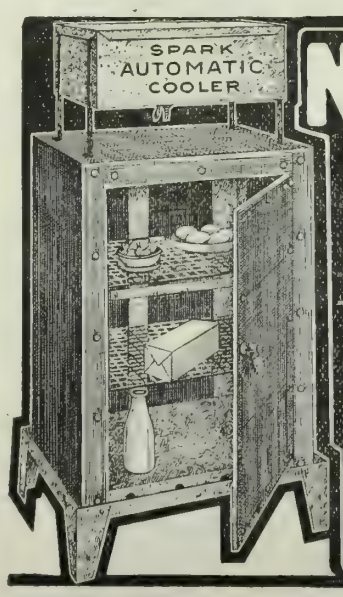
the undisputed LEADER

A publication of large general circulation in California recently asked its subscribers, among other questions: "What brand of cocoa or chocolate do you use?" In the answers received ten brands were mentioned, Ghirardelli's being named in more than 60% of the total. The reason must be Ghirardelli's undisputed superiority. Order

GHIRARDELLI'S GROUND CHOCOLATE

In ½-lb., 1-lb. and 3-lb. hermetically sealed cans. There's a double economy in buying the 3-lb. can.

D. GHIRARDELLI CO.
San Francisco Since 1852



NO ICE REQUIRED EXPENSE TO OPERATE

Hygienic and sanitary, made of galvanized iron

Maintains a low and steady temperature in the warmest climate

Keeps food cool clean and wholesome

Manufactured by
HAMMER-BRAY CO
OAKLAND CALIFORNIA

THEODORE PAYNE ESTABLISHED 1903 LOS ANGELES CAL.

Eucalyptus Seeds

in large or small quantities. 40 species to select from. Write for free pamphlet, "EUCALYPTUS CULTURE." It tells you how to sow the seed, raise the plants and plant out in the field. Also describes all the leading kinds, gives their uses, etc. Trial packets, 15c each, 4 for 50c. Write for prices in quantity.

THEODORE PAYNE,
345 So. Main Street, Los Angeles.

California Garden Flowers, $1.50 Postpaid Pacific Rural Press

FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS.

San Francisco, May 3, 1916.

WHEAT.

According to reports from the north, wheat crops both there and in the Middle West are rather backward, with the outlook for a very moderate yield. This is causing a somewhat stronger feeling all along the Coast, and club wheat has been marked up a little here. There is no buying of any consequence at the advance, however.

Cal. Club, ctl	$1.60 @1.65
Northern Bluestem	1.87½ @1.90
Northern Red	1.85 @1.95

BARLEY.

Local barley prices unchanged, trading is very dull, with buyers apparently waiting for new crop. Export business is greatly hampered, and shippers are taking little interest; demand for feed is keeping pace with current needs.

Shipping, ctl	$1.37½ @1.40
Choice Feed, ctl.	1.32½ @1.35

OATS.

There is no seed moving, new red feed will be coming in in about a month. Demand is closely limited. values remain steady at the former level.

Red Feed	$1.35@1.37½
White	1.45@1.50

CORN.

All grades are quoted at the former prices.

Eastern Yellow, ctl	$1.80@1.85
Milo Maize	1.40@1.45
Kaffir	1.60@1.65
Egyptian	1.50@1.57½

BEANS.

The close cleanup and high price of white beans has diverted attention to Pinks, which are beginning to move in good shape, and have advanced rather sharply in price. Otherwise there is no change in the figures, but local dealers report much more firmness throughout the entire list, as the consuming markets are again beginning to show an interest. It is accordingly expected that there will soon be a general stiffening up of prices.

(On wharf, San Francisco.)

Bayos, per ctl.	$4.50@4.60
Blackeyes	2.90@3.00
Cranberry Beans	4.55@4.65
Horse Beans	3.00@3.25
Small Whites (south)	6.15@6.25
Large Whites	5.90@6.00
Pinks	4.50@4.70
Limas (south	4.35@4.45
Red Kidney	6.50@6.75
Mexican Reds	4.50@4.65
Tepary Beans	4.00

SEEDS.

Melilotus Alba, lb.	23 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	5 c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Alfalfa, per lb.	22 @24 c
Sudan Grass	35 @40 c

HAY.

The first cutting of new crop alfalfa is now arriving quite freely, bringing price down to new-crop level. The value is still very fair, however, as the hay is of good quality and moves freely, much going up and down the coast. Some new wild oat hay has appeared, but not enough to establish new values; quality so far has not been attractive. Offerings of old hay have increased, dealers are endeavoring to clean up before the new crop comes in; while considerable hay has been shipped north, local values show weakness. Dealers look for large offerings from new crop shortly, and it is expected it will be marketed as early as possible. Production in some sections will be short, while in others crop is normal; some grain fields are expected to be cut for hay.

No. 1 Wheat	$13.00@16.50
No. 2	12.00@14.50
Tame Oats	12.00@18.00
Wild Oats	12.00@14.00
Alfalfa, new crop	8.00@12.00
Stock Hay	6.50@ 8.50
Straw, per bale	.25@ .40

CURRENT SIGNIFICANT ITEMS.

The British partial embargo on California dried, canned, and preserved fruits is effective May 30 instead of May 13 as previously announced.

Seventy-five per cent of the freestone peach acreage and $600,000 capital were signed up in time for organization of the California Peach Growers May 1. J. F. Niswander of Fresno is manager.

Over 15,000,000 bushels of wheat, ¼ of the Northwest crop, are held back from shipment to Europe for lack of ships and cars.

Two horse buyers for the French government are in San Francisco for several weeks to buy stock for the armies.

Pulp-fed steers have been selling at $9 in Portland.

FEEDSTUFFS.

Local dealers report a marked curtailment of demand of late, the present movement being very light.

(Wholesale prices, per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$22.50@23.50
Alfalfa Meal, per ton.	20.00@21.00
Alfalfa Molasses Meal per ton	21.00@22.00
Bran, per ton	24.50@25.50
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00@25.00
Cracked Corn	40.50@41.50
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Tankage	45.00
Rolled Oats	29.50@31.00

VEGETABLES.

The movement of California garden truck to the East has been unusually heavy this season, keeping prices in several lines at high level during late spring. This was first noted in asparagus, the shipping demand being especially heavy. There is still a fair movement, prices are fairly high, though the large amount of mediocre stock offered caused some decline. Peas moved out for some time at the rate of two or three carloads a day; the large offerings from the east side of the Bay have kept pretty well cleaned up. The movement is now about over, and the peas are of poorer quality, owing to hot weather; prices have dropped sharply. Local offerings of string beans are beginning to show up in better shape. Sacramento cabbage is scarce and high, while lettuce from local gardens is holding down the price of that article. Rhubarb is weak, and tomatoes have dropped sharply.

Cabbage, ctl.	$1.75@2.00
String Beans, lb.	7 @ 8c
Summer Squash, box	.75 @1.00
Peppers, bell, lb	.25 @30c
Rhubarb, box, Bay	.40 @85c
Asparagus, box	1.00@1.75
Artichokes, doz.	.40 @50c
Lettuce, small, crate	75c
Eggplant, lb.	.15 @20c
Peas, sack	1.00@1.50
Tomatoes, lugs	1.50@2.00

POTATOES AND ONIONS.

Potatoes remain about as last quoted, the new Delta stock being of poor quality, though better stock is expected later. Storage onions are well cleaned up.

New Potatoes, ctl.	2.00@2.50
Oregon Burbanks	1.50@1.85
Delta Burbanks	Nominal
Onions, storage, ctl.	.50@2.00
Onions, Oregon	1.75@2.00
Australian	2.75@3.00
Bermuda seed	1.25@1.50
Garlic, per lb.	9 c

POULTRY.

Very few turkeys now apeparing. Arrivals of local broilers and fryers have been heavier in the last few days, causing sharp break in prices, hens also are easier. Other lines steady at the old figures.

Broilers, 15 lbs. to doz. and less, lb.	25c
do, over 15 lbs. to doz.	28@30c
Fryers	30c
Hens, extra, per lb.	20c
Small	19@20c
Smooth Young Roosters, per lb.	28@33c
Squabs, per doz.	2.00@4.00
Geese, per pair	2.25@3.00
Ducks, young, lb.	19c
Old	16@17 c
Belgian Hares	11@12½c

BUTTER.

A few scattered carloads are still being shipped to Eastern markets, which are taking an unusual amount this season; prices there are weakening under larger local receipts, and this market shows a slight decline, with supplies coming in freely.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	24½	24½	24	24	—	24
Prime Firsts	24	24	23½	23½	—	23½
Firsts	24	24	23	23	—	23

EGGS.

Extras have stood unchanged for over a week at 21c, which is about normal for this time of year. Offerings are large, the diversion of a large amount of stock into cold storage is helping to keep prices steady. Pullets are a little firmer, the low price of this grade brought a heavy demand.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	21	21	21	21	—	21
Sel. Pullets	18½	18½	18½	19	—	19

CHEESE.

Y. A.'s, fancy	17½c
Fancy Calif. Flats, per lb.	12½c
Monterey Cheese	15@16½c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	26	26	25	25	24	24
Eggs	23	23	23	23	21½	21½

DECIDUOUS FRUITS.

Strawberries are arriving in large quantities from many districts, prices fairly easy. Blackberries and raspberries are sparingly offered at firm prices; gooseberries are firmly held. Loquats in ample supply at lower prices. Several varieties of cherries are in the market, but arrivals are light, prices for good stock are well maintained, though off lots easier. A few apricots have appeared, not enough to quote.

Gooseberries, lb.	8@10 c
Blackberries, crate	$1.00@1.50
Raspberries, basket	15c
Strawberries, chest	4.50@5.50
fancy, chest	5.00@7.00
Apples	.75@1.00
Loquats, crate	1.00@1.15
Cherries, Purple Guigne 10-lb. box	.75@1.20
Per lb., black	8@10c
white	4@ 7c

DRIED FRUITS.

The Associated Raisin Company has sent out a new price list, announcing prices in several lines for the 1916 crop, all the changes being strongly upward. The lines covered are layers, clusters, and bleached Thompsons. The general dried fruit market shows a little more firmness, although few changes of prices have occurred since last week. Present figures for apricots apply to either spot or future stock, the former being quite scarce, the new crop is in good demand. Peaches are responding to better domestic consuming demand; new-crop goods are a little higher, while supplies of old stock are getting down to narrow limits. Prunes show no change, but there is said to be a fair tonnage of old stock available for consuming needs until new crop comes in; though there will be little surplus, the apparent shortage of the coming crop is causing very firm feeling. Figs are entirely cleaned up on spot, future offerings are firm. Apples receive little attention; there is considerable stock left. The New York Journal of Commerce says:

"Further purchases of 1916 early shipment contracts have been made here and in Chicago for the account of short or speculative interests in California. One New York holder of such contracts was given the chance to turn over five cars of 40s to 90s on a 5¼c f. o. b. Coast bulk basis, the report goes, but he was willing to release only three cars. Another local contract holder is said to have disposed of two cars 40s to 60s to a Coast interest on the same basis.

"Holding it to be a certainty that the new crop will be light and that the small sizes will be extremely scarce as a consequence, Coast operators are unwilling to accept bids of anything less than 4¼c Coast for 100s to 120s. There seems to be more buying interest in the small fruit than in any of the sizes above 100s."

Apples	5 @5¼c
Apricots, per lb.	8 @10 c
Figs, white, 1916	6¾c
Black, 1916	5 c
Calimyrna, 1916	9 @10 c
Prunes, 4-size basis, 1915	4½c
1916	5 @5¼c
Peaches, 1915	4 @4½c
1916	4¾ @5¼c
Pears	5½ @7½c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6¾c
London Layers, 3-crown, 20-lb. box, 1916	$1.30
Imperial Clusters, 6-crown, 20-lb. box, 1916	2.75
Bulk, layers, 50-lb. box, 1916	2.75

CITRUS FRUITS.

The Eastern citrus auctions are taking lots of oranges from California these days at fairly good prices, and it now looks as though the navel season would be one of the best for several years. At New York on Monday, May 1, the auction averaged for navels from $1.70 to $3.40 per box; for bloods $2 to $2.25; for seedlings $2.20 to $2.55; valencias $2.65 to $3.15; St. Michaels $2.30; lemons $2.10 to $2.90. Shipments are going from California at the rate of about 200 cars daily. Some valencias are being shipped from Tulare and Orange counties. Florida oranges have been nearly all marketed.

Special Livestock Market Report.

Hogs have held steadily, but never before have so many been condemned for tuberculosis. Week before last, 6 per cent of the hogs killed by one firm were condemned. These were mostly dairy hogs fed unpasteurized milk. The meat shows lack of hardening feed.

Cattle and beef have weakened on account of a big run of grass stock; and they seem likely to weaken further. Grass fed steers are being shipped to Portland. One firm which has been shipping about 300 frozen beeves per month to Honolulu will lose that market July 1 because the Hawaiians are raising their own beef.

Sheep and lambs have scarcely changed, but the supply may let up soon.

WOOL.

London sales opened May 2 with values firm. Prospects for higher prices during this series of sales, which ends May 20. Australian and other foreign markets and American primary markets decidedly firm for good quality. Choice California fleece wools all sold at firm prices. Burry, seedy, defective wools moving slowly at concessions to buyers.

While larger offerings in the San Francisco market of deciduous goods re taking attention from citrus ruits, everything under this head as been in active demand locally or the last week, and all prices are teadily held.

ranges, Navels	$1.50@2.75
angerines	1.25@1.75
rapefruit	1.50@2.50
emons, box	1.75@3.50
emonettes, box	1.25@1.75

HONEY.

Vater White, comb	13@15 c
mber	8@12 c
Vater White, extracted	7@ 8 c
ight Amber	3@ 4 c
ark	2@ 2½c

HORSES.

Approximate values in San Francisco, based on auction sales.)

rafters, 1700 lbs and up	$ 250
rafters, 1550 to 1650	150@200
hunks, 1350 to 1500 lbs.	150@175
Vagon horses, 1050 to 1350 lbs.	110@150
reen Mountain range horses, 950 to 1200 lbs.	20@ 75
arm Workers	50@100

HIDES.

ry, 15 lbs. and over	31 @32 c
Kip, 10 to 15 lbs.	32 @33 c
Veal, 7 to 10 lbs.	34 @35 c
Calf, under 7 lbs.	35 @36 c
Vet Salted, Steers	17½ @18½c
Cows	17½ @18½c
Kip	19½ @20½c
alf and Veal	23 @24 c
ulls and Stags	13½ @14½c
orses, dry, large	$2.25@3.00
heep, long wool	1.25@1.40
Medium	1.00@1.25
Shearings	.35@ .40

LIVE STOCK.

(Prices paid for stock, live weight, ff cars, without feed or water, at tock Yards, South S. F.)

teers, No. 1	7¼ @7¾c
No. 2	7 @7¼c
ows and Heifers, No. 1	6 @6½c
No. 2	5½ @5¾c
ulls and stags	4 @5 c
alves, light	8 @8½c
Medium	7 @7½c
Heavy	6½ @7 c
ogs, grain-fed:	
100 to 160 lbs.	8¼c
160 to 175 lbs.	8½c
175 to 250 lbs.	8¾c
250 to 325 lbs.	8½c
rime Wethers	7½ @7¾c
pring Lambs, f. o. b. country points	$5.00@5.25

DRESSED MEATS.

teers	11½ @12 c
eals, large	12 @12½c
Small	12½ @13½c
rime Wethers	13½ @13¾c
pring Lambs	16 @17 c
ogs	11 @12 c

WOOL.

(Prices paid in the country.)

ed Bluff, year's	25@27 c
acramento Valley, y's	19@35 c
endocino, year's	28@31 c
endocino, 7 months	25@26 c
outhern, year's	18@21 c
outhern, 7 months	15@18 c
mperial Valley, year's	17@19 c
mperial Valley, 7 mos	14@15 c
evada	21@23 c

CALIFORNIA AND EASTERN CROP CONDITIONS.

By J. L. Nagle.

Sacramento, May 2, 1916.

Herewith for the benefit of your ubscribers a resume of the Cali-ornia fruit crop at this writing: Early varieties of cherries light; Oregons fair crop. All varieties of apricots light—not in excess of 60 per cent of a crop. Bartlett pears in most sections less than normal. On the Sacramento river about 20 per cent scabby, other districts fairly clean but light. The plum crop in general is below normal. This applies especially to Diamonds, Grand Dukes and Japanese varieties. Peaches in most sections normal, with the exception of the lower San Joaquin Valley, where all varieties are not over 50 per cent of a crop. Malagas Fresno district about 80 per cent. Tokays in the San Joaquin Valley, American River and Florin districts, Winters and Vacaville well set; indications for a normal crop.

Advices from the East indicate that the peach crop in Missouri and Texas has been affected about 25 per cent. This is also true of the Ozark district and Arkansas will not ship over 50 per cent of a crop this season. Northern Georgia has been damaged by frost, which will affect the shipment of early peaches, Georgia Belles and Carmens, but the Elberta crop of Southern and Central will be normal. There are no reports available at this writing on New York State, Michigan or Connecticut.

Every indication points to a satisfactory season, as the California crop, as you will note, is hardly normal, and furthermore the season is in advance of last year by two weeks. Business is more stable and all markets very active, as the satisfactory sale of oranges and early cherries indicates.

Publisher's Department

Last week we added 187 new subscribers to our list and we expect to do better from now on. Several hundred subscribers were taken from the list during the past week because they were a year or more in arrears. We disliked to remove these names, but the postal regulations do not permit us to extend credit for over one year. However, after dropping these unpaid names our list is now larger than it was two months ago; in fact, at no time in the history of the Rural Press has it been as large and in as good shape as now. Our growing advertising patronage assures us that this journal is bringing good results to our advertisers. In all departments the paper is in fine condition and if the growth continues we shall have to add more press facilities to properly handle the business. The publisher expects to go east soon to look into the matter of better equipment that the paper may grow until it properly represents the agricultural interests of California and the Coast.

MONEY FOR FARMERS.

Another step forward for the farmer is the announcement made in another column wherein a large city bank is offering farm loans without the usual commission of one or two per cent. The custom of charging a commission for securing a loan has been made by the broker, who usually did nothing for the borrower but fill out the application blank. When large banking houses offer farm loans at a straight interest rate there is no "catch" in the deal. The agricultural interests seem to be coming into their own when the producer with good security can secure the same treatment as the city business man.

So many advertisements in this issue that we were compelled to leave out the usual book ads, but we have these standard agricultural books for sale just the same.

BEEKEEPERS' SUPPLIES

Everything for the Honey-Bee.

Catalogue sent free on request.

THE A. I. ROOT CO.,

245 Mission Street,

San Francisco, Calif.

Save Money

ON YOUR HOME FURNISHINGS

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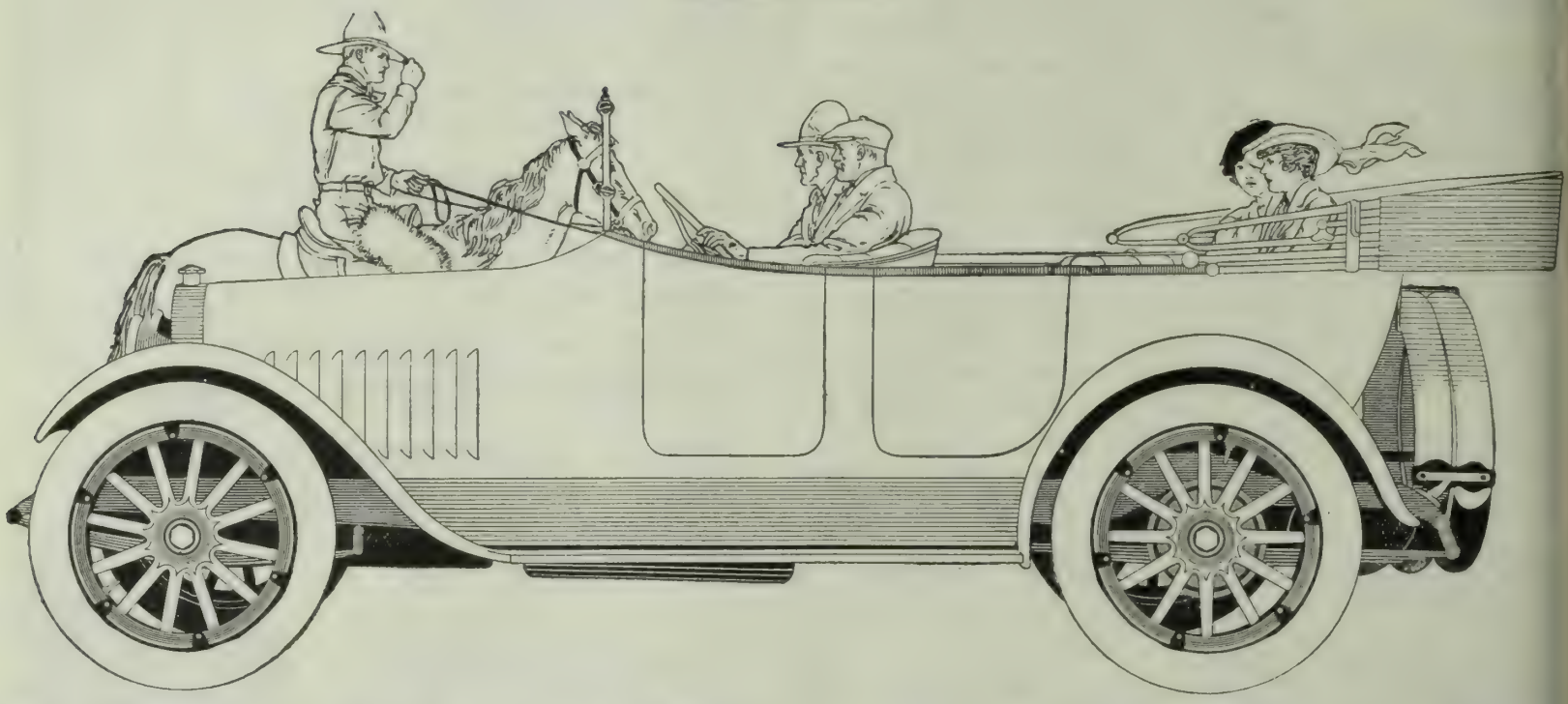
We wish to announce that through our Country Loan Department, which has just been enlarged, we would be glad to correspond with farmers desiring loans.

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Here is conservation of energy at its best; ahead of the 3400 r. p. m. stretch years of obedient work; and all intelligent judges of machinery know that a car thus built and thus conducting itself cannot wear itself out in a few years of hard usage.

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Five-Passenger Touring Car, $1090 Detroit;

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Color of Touring Car and Roadster—Oriford maroon or Meteor blue. Cabriolet—Oriford maroon, Valentine green, or Meteor blue. Wheels—standard dark, primrose yellow or red. Wire wheels optional on Roadster or Cabriolet at extra cost.

Chalmers Motor Company, Detroit

L. H. ROSE---Chalmers Company, 1201 Van Ness Ave., San Francisco, Cal.

EAT CALIFORNIA RIPE OLIVES MAY 16TH---"CALIFORNIA RIPE OLIVE DAY"

Vol. XCI—No. 20 Fifty-sixth Year

THE PACIFIC RURAL PRESS

AN FRANCISCO MAY 13, 1916. LOS ANGELES

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Handling Grain in Sacks is Wasteful.

Elevators on country highways and railroads to handle bulk grain cost less than sacks. Bulk handling from harvester to mill saves big money. The Pacific states are the only ones in the world that use sacks principally.

[Written for Pacific Rural Press.]

BULK handling of grain is an economic necessity. It is too late this season to introduce the change. Grain growers will have to be shown how much it is to their advantage, before time to buy sacks for the 1917 harvest. The expense to producers, of grain-tight wagons and elevators, and the danger in shipping bulk grain by sea are the principal obstacles to overcome.



Holt combined harvester, handling grain in bulk.

These are the fundamental conclusions of the state-wide committee named by the Sacramento Valley Development Ass'n., as brought out at their meeting in Stockton May 6. The committee organized with J. W. Jennings of Tehachapi as president and Manager W. A. Beard of the Development Ass'n as secretary. Mr. Jennings is probably the first grain farmer in California to put up an elevator. He paid for it out of the saving on his first season's crop last year and had some spending money left. The committee will be further enlarged with men who will make a systematic educational campaign each in his own community.

Elevators Cost Less than Sacks.—W. T. Colley of Chowchilla is building a 70,000 bushel elevator; Chas. and Lewis Moreing, with 22,000 acres of grain on the Natomas Consolidated, are planning an elevator for their own seed and feed and perhaps for their shipping grain.

Sacks for the 35,000-sack grain crop of E. T. Cunningham and the Hayes Co. of Merced county would cost now 14½ cents each or $5075. Instead of buying sacks they will have by June 10 a cleaner and elevator at Athlone at a cost of less than $3,000 to handle their grain in bulk. They are saving $2,000 which would have to be paid clean out of pocket if they were sacking the grain as heretofore. They are saving what Mr. Cunningham estimates at $6 a day for two months, or $360, on the cost of gig and sack-sewers for each of the partners. As Mr. Cunningham lives 12 miles from Athlone, he will put his $360 into a field bin of redwood and 2x4's on the bank of a dry creek, about 12 feet deep. A spout will run the grain by gravity onto motor trucks in the creek, whence it will be hauled to the elevator in bulk. The man who will truck the grain offered to collect grain from harvester, store it in the bin, and haul it to the elevator at $1.50 per ton, which is the same cost as last year for hauling in sacks. The Hayes Co. are within three miles of the elevator and will haul direct from the combined harvester to the elevator with three wagons. Their crop is estimated at 10,000 centals. The combined crop of the partners if sacked and warehoused would cost for warehousing through the harvester season, 50 cents per ton for the first month and 25 cents for each of the next two months, or $1750 cash out of pocket for storage. This would more than half pay for the 40,000 to 50,000 bushel elevator they are putting up.

Reasons for Bulk Grain.—The Globe Milling Co. and the Sperry Flour Co. are already handling grain in bulk. Geo. R. McLeod of the latter company submitted the following reasons for the practice: (1) "excessive cost of trucking, piling, re-sacking and handling grain in sacks (they draw it from barges and wagons into the mill directly by suction); (2) leakage of grain en route from spout of harvester to mill when handled in sacks; (3) rapid deterioration of value of sacks the grain is packed in, which are subject to sunburn, cutting by mice, trucks, piling machines, etc. Cost of re-sacking sometimes runs up to 40 cents per ton.

"Actual shipments of sacked grain weighed by the the Sperry Flour Co. at both point of shipment and destination show loss by leakage of 10 pounds per ton on shipments of over 500 tons. Similar shipments in bulk lost one pound per ton.

"Ordinary California grain contains 1½ to 3 per cent screenings. Off grades run 5 to 7½ per cent; some lots run 10 to 15 per cent. The buyer when purchasing, discounts for this and the farmer pays the freight on dirt and screenings for which he receives nothing and which are of no value to the mill. If the elevator and cleaner system were used, the screenings could be used at home, the grade of grain and prices obtained would be improved."



Sacked grain on the San Joaquin river. It would be easier, faster, cheaper, and less wasteful to load by gravity from an elevator and unload by suction. (Courtesy Stockton Chamber of Commerce.)

It was brought out in the discussion that the railroads are ready to handle bulk grain; most of the mills are ready or can easily be made ready; the farmers are not ready but could get that way

(Continued on page 590.)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., May 9, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	1.02	38.53	43.32	62	40
Red Bluff	.20	19.93	23.79	88	38
Sacramento	.01	18.19	19.45	84	38
San Francisco	.07	27.12	21.61	66	46
San Jose	0	16.30	16.26	78	34
Fresno	0	11.72	9.22	92	40
Independence	0	10.33	9.06	86	—
San Luis Obispo	.02	26.87	19.89	74	48
Los Angeles	0	19.89	15.34	74	52
San Diego	0	12.54	9.74	70	54

THE WEEK

AS WE go to press the sun of appreciative publicity is shining full-orbed in the Sacramento, celebrating the consummation of the long-hoped-for permanent highway connecting the State capital directly westward, across rivers and low lands, with the prosperous towns and rapidly developing country of the west side of the valley—thus opening to free highway inter-communication, large areas of the State, extending from coast to mountain-top, which hitherto have only been able to reach each other by long detour. The achievement is important and it is being fittingly celebrated.

Another celebration to which the foregoing is, in a way, an indicator, is the event, centering at Willows and extending from Hamilton on the north to Maxwell on the south, which is the public announcement that the west side of the Sacramento valley has at last found itself irrigationally in a great popular movement to dispose of intervening interests, and attach the water directly to the land. This is to be brought about by the enterprise of the Central Water-Users' Association, composed of representative citizens in the territory tributary to the Sacramento Valley Irrigation Company's canals, who are attempting to form several irrigation districts and bring about a co-operative proposition for the handling of all of the irrigation in that territory. The celebration consists of a popular auto-pilgrimage, over a circuit of about a hundred miles, around a center of feasting and oratory. There have been celebrations in the west side of the valley before, over expectations never fully realized, but this promises to be greatest and most influential of all because it opens a way by which the people can gain possession of their own.

THE CALIFORNIA RIPE OLIVE.

OF ALL the products in which California can claim originality in substance or in method, none is so unique and characteristic as the California ripe olive as it is now entering the world's trade. Olives in a ripe condition have figured from time immemorial, as a local food supply in Mediterranean countries; dried ripe olives have long traversed considerable distances in trade; pickled green olives have for decades encircled the globe, but a pickled ripe olive, safe for export over long distance and time, has been but recently attained and California has achieved this new commercial thing. We have had ripe olives for ourselves for half a century perhaps—just as they have had them for millenniums on the Mediterranean border. We taught visitors to enjoy them and to call for them in their distant homes long before we learned how to deliver the goods in durable condition; which was greatly to our loss and to the disappointment of others. However, solution came to the problem in time; heat has destroyed the agencies of decay and hermetical sealing has held their kind aloof from their prey. It is now possible to pour out on the world's tables, in maximum of wholesomeness, nutritiveness and deliciousness, as many ripe olives as the world's wealth can pay for. Of course, we shall not have a monopoly of this uniquely desirable production, for the Mediterranean countries will borrow our processes for export, as they have for other fruit products; but if American labor and investments are properly protected, we shall have the joy and reward of distributing throughout this country a food better than classic poet ever praised or epicure of classic time ever worshipped, because we have made it practically imperishable. The California ripe olive is now ready for popularization and enterprising producers are working for it. All the California people should participate in the undertaking. Aloft on our first page this week is emblazoned the appeal to Californians to begin on May 16 to fill themselves with ripe olives and to send to their friends, throughout this land and beyond, good generous samples of a unique product which California delights to honor.

RURAL CREDIT COMING FAST.

THE great agricultural event of the week is the rapid approach of rural credit. Using a modern metaphor, we should say that it is coming on a political motor-truck, set at top-speed; some years ago we would have said that it was coming on the wings of political wind. But metaphors do not matter, one is as good as the other. The chief thing is that rural credit will soon arrive. Those who do not care to see it keep saying: "It is all politics"—but that does not distress us. Everything that arrives in this country has to come through politics, and if you plan to achieve a reform in this country "out of politics," you had better forget it before you waste time on it.

The reason why we say that rural credit is coming fast is because the U. S. Senate last week passed a rural credit law containing practically the provisions which we outlined on page 362 of the Pacific Rural Press of March 18 last. It provides for organizations for rural credit under government supervision; for the creation of a federal loan board, as a bureau of the U. S. Treasury, which shall issue bonds upon the mortgages granted by the loan associations and for the deposit of government funds to help finance these mortgages, in connection with receipts from sale of the bonds. We shall not have, in time for this issue, the details of interest rates and of margins for covering operating expenses. The talk is of interest at not above 6 per cent, and margin of not more than 1 per cent between what the borrower pays and the lender receives. There has been much debate over such details; there will be more debate in the House and there will probably be need of settlement by joint-committee of the two legislative bodies so that the enactment may go forward for the president's signature before the national presidential conventions assemble. We can count on some speed because this is one of the things at which the administration party expects to point with pride. We do not care whether the automobile truck which brings this thing through is a donkey or an elephant, so long as it is safely landed—but there are others who do care a lot, and the ruling party will no doubt quite fully remind the country that in the Senate the only delay in the schedule of the rural credit law was because the elephant tried to pull back the donkey by the tail. The fact is that the only negative votes in the Senate were five, and they were Republican. But the discerning public will see that these votes were not chargeable to Republicanism, but to geographical finance, for the five votes all came from States cornering into Wall Street. In fact the majorities of both parties are working for rural credit legislation, and each trying to beat the other to it. It will not be a matter of counting most affirmative but fewest negative votes and the Democratic score now stands zero to five.

WHAT COMING PROVISIONS MAY DO.

THE measure which is making the political animals step so lively now is long-term or land-mortgage credit, with low interest and small amortizing payments. It still leaves short-time personal credit unprovided for. There is much complaint among farmers' representatives at Washington on this score, but all they can get, so far, from the national political financiers is the consolation that re-discounts can be secured, by proper organization, through the reserve banks. That kind of legislation may come later, but it will take a lot of fighting, and it will not have the self-starter, which is only rigged to act before election. Its speed after that will depend upon what the rural credit advocates are able to get into the national platforms this summer.

Those who are looking at this question of mortgage credits through the wide eyes of publicists, and not through the holes in their own pockets, will take chief interest in this apparently assured enactment and contribution by the national government, as much simplifying the problem of land settlement and advances to settlers to which California is being progressively committed. It may render it possible to advance the proposition of settling good men and women on good land, at a living cost, with only the expert efficiency and moral credit of the State, by using the national machinery to achieve the financial requirements. This will make public work for State development easier and remove the objections of those who opposed it on the claim that it was using public money for class advancement. But even

as originally proposed, with State credit, it was not class legislation, in the real meaning of the term. At its worst, the proposition was but half-class legislation, for the only rational objection to it, if there was any, was in the interest of the self-financed farmer against the assisted farmer. And there becomes mighty little of that when one remembers that it has always been the practice of fore-handed farmers to lend money to their neighbors needing more capital. The promotion of self-interest, by efforts to limit the number of producers, has never been fortunate, for a good man's share of general prosperity is probably always greater than the amount to be gained by exactions forcing adversity upon other people. Rural credit provisions are for the purpose of advancing general prosperity among the producers of the world's food, and that is a service to mankind. It is not a scheme for the sole benefit of any class.

WOMEN AS FARM LABORERS.

WE MUST acknowledge that we have never accomplished much by telling women what they ought to do. We have once in a while gained a point by persuasion, but we have a conviction that commands or references to their duty, as we see it, have never moved them much. Therefore, when we recently saw notice of a new book entitled "Women and the Land" and understood that its purpose was "to awaken women from their lethargy," and go "actually at work on the farm, in the dairy, and in the fields," we had to smile at the folly of the author of such a book. But, going farther along, we found that the author was a titled lady and that only made us more doubtful how the proletariat of untitled ladies for whom the exhortation was evidently intended, would take it. The argument seems to be condensed in these sentences:

For years French and Belgian women have lived so that they were able, at the first call of war, to take over the plow, the spade, and the barrow. They have milked the cows and seen to the pigs; and, what is more, they have thoroughly understood how best to market their home-grown produce. Why should not English women do the like? Why should not English women find in work on the land the best, the patriotic field for the exercise of their indubitable energy and skill?

We do not intend to dispute this woman's argument, for we do not know from observation how great the need may be, and yet we fear that she knows as little, from observation and experience, of the kind of work, which she so confidently prescribes for the lowly ones of her sex, as we do of the crying need for it. We would not interfere or endeavor to dissuade women from heavy farm work, if they feel called to it, any more than we would lay it upon them as a duty. But we have an ingrained hatred of the enlistment of women as common farm laborers. What we have seen of it on the continent of Europe does not lead us to desire it for England nor for any other civilized country. It has come about in Europe through two social conditions—both of them bad. One is the family tyranny of man, which is a hateful relic of barbarism. The other is the fancied need of governments for men soldiers, which has brought the world into its present distress—worse than any barbarism ever engendered. Must we humbly bow before these two bad social conditions, and try to base the civilization of the future upon men-tyrants and men-killers and women-slaves, growing of the men for killing and the women for breeding and working? This is the social order with some kinds of bugs; is this the ideal of civilization for mankind?

But we do not desire to pursue this matter at any length. Each one can con it over in his own mind and see whether he, as a man, thinks remanding women to common farm labor will make either for his nobility or his comfort, or for the quality of his offspring, upon which the future of mankind depends. As for women prescribing common farm labor for their own sex, we have really no right to speak—except to cite the fact that, in certain instances, at least, women's cruelty to women has been held to be incomparable. Beyond that, a titled lady's prescription of farm labor for the lowly of her own sex, taking them out of the cottages, which are their castles, to be besmirched with muck of byre and fen, is effrontery.

BUT WOMEN WANT FARM WORK.

WE ARE not discussing tastes or wishes, but only the dispositions of people to prescribe duties and obligations for others. If a woman wants a farm for the employment of her time and capital, or if she wishes to do farm work for others for her livelihood or for the joy she finds in it, both of these things come within her rights and privileges as a human being, and to curtail them is as wrong as to try to enforce them upon her as duties or obligations. We only ask for a woman the same rights of choice that a man has, but she should understand that she will have to do the same work as a man, and in the same way that a successful man does, if she expects to succeed. We are interested in a statement credited to Mrs. Pauline Barfield, superintendent of the woman's and girls' department of the government employment bureau in San Francisco, viz.: "With the coming of summer scores of gray-haired women, who have to toil the year round in city occupations, long to get into the open. We have recently been able to place many of them on ranches and at fruit-picking work, and despite their years they are happy to get outdoors."

We are glad that these dear old girls are getting more joy into their lives and doubtless they are often very welcome assistants to farm wives in their various tasks and are capable in fruit-cutting, etc., but that they can be farm-help in any considerable way is impossible. And yet, probably, on the basis of Mrs. Barfield's statement, we shall soon have some tender-hearted uplifter writing a book for the purpose of driving the forlorn out of city tenements into the country and calling upon the farmers to do their duty in making homes for such willing workers! We hope Mrs. Barfield may continue to do much good to individual employers and employes by joy-riding her proteges into the country, but she should remember that the service she can do to farming in that way is strictly limited, both in numbers and in opportunities for efficiency. We are happy, however, to recognize the farming ability of women who get next to their problems, as one woman shows on another page that she has done, in learning how to conserve the energy of young apple trees to the best uses of man.

Queries and Replies.

Is There Peat in California?

To the Editor: I desire to know if there are in the State of California any large bodies of peat and, if so, is any movement afoot to develop them? Where are these beds located? Are they owned by the State or privately? —J. H. J., San Luis Obispo.

It was held for some time that there is no true peat in California, though there was plenty of stuff on its way toward peat. We understand now that experts maintain the fact of occurrence of true, typical peat and they locate it under the tule islands of the deltas of the San Joaquin and Sacramento rivers, to which Stockton is the nearest large town. So far as we know, the amount of it and the availability of whatever there is, have never been determined. We believe that these tule islands are largely, if not completely, in private ownership—but of that the facts can be determined by inquiry of the State Surveyor General at Sacramento. We are not aware that the occurrence of peat elsewhere in the State has been determined.

Grasses for Golf and Grazing.

To the Editor: Can you recommend a book treating of all or most kinds of grasses? I want to procure a collection of seeds for experimental purposes to find out which is best for golf greens and fairways under varying conditions of soil and climate.—T. S., Brentwood.

Books on grasses written for humid climates will not help you to get a perennial sod on dry uplands in California because the turf grasses which they recommend will not live through the summer here except on naturally moist or irrigated land. The grasses which will maintain summer verdure with least irrigation and will make winter verdure with rainfall are English and Italian rye grasses; and they will afford pasture and be easily eradicated by plowing under if the land is needed for crops. The grass which makes turf without summer irrigation and even with moderate rainfall, is Bermuda grass, but Bermuda has two defects: it will become brown under frost and it is practically impossible to get it out of the land in our mild climate when it is once established. It is, however, good for grazing and to a less extent for hay.

Temporary Yellowing of Plum Leaves.

To the Editor: Our four-year Wickson plum trees come out yellow every spring. Later in the season they become green and seem quite healthy. We find no crown gall. Peach trees and Climax plums in the same soil are doing well.—H. C., Lafayette.

The partial yellowing of the leaves you send is not caused by aggressive disease, for no visible cause thereof can be detected. It is probably caused by some condition which induces temporary unthrift. This may exist in the aerial parts of the tree or in the root and is possibly analogous to sour-sapping in a mild form, which only interferes for a time with normal functions, which are able to re-assert themselves, as conditions improve, and restore thrift. Cause and treatment are conjectural. If it is due to unfavorable temperature attending very early growth, it may be beyond treatment. If it is due to too much cold water in the soil at that time, underdrainage may prevent it.

June Pruning Young Apple Trees.

[Written for Pacific Rural Press.]

To the Editor: Will you give instructions for pinching back Gravenstein apple trees which are now making their fourth year's growth. They now have 4 to 6 main branches and were headed back to the height of one's shoulder.—R. C., Yountville.

[Leave not over two new limbs per branch and these coming from the outer side in order to open the center of the tree. We reprint part of an article written by Miss Vida French of Sebastopol for Pacfic Rural Press May 29, 1915. Miss French is personally acquainted with the individual trees in her large apple orchard.

"In June, each tree in the young orchard should be gone over carefully and all side shoots, not desired as scaffold limbs, should be pinched back leaving a short stub with two or three buds. If these shoots are cut off close to the main limbs, as is commonly practiced, the bearing age of the tree is postponed from three to five years.

"If these shoots are allowed to grow all season and cut to stubs or entirely removed in the dormant period, it is a clear loss. All the strength and energy of the tree in producing them has been wasted; the remaining branches are smaller and weaker than they would have been if the tree had been able to concentrate upon a few limbs, and the stubs, so desirable for developing fruit spurs, will merely force their way into undesired branches again.

"Distributes Load.—In caring for a young tree, the first consideration is to produce a strong framework, capable of carrying heavy loads and yet at the same time distribute the load in advance by placing fruit spurs evenly all along the scaffold limbs. How often we see young trees carrying their crop at the ends of the branches, while the limbs bear nothing at their strongest point! Results from summer pruning should not be expected the first season, though some spurs will be formed. It takes one to three years to develop a fruit spur. The June pruning of the young tree is primarily to direct all energy into permanent framework. A later pruning about midsummer is necessary, if the pinched-back shoots have started a second growth. Thus all that remains for winter pruning is the heading back of the terminal growth."

NEW METHOD OF PEELING PEACHES.

[Written for Pacific Rural Press.]

Peeling peaches by hand is an expensive proposition. However, owing to the extra price received for peeled dried peaches, many growers are planning to handle their whole crop in this manner this year. They will find an easier and far less expensive method of peeling peaches as described by N. Vipoond of Newcastle.

By his method the peaches are left on the trees till perfectly ripe before picking. They are then picked, cut, laid on trays and sulphured in the usual manner. Immediately after removing the trays from the sulphur house the peaches are picked up, one at a time, and laid on another tray.

In picking up each piece, the fruit is slightly compressed in the fingers. This causes the skin to slip off. The trays are then set on the drying ground in the usual manner. On the second or third day, depending on how fast they are drying, they are loosened from the tray with a dull knife. In three more days they are ready to stack. A slight amount of juice is lost in moving the peaches from one tray to another but not enough to lessen the quality.

To insure success with this method the fruit, as mentioned before, must be perfectly ripe, otherwise the skin will not slip off and the trays must be perfectly clean or the peach will absorb the flavors of dirty wood.

Mr. Vipoond estimates that it costs him less than one-fourth cent per pound to peel his dried peaches by this method.

ALMONDS AT BANNING.

[Written for Pacific Rural Press.]

Figures on last year's almond crop are approximately totaled by the secretary of the Banning Almond Growers' Exchange, who gives the following approximate tonnage of the different varieties. It may be that 1915 was an off year on some varieties and the figures may not represent acreage accurately, but acreage figures are unavailable. The local Exchange marketed the last of their nuts in January through the California Almond Growers' Exchange. The secretary estimates that fully 90 per cent of the local growers are members of the co-operative organization and that not over three cars were shipped by outsiders. Of Ne Plus about 60 tons were shipped by the Exchange; of Nonpareil 44½ tons; I X L 36 tons; Drake 25 tons; Texas Prolific, mostly from younger orchards, 9½ tons; California Papershell 2 tons from older orchards but recommended by the State Exchange; Golden State, Jordan, Peerless, Languedoc, and hardshells the balance of 191 tons. Exchange shipments in 1914 were 106 tons; in 1913, 84 tons. The annual increase is due to greater age of trees and to the 15 new members in 1913, 30 new ones in 1914, and 9 in 1915.

Four tons of meats representing about 12 tons in the shell were marketed. These were just the nuts broken in the hullers, of which there are two at Banning.

W. W. Anderson, for eight years a commercial pruner in this vicinity, remarks that I X L's are losing favor here on account of shy bearing and the nuts being most subject to gumming. He estimates that 25 per cent of the I X L's last year were not good nuts.

The Ne Plus, according to Mr. Anderson, are the most consistent regular bearers, being heavy pollenizers and good for block planting. To use them to pollenize other varieties, however, would be risky as they are nearly through blooming here when the others are just opening.

Wheat acreage was increased around Porterville this year and a 325,000 bag crop is estimated in spite of warm dry weather.



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Cost of Walnuts and Limas Interplanted.

[Written for Pacific Rural Press.]

Lima beans interplanted with alnuts on 600 acres of the San Joauin Fruit Ranch in Orange county ay well in both crops and furnish eanstraw to mulch the 400 acres of ranges and lemons about once very three years at the rate of 5 to tons per acre. From 500 acres ast year 150 tons of Placentia Perection walnuts were sold, while the verage yield of Henderson's Bush imas per acre for a number of years as been 1200 pounds. These are old in the East for seed at 6 cents er pound, particular care being aken to keep the seed pure, accordng to Andrew Cock who has charge f the ranch and furnishes the data.

The walnuts, which were planted n 1907, are 60 feet apart. A dozen ows of beans 30 inches apart are lanted in each center.

Costs.—Plowing is usually done ry in the fall, 10 inches deep, with nules. It costs an average of $3.20 er acre. Pruning the trees in winer costs $2.34 per acre, requiring bout 140 days. Burning brush last vinter cost 38 cents per acre, after he stove wood was pruned out at a ost of $39.90 for the 600 acres, or .0665 per acre. Hauling the wood ff cost 20 cents and of course made valuable addition to the crop rofits.

Harrowing both ways costs 50 ents per acre; and each of the four ultivations during a season costs 2 cents. Furrowing for irrigation osts 42 cents each of two times, and rrigation costs $6 each run. Pickng costs 80 cents per hundredweight ($4.80 per acre last season). uring costs 40 cents per hundredweight or $2.40 per acre including sacks, which are used only to haul to he warehouse of the Cal. Walnut Growers' Ass'n. The same sacks do for four or five years. Bleaching at he warehouse costs 1 cent per pound or $6 per acre, and the Association selling expense is taken from the selling price.

The beans have been growing at he same time. It costs about $1.25 per acre to cut and pile them ready for the thresher. Threshing costs 25 cents per cwt. or $3 per acre, the sacks 10 cents each, or $1.20, and hauling to station $1 per ton or 60 cents per acre.

RASPBERRY RUST.

To the Editor: We sprayed our raspberries early in the season with Bordeaux for the rust, which came on the under sides of the leaves. Now the leaves are getting rusty on the upper sides. It starts on the leaves nearest the ground, and works upward.—F. G., Santa Clara.

[Bordeaux as late as possible before growth starts and then sulphur in some harmless form, about two applications at intervals of 10 days, will prevent the attack if thoroughly applied to the under sides of the leaves. Dry sulphur can be thus applied with a blower, or atomic sulphur can be sprayed safely. It is hard to cure this trouble. Affected leaves will probably drop and affected new wood growth will be weakened at least. But the sulphur spraying will check its spread even now. The rust seems more prominent on the upper surface in its early stages, even making eruption, but later it sends out its rustlike fruiting bodies from the under surface. The sulphur in wet spray is more finely divided and thus vaporizes more readily when warm weather comes, and it stays in place till then, unless severe rains wash it off. That on the under surfaces remains even then. It is the vaporization that kills the rust fungus.—Editors.]

YELLOWED VALENCIA TREES.

To the Editor: You may be interested in knowing of the results obtained from an application of lime used on my orange grove. It is on the red soil found along the foothills of Tulare county on the east side. The trees were five years old, and in several places in the grove were so yellow that you could hardly find a green leaf on the trees—many of the trees even shed their leaves. They set no crop and I thought they would have to be taken out. I tried an application of hydrated lime, and in ninety days, or less, there was a marked change. In six months you could not tell them from the other trees. Since that time the trees have done fine and I now have as fine a Valencia crop as you would care to see.

The soil at these places was at times very wet—remaining so for some time—and when we would get it dry it would bake so we could hardly break it up. Now it works as nice as any other part of the grove. **G. W. Trauger.**

Lindsay.

FIGS, RABBITS, HOGS.

To the Editor: I have been greatly troubled with rabbits barking and girdling fig trees on my Merced ranch. Have trees wrapped but the jacks reach up into the crotch and get in their dirty work. Will you outline some plan of poisoning? I have heard that arsenic in bran would do the work. How about it? Also, what is the best authority on hog raising on the Pacific coast?—G. G., Los Angeles.

[Rub your fig trees with any kind of rancid meat grease or fat. Rabbits won't hurt the trees while the odor is there. The best authority on Pacific Coast hog raising is, we believe, the California Hog Book, published by Pacific Rural Press for that reason. In it, hard and fast rules are avoided; but experience of widely scattered successful hogmen are related so that each reader can apply the suggestions to his own conditions.—Editors.]

EARLY IRRIGATION CAUSES GRAPES TO DROP.

To the Editor: Answering your request for our experience with early irrigation of grapes, we did not irrigate early, but we irrigated June 15 last year with good results. My opinion and experience with early irrigation is "not good." It causes the grapes to drop.

Kingsburg. **Nels Hanson.**

The State Water Commission has granted permission for C. A. Stribley, of Dixieland, Imperial county, to appropriate 30 miner's inches from Cariso creek to irrigate 60 acres.

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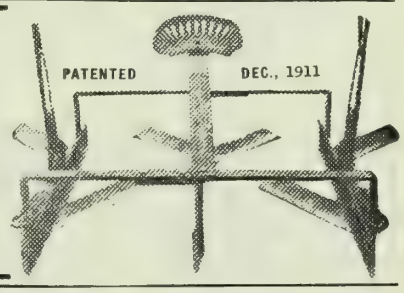


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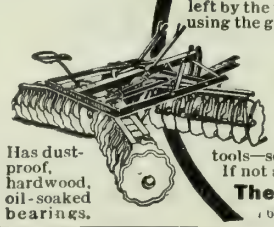
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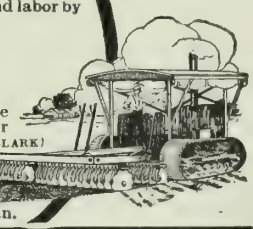
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31x4	13.85	2.85	3.20
32x4	14.05	2.95	3.30
33x4	14.70	3.10	3.40
34x4	14.95	3.15	3.50
35x4	15.65	3.20	3.60
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34x4½	20.25	3.85	4.30
35x4½	20.85	3.95	4.35
36x4½	21.25	4.10	4.50
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A very interesting description of this territory is found in the booklet — Vacation—1915, free copies of which may be obtained at 874 Market Street, San Francisco, or on application to J. J. Geary, G. P. A., 808 Phelan Bldg., San Francisco.

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GEO. N. TYLER,
Brookdale Nursery, Los Gatos, Cal.

Handling Grain in Sacks is Wasteful.

(Continued from page 585.)

cheaper than they can buy sacks for one good crop. Ocean boats are not ready; but only 28 per cent of our crop is exported and there is far less danger now than previously. Two bulk shipments were made to Europe last year. The results showed that there will be no trouble in arranging safe transportation. River barges are not as a rule equipped for bulk grain; but many of them are, and the rest could be fixed quickly.

Objections Not Serious. — Objection was made to bulk handling that it would be hard to keep separate the various grades and the different quality grown in each section. That this is simply a matter of adjustment is implied in the fact that California, Oregon, and Washington are practically the only section in the world handling grain principally in sacks. It is believed that bin arrangements will be made so far as necessary and the committee expects to ask the Port Costa warehouse to put in a small elevator so that the transition from sacked to bulk grain may be made gradually and without any very expensive mistakes.

Grading in Sacks Unsatisfactory.— Sampling of sacked grain is not only wasteful, but very unsatisfactory on account of variation of dirt, weeds, straw, etc., in various sacks. A few weedy patches in the harvest field may reduce unjustly the grade of a large proportion of the crop, and with no one to be justly blamed. Bulk grain is very easily and satisfactorily sampled for sale.

Elevators on Roads or Railways.— Owing to much of our grain-hauling to market being done at the muddy time of year, one man said that farm elevators would not only prevent the marketing all winter but would prevent the borrowing of any money on a crop thus interned. It was pointed out that the increase of electric lines and good roads and motor trucks would enable any farmer or group of them to build an elevator at a railroad, a good highway, or a river landing. Here the grain would naturally be insured; and any insured grain would be good collateral for bank loans. Mr. Jennings borrowed as much last year on his bulk grain in elevator on railroad as he did the year before on sacked grain, though ordinarily he wouldn't figure on quite so much.

Now What of a System?—F. F. Lyons, the San Joaquin farm adviser whose suggestion was probably the starting point of the present agitation, emphasizes that from the start, the country elevators be kept under control of the producers. Many farmers are asking what kind of a cinch the mill men would have on them if they put their grain in mill-owned elevators. One suggestion at the meeting was that growers, mill owners, transportation men, and warehousemen must combine to make bulk handling possible. This looked so formidable that the final sense of the meeting was that it is strictly up to the farmers to put in their country elevators. Then all the other factors will come to it. Meanwhile much good development work is being done by the mills and this is in no way harmful if they do not obtain a monopoly as was done in the Middle West. The Canadian government has fostered the building of terminal elevators to receive the supply from farmers' co-operative elevators in the interior. Co-operative elevators are common in the grain states of the East.

IMPEACHING THE APPLE.

The sovereignty of the apple in northern markets is being impeached by southern fruits. In the course of an article on the orchardists' future written for the apple growers of the country, Prof. S. A. Beach of Iowa says this, in the Fruit Grower of St. Joseph, Mo.:

"Another important factor in the situation is the way in which other fruits, especially sub-tropical fruits, are competing with the apple. Not only the markets of the large cities, but also those of the smaller cities and towns are continually filled with fresh fruits. This means that they are being supplied to the consumer in many cases in place of the apple. Peaches are in the market from early summer until late fall. Small fruits, grapes, cherries and plums are also in good supply for a considerable period of time. But perhaps more important still is the competition which comes from the banana, orange, grapefruit and other citrus fruits. The banana trade, which a few years ago was insignificant, is now reported to have a value of over $15,000,000 annually. The citrus growers' organizations have pushed the sale of oranges and grapefruit until it is reported that the annual consumption of citrus fruits in this country is now over 100,000 carloads per annum. All of these fruits are also competing more and more strongly with the apple in foreign markets.

WINTER-GROWING TOMATOES.

To the Editor: Apropos to your timely editorial on shipments of tomatoes and celery from Florida, it may be of interest to know that a few days ago I was shown a three-year-old tomato plant, still producing fruit, in the vicinity of Porterville, Tulare Co. At another place a one-year-old plant with plenty of ripe tomatoes. At the ranch of John Linden a plat of banana plants produced last season 25 of the most perfect bunches of bananas I have ever seen grown in California. With many cozy nooks along the foothill belt bordering the great valley of California where tomato and banana plants survive the winters without protection, it seems hardly necessary to depend on Florida for early tomatoes. G. P. Rixford.

1813 Pierce St., S. F.

SULPHUR RED SPIDER.

To the Editor: How and in what proportion should I mix lime and sulphur to spray almonds for red spider?—A. G. Z., Esparto.

[Do not use lime, but spray pure dry sulphur, using a mechanical blower as soon as the first spiders appear and as needed thereafter, or dilute commercial soluble sulphur paste with water. Do not let them get ahead of you.—Editors.]

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System in Alfalfa Harvesting.

[Written for Pacific Rural Press.]

Heavy alfalfa yield of prime quality on Woodward Bros.' ranch in Perris Valley is largely due to their system of harvesting. They get "long hay," perhaps a bit too coarse for cows, but fine for horses and for heavy tonnage. It is cut as soon as sprouts come out of the crowns. This, taken with a darkening of color from the light green of thriftily growing alfalfa, indicates maturity and maximum tonnage combined with maximum tenderness and le ess.

According to C. W. Woodward, if alfalfa were irrigated only once per cutting, it wouldn't send up the new sprouts in time and he would have to depend on the blossoms and would lose growing time. He irrigates twice per cutting after alfalfa is three or four years old. When it is younger, it often gets five or six irrigations per cutting. The second irrigation of the older alfalfa comes two weeks before cutting, so the ground is not wet for the hay, but is still moist on account of the shade.

The 80 acres all slopes gently in one direction with 40 half-mile checks 33 feet wide. About two of these are cut each afternoon as close as possible to the ground, perhaps 1 or 2½ inches. By the time all the checks have been cut, the first are ready again. Irrigation follows removal of the hay. The small quantity of hay cut per day permits continuous irrigation night and day, and keeps three men and a boy busy all season harvesting and baling it.

Hay lying flat and fresh cut will stand considerable moisture without damage. Mr. Woodward points to a two weeks' drizzle on some hay lying flat last year. The hay was hauled as soon as it was dry enough, and was nice and green last winter. If it had been in the shocks, wet, and turned over to dry it would have turned black and spoiled, says he. Alfalfa heats right away when wet in shocks.

As there is a heavy dew on most nights in Perris Valley, it should appear on fresh-mown flat alfalfa rather than on cured and shocked hay. This is one reason for afternoon mowing. Another is that the afternoons are too hot to cure hay. It dries outside while still too moist inside to keep. If dried enough, the leaves would fall and the stems crack to pieces. The slower drying of the morning is preferred. If hay were shocked afternoons and became damp with dew, the outside of the shock would be discolored by next day's sun before hauling and the crade lowered.

Discolored Hay Separate.—Many people do not re-rake the wisps of hay which fall back onto the field in hauling. These remain to discolor and mix with the next cutting. But in the Woodward ranch every check is re-raked, leaving only the finest stuff which the rake does not pick up and which forms a needed mulch till growth shades the ground again. All of these "rakin's," bleached and broken hay are kept separate, to avoid lowering the grade of the rest. The good hay is baled first each afternoon, so if any is left it will be the poorest grade. The good baled hay is piled onto the poor bales to protect it from the ground. Reraking also prevents the bunches of hay from smothering small patches of alfalfa; and it loosens the top soil to a certain extent.

SORGHUMS ON HEAVY LAND.

To the Editor: I have 30 acres too wet to plow for grain. It is somewhat heavy, and the watertable lies within 15 inches of the surface. It was pastured last year because it was too wet for grain. Would Egyptan corn do well if planted as the ground dries out, and would it be the same as summer fallow?—H. R. C., Woodland.

[Answered by Prof. B. A. Madsen, University Farm, Davis.]

All forms of the grain sorghums do very well in the Sacramento Valley, and there is no reason why a good crop should not be obtained on the land in question. On soil that is heavy and where the water table is near the surface, it is usually not so advisable to seed as early as in sections where the soil is of good physical condition and moisture conservation of greater importance.

In preparing land for Egyptian corn it should be plowed as early in the spring as conditions will permit, and worked down into a good even seed bed. In growing crops of this character, a thorough preparation of the seed bed is of utmost importance, as the greatest difficulty with crops of this character is securing a good stand. Egyptian corn should then be planted about the middle to the latter part of April, drilling in rows three and a half feet apart, using approximately nine pounds of seed per acre. Throughout the growing season it is handled in the same manner as any other corn crop. On heavy soils thorough cultivation during the earlier stages of the growth is usually necessary to prevent the soil from baking and packing around the young plants, as well as to check evaporation. However, where the water table is near the surface this latter factor may not be of importance.

In the Woodland section it would be better to use Dwarf Milo than any of the other Durra types, as it is more prolific and seems to be better adapted to conditions in this valley.

HOW TO SECURE PRISON BAGS.

To the Editor: Will you please tell me if the State Prison at San Quentin sells grain bags direct to the farmer, and if not how are they put on the market? If they are sold to the farmers, how should I write for price and terms?—Subscriber, West Sacramento.

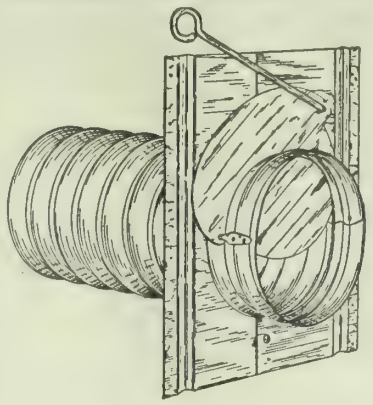
[Answered by J. A. Johnston, Warden, California State Prison, San Quentin.]

[San Quentin bags are not sold in the open market, but are sold direct to consumers, and in each case we require an affidavit that the bags are for their own personal use. Copy of the affidavit form I inclose for your information. Purchasers file orders like these forms with the warden. I am obliged to say, however, that it would be useless to send any more order blanks out at this time as the full capacity of our mill for the remainder of this year has already been sold.]

[Copies of affidavit to which Warden Johnston alludes may be secured by writing him at San Quentin.—Eds.]

Alfalfa Growers

If you are using clumsy, leaky and undependable gates in your irrigation work, **GET RID OF THEM.** Every one installed means just that much more loss to you in water and money, as well as much added and needless labor in transporting and operating them. At best, they are only temporary. **REPLACE THEM** with



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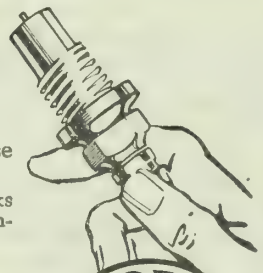
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Agency, "Stover's Good Engine."

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1916 SMYRNA FIGS

Mr. Grower, how many will your trees produce this season? They have brought as high as ten cents per pound in the sweat-box on account of the war interfering with importations. You have done your pruning, plowing, irrigating and cultivating, but this expense will be wasted, unless you secure a sufficient supply of **PROFICHI FIGS** of the right varieties. The Mamme crop was short this season and the **PROFICHI** crop will be short as a consequence. I have a larger Capri orchard than my Smyrna trees require and will have a surplus of **PROFICHI FIGS** for sale. After spending your time and labor to secure a crop, can you afford to lose a $200 a ton crop by neglecting to secure the necessary **PROFICHI FIGS?** Limited quantity, June delivery, for sale. Order now.

THOMAS H. LYNCH, BOX 21, R. R. 8, FRESNO.

Mechanical Power on the Farm.

FITS ENGINE ONTO BICYCLE.

[Written for Pacific Rural Press.]

Thirty miles an hour on a bicycle is accomplished by Alfred Hennings, the youthful son of a poultryman near San Gabriel. He bought a new bicycle and fitted a light 2-cycle valveless engine into its frame. Since gasoline costs too much, he put on a new Bosch magneto in order to burn distillate. The total cost was $110 including an electric headlight. He now has a "cyclometer" which can be quickly dismantled to use as an ordinary bicycle. The engine burns a mixture of distillate and lubricating oil. When the distillate has vaporized, the oil remains for lubrication. The engine is started by running the bicycle a few feet.

BALES HAY ON DAIRY RANCH.

[Written for Pacific Rural Press.]

Twenty-five to 30 tons of hay is baled per 10-hour day by C. H. Snell of Ontario with an I. H. C. baler, a 6 or 8 h. p. engine, and six men. The men cost $50 a month or $35 and board, making the labor cost about $.40 to $.48 per ton average. This is offset considerably by the labor saved in handling, hauling, and storage. There is also a smaller investment in storage room or else smaller loss of hay and quality from weathering.

The baling is done, even though the hay is practically all fed to cows on the ranch. Two men pitch off the stack or run buck rakes as the case may be, one man feeds the machine, one punches wires, one ties wires, and one handles the bales.

GASOLINE WILL BE CHEAPER.

"There are today two and a quarter million automobiles. Figuring conservatively, estimated 25 horsepower each, we have 60,000,000 horsepower. The combined horsepower of all the steam motives in America is less than 50 per cent of that," says Dr. Rittman, in whose work with gasoline the government has become interested.

"We do not ordinarily realize that you figure 500 gallons gasoline per machine per annum. There is considerably more than a billion gallons right there. Then, our rough estimate is that for other purposes, including export, we use 50 per cent as much as we do for the internal combustion engines.

"Now, then, a plant that would turn out a thousand barrels of gasoline a day, would make just enough to take care of 20,000 automobiles, which is only five days' supply—a big plant, so it seems. But merely to make up the deficit in gasoline production which has occurred since last July in Oklahoma field alone, we will have to build fifty such plants and we are going to be some time catching up with it.

"No two crude oils are the same. Two wells in the same oil field are different, and one will contain more gasoline than the other. The average gasoline content of petroleums in America is below 12 per cent. By breaking processes we can bring that up to 60 per cent; in other words, five times what it was.

The average gasoline contained in California oils for about a 100,000,000 gallons produced per annum, is about 2½ per cent. But we can produce gasoline from these oils by the 'cracking process.'

"This very day there are 300,000 automobiles in the country that run on 'cracked gasoline'—gasoline made from other materials, such as kerosene, gas oil, etc.

"Now, how much gasoline can we hope to get by this method? On those Eastern crudes from which we are now getting 25 per cent as gasoline, we should get 70 per cent to 80 per cent of the crude oil. So you see, we can hope to solve this gasoline problem by various 'cracking processes.'

"I say that 'synthetic' gasoline will catch up with the demand in the next six months. You can look for higher prices before lower prices, but in the course of a year or so, most certainly we will have an available supply of gasoline. We will catch up with the demand."

LITTLE ENGINE SUPPLIES WATER FOR SANITARY DAIRY.

[Written for Pacific Rural Press.]

To cool milk which is sent to Los Angeles on motor trucks by E. Hertrich of Pomona, as well as his neighbors, Mr. Hertrich has a simple cooler. It is a set of nine horizontal tubes through which fresh water is pumped while the milk flows over them from a tank through a hopper as wide as the pipes are long. A 2½ h.p. Fuller and Johnson engine pumps the water from 30 feet below the surface of the ground into a 2000-gallon tank 15 feet off the ground. Water from the tank is also used for the stock, to clean out the cement-floored cowbarn, to irrigate the garden, and to supply the family.

STANDARD PUMPING PLANT GUARANTEES.

[Written for Pacific Rural Press.]

In Arizona, farmers buying pumps have had difficulty getting satisfactory guarantees of efficiency. One such bought a pump outfit on an impossible guarantee. He asked the University of Arizona to test it; and with proof of faithlessness, he has successfully refused to pay the $500 balance.

Thousands of Feet, New and Second - Hand

WATER PIPE

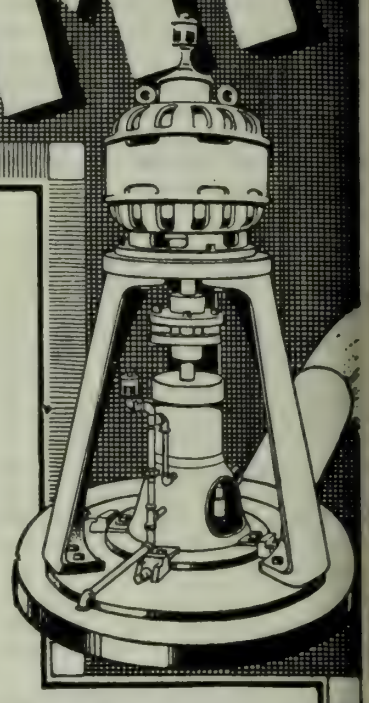
Positively lowest prices—all sizes. Finest water pipe, well and water casing, riveted and irrigation pipe, wrought iron fence posts, etc. Big stock. Prompt shipments anywhere. Write, phone or wire for quotations.

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Over ten years of successful use of Layne & Bowler Pumps in the West has demonstrated that they are by far the most economical pumps for all irrigation requirements. They give efficient, continual service, insure a dependable water supply under every condition. No matter what your requirements may be, a Layne & Bowler Pump will meet them perfectly. Let the world's largest water developers solve your pumping problems.

Layne & Bowler Pumps come in many styles and sizes, either belt driven or direct connected. Special pumps to meet any condition built to order. Let our free Advisory Department assist you.

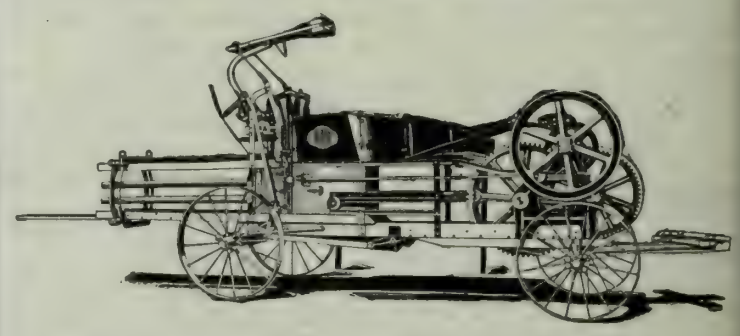
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Baled Hay at Lowest Cost



THE price of hay, and the profit in it for the grower, depends upon the condition in which the hay is marketed. Hay of the same quality, in tight, smooth bales, brings a higher price than when shipped in loose, ragged bales.

International Hay Presses, with their powerful toggle-joint plungers, produce tight, solid bales. The roller tucker makes the bales smooth. The bale chamber tension produces bales of uniform size. The presses work fast, the different sizes and styles baling from 6 to 35 tons per day.

The line consists of one and two-horse presses, motor presses, belted jack presses and fast power presses. The one-horse press is made in 14 x 18 size only—all others in 14 x 18, 16 x 18, and 17 x 22 sizes, the accepted standard. The capacities vary from a small horse power press for the man who wishes to bale a little hay, to the largest, fastest custom power presses ever required.

An attractive mailing folder, in colors, shows **International Hay Presses** as they are, and gives complete specifications. Write for it.

International Harvester Company of America
(INCORPORATED)

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San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

Belting That Must Make Good



When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a **free sample** of **Test Special** together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

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Established 1846

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Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

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Width of Belt ..... Ply .....

Distance Between Centers of Pulleys { .....

Revolutions per Min. of Driving Pulley { .....

Kind of Machinery Driven { .....

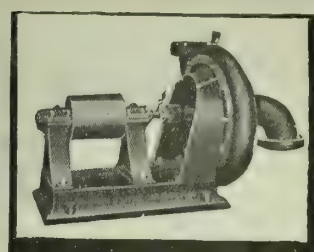
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My Name .....

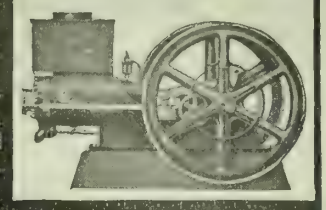
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Send for our large No. 36 Catalogue Mailed Free. GASOLINE ENGINES Inquire of your Local Dealer for full particulars.



The University has been circulating a letter asking manufacturers to adopt a standard form of guarantee specifying that the fuel consumption shall not exceed a certain amount when the plant is delivering a certain amount of water lifted a certain number of feet.

A dozen dealers, including the De Laval Dairy Supply Co. and Smith-Booth-Usher of Los Angeles, replied favoring the standard guarantee and expressing willingness to use it.

GRINDS STRAW AND HAY.

[Written for Pacific Rural Press.]

An alfalfa meal mill and its 100 h.p. motor were mounted, some years ago, on a freight car by the Patterson Ranch Co. of Oxnard, so the mill could be operated at several places connected by railroad. Manager J. Ruopp writes that "in addition to the saving we have made in feeding dairy and beef cattle with various ground feeds, we have saved about $1.25 per head per month, or about $5,000 a year, on the feed of our 300 to 500 head of work stock."

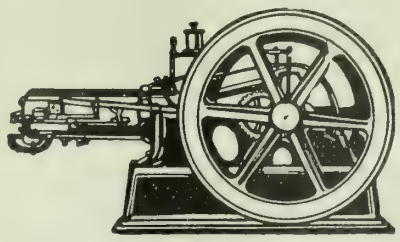
They grind lima bean straw, alfalfa, oat, and barley hay. This is mixed when ground, with beet sugar residue molasses vaporized by steam. Better grades of meal containing grain hay and more molasses have been used as part rations for the horses, while the poorer grades have been successfully fed as part of the ration to hundreds of fattening beef cattle. It is figured that all digestible nutrients are in this way digested, while much would be wasted when fed as whole straw, vines, or hay. The cheap straw with cheap molasses, thus takes the place of more expensive roughage.

Their difficulty lay in the necessity of getting too large a mill. They cannot keep it busy grinding feed for their own stock. A smaller one, however, would not take the flakes of baled hay or straw without loosening them up. Anyhow it is not necessary to run the mill all the time.

CURED MISFIRE OF ENGINE.

To the Editor: I notice in your issue of April 8, A Subscriber, Denair, has some trouble with his engine missing fire. I had the same trouble with mine, a Western 12 h.p. I thought it was weak batteries, and got new ones; then I blamed the points. Then I got an expert but he failed to locate the trouble, and I got another; he found the lower valves were somewhat dirty. That was the trouble. When an engine begins to miss fire it leaves a deposit of soot on the lower valve and the engine loses some of its compression. The fuel is then not properly vaporized and consequently misses fire. I could run my engine by using about four times as much fuel, but it gave lots of black smoke. I think dirty valves his trouble.

Lindsay. Subscriber.



SAN JOAQUIN VALLEY BRANCH
1228 "H" St., Fresno.
Valley ranchers are cordially invited to make our place their headquarters when in Fresno.

"REPAIRS have cost so little it is not worth mentioning," says one satisfied user of

Commercial Engines

"Well pleased and can recommend the engine"; "More than pleased"; "If I needed 60 more engines they would all be Commercials," are the words of other pleased purchasers.

What About Your Engine Needs?
Write for our new Catalog 22-E, describing in detail the superior construction of our engines, noted for their power, reliability and low fuel consumption. Sold direct from factory to you.

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2424 Porter St., Los Angeles, Cal.

The KROGH Vertical Pumps


New Type Vertical.

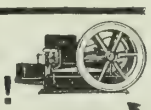
Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film; absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts means less friction and greater efficiency.

Get our Bulletin No. 78 before deciding on a pump.

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PRICES GO DOWN!
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Write for prices on 12, 16 and 22 H-P.

You can't buy so *good* an engine at the same price. You can't buy a *better* engine at double the price. Lower fuel expense. Simple in construction. Easily started. 30 to 50 per cent surplus power. **90-Day Trial Offer.** Sold direct, factory to user. Established 1870.

Write for free book, "How to Judge Engines" and for pricelist of all sizes and styles, Kerosene, Gasoline, Distillate, Naphtha and Gas.

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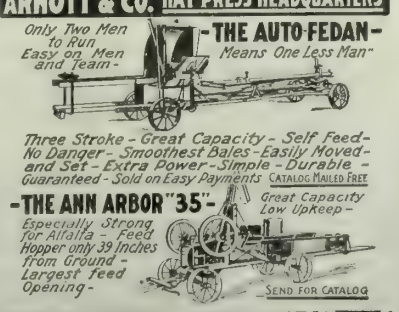
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California Garden Flowers, $1.50 Postaid Pacific Rural Press

General Agricultural Review.

GRAINS AND FIELD CROPS.

Oakdale pea crop is reported unusually good.

Cotton for bean bags is being proposed in Orange county.

San Lucas grain is turning for the harvest. So it is around Tracy.

Beldi barley seems to thrive in the experimental plots near Porterville.

A 1200 acre job of rice planting was completed near Richvale in early May.

Stanislaus farmers are using sulphur fertilizers for alfalfa under direction of the Farm Bureau.

Practically no grain hay will be cut around Wheatland, but most of the grain hay in the hills bordering western San Joaquin county is cut and shows a good crop.

Seed potatoes are to be grown extensively in Modoc county by W. V. Shear of U. S. Dept. Agr. and Frank McArthur.

Rice freight rates from California to Colorado, Utah, and Wyoming, have been reduced from 60 cents per cental to 50 cents.

A heavy north wind in Butte county last week blew down a lot of grain. Late sown grain is not much good in Pajaro valley.

The Orland Alfalfa Mill will grind second crop hay, offering growers $7 per ton loose at the mill. They expect to handle 500 tons or more.

A decrease of 20 per cent U. S. winter wheat acreage and a harvest of ⅛ less than last year is estimated by the U. S. Chamber of Commerce.

Twenty boys in Douglas county, Nev., are raising what they hope will be a carload of potatoes. Work is under supervision of State University.

Kings county grain is reported in excellent condition; 190,000 acres were sown, 10,000 of which were lost by Tulare lake floods. They are looking for 25 sacks per acre.

The last Delta shipments of asparagus to the East were made last week. Prices averaged over $2000 per carload. One car sold at $2485. From Oakley 100 carloads were shipped.

The crying need of nitrogen for grain on worn out land is being demonstrated on Roberts Island near Stockton in about 30 plots on which various fertilizers are separated by unfertilized strips.

Express shipments from Los Molinos last summer were 2500 crates cantaloupes, 2500 crates tomatoes and 2500 of sweet corn, string beans, sweet peppers, cucumbers, radishes, lettuce, onions and eggplant. These are from small farms.

Grain between Sacramento and Wheatland looks bad. It is considerably better north of Marysville and is fine around Tracy, San Joaquin county. In Yolo county, rain knocked down a little, but damage is exceeded by benefit.

The rice acreage this year will be the heaviest ever planted in this State, estimates by Geo. Harvey of the California Rice Growers' Association, being right around 100,000 acres. This is three times as large as last year's acreage. Planting has been done ten days to two weeks earlier this year than last on account of the favorable weather for planting. Unless early fall rains interfere, the growers expect large yields. Mr. Harvey estimates a two and a half million sack crop for the State this year. Last year's crop has been taken out of the growers' hands at good prices, about seven cars a day being shipped from Butte county to Lake Charles, Louisiana, whence it it is re-shipped to Argentina.

CITRUS AND SEMITROPICAL.

Southern navels are still plentiful.

Imperial county inspects imports of citrus fruits, to prevent infestation.

Two carloads of citrus trees have been shipped by the San Dimas nurseries to South Africa.

Florida grapefruit has been of poorer quality than usual. The California crop looks fine.

Valencia shipments have been so heavy that the market reacted a bit. This is said to be partly due to immaturity of the early Valencia shipments.

Tulare county estimates its Valencia crop at 1200 carloads. None have yet sold at less than $1.25 net to the grower, while $1.40 is about the average.

In the exhibit of avocado trees and nursery stock at the recent convention of the Califoria Avocado Ass'n, the gold medal was awarded to the Hart and Barber Avocado Company for the best display. The awards were made by the Association's committee on classification and resistration headed by Dr. H. J. Webber, director of the State University's citrus experiment station at Riverside.

DECIDUOUS FRUITS.

About 30,000 strawberry plants were brought into Imperial county in April.

Reports from Southern California indicate a very short cling peach crop.

The first carload of cherries out of Placer county went forward May 2 by express.

Thirty boxes of apples from Washington were sold in Imperial county in April.

William Pierce of Suisun sold his cherry crop on the trees to the Earl Fruit Co. for $18,000.

Suisun is boosting for a dried peach packing plant to be located there by the California Peach Growers.

The Hemet Canning Co. is contracting apricots at $40, cling peaches at $25, and freestone at $20. Apricot crop light.

The Evening Pajaronian is putting forth a strong plea for support of the Watsonville Apple Distributors by the minority still outside.

Washington cherries, peaches, and apricots were badly injured in low orchards by a frost late in April. Pears and apples seemed uninjured.

Offers of $20 per ton for Lovells and Orange clings and $25 for Phillips are being made in the Selma district by cannery representatives.

Cherries in Yucaipa Valley ripened early this month. Automobile parties come there, as to the Beaumont orchards, to pick the fruit for themselves.

The Shanahan fruit ranch in Shasta county, consisting of 140 acres of prunes and 10 of other fruits besides 148 in other crops, recently sold for $40,000.

April imports of deciduous trees to Imperial county were 14 pears, 277 peaches, and a few miscellaneous. It was rather warm planting time there.

E. H. Erickson of Brawley, shipped the first apricots April 28 to Los Angeles. They were of the Newcastle variety and crates weighing 25 pounds brought Mr. Erickson $4.00

A report from Ukiah states that there is a considerable showing of scab on the young fruit in the pear orchards; in some cases it has even attacked the young and immature blossom stems.

Two hundred prune growers in the


CHUBBUCK'S IDEAL GOPHER TRAP
Larger than runway; jaws pull rodent in; catches large or small gopher and holds it. Farmers say it's worth dozen other makes. Big sales. Price 50c. If not at your dealer's will send it to you postpaid; 2 for 95c; 6 for $2.70; 12 for $5.10. Money back if you are not satisfied. Free circulars.
E. J. Chubbuck Co., Dept B San Francisco, Cal.

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You are "eligible" if you want more mileage, more safety and satisfaction; more quality for your money.

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California Fruits and How to Grow Them

EDWARD J. WICKSON.
Seventh Edition, Extended and Revised.

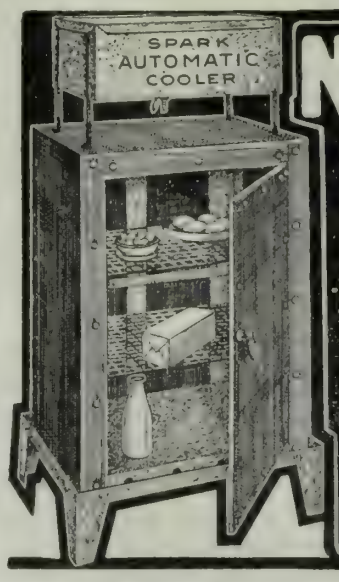
Contains over 500 pages of text with many illustrations. Goes thoroughly into every phase of that immense industry, California Fruit Growing.

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The book then goes into the subject of Fruit-Growing from the nursery, on through budding and grafting, preparation for planting; planting, pruning the trees and thinning fruit; cultivation, fertilization and irrigaton right along to picking, canning and preserving, with chapters on injurous insects, tree diseases and the protection of the trees therefrom. Every fruit and nut which can be grown commercially in California or countries possessing a similar climate, has received the attention which the forty years' experience of the author makes of incomparable value to the fruit grower.

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CALIFORNIA HOG BOOK

Every hog-breeder in the State should have a copy of this book handy to refer to in cases of emergency. Every day the practical side of the book will help you. The author, W. S. Guilford, is a swine breeder, and he tells just what you want to know when a difficulty presents itself. The book contains 256 pages of text, besides many full-plate illustrations. Tells how the successful breeders feed and handle their hogs.

PRICE, $2.00 POSTPAID.

PACIFIC RURAL PRESS, Publishers

Salem district (Ore.) with a combined acreage of 1500 have pooled their fruit. About 1000 acres are outside The acreage is 10 per cent more than last season.

The Bogue Farmers' Protective League endorsed the new Peach Ass'n after hearing its purposes and system explained at a meeting April 21, writes Sec'y B. M. Coe. Forty members signed up.

Shasta County Horticultural Commissioner Lamiman reports that the prune crop of Anderson Valley will be only 60 per cent of normal. Peaches will be only half a crop. Pears will be a quarter of a crop.

Growers of 7,000 tons of canning peaches in Tulare county have organized the Tulare County Canning Peach Growers' Association. They have fixed a minimum price of $35 for Tuscans, $32.50 for Phillips, $30 for Orange, $25 for Lovells, and $22.50 for Muirs.

The Tulare County Growers' Cannery may be run this season. It is said that the buyers of the crop want to ship it to the Ontario cannery, at a cost of $8000 freight and ice, whereas $8000 would put the local cannery in first-class shape and provide local employment.

According to Carl Ley, horticultural commissioner of Glenn county there have been about 3,000 acres of fruit trees planted in that county the past season. Almonds, prunes, pears, oranges and lemons comprised the principal varieties planted. Prospects for almonds and prunes seem very good.

Final action by the State Central Committee of the Prune and Apricot Growers' Information Bureau was taken May 8 on the forms of voting trust and subscription agreements and crop contracts according to Secretary G. E. Merrill. A promotion committee of nine, including one of the members of the State Central Committee will be appointed to supervise the canvass.

At a meeting held in Gridley, Butte county, Saturday, May 6th, the permanent organization of the Feather River Growers' Association was completed. The Association which covers a territory extending from Chico, Butte County, to Tudor, Sutter County, is the sixth local Association to become affiliated with the California Growers' Association.

PEACH GROWERS OPERATING.

The million dollar California Peach Growers was officially announced in operation May 1. The officers are: William Glass, president; J. F. Niswander, vice-president; A. E. Sunderland, secretary; Directors Chris Jorgensen; John C. Rorden, Selma; F. H. Wilson, Dinuba; W. J. Wilson, Hanford; Warren H. Woods, Suisun.

The canvass for subscriptions up to $1,000,000 and for dried peach crop contracts will be continued vigorously. The offices in Fresno will be moved to the Holland Building about June 1. The Sacramento Valley is coming in strong with subscriptions.

MISCELLANEOUS.

President Wilson has restored to entry 148,000 acres in the Salinas valley oil reserve.

Contracts have been let for part of the work on the Anderson-Cottonwood Irrigation system.

Warm land with hardpan west of Dixon is being suggested for rice by the Dixon Tribune, provided water can be obtained from Putah canyon.

The State Fish and Game Commissioner suggests an English-sparrow-killing week, because the pest drives out insectivorous and song birds.

Smudging Butte county olives saved 40 to 80 per cent of the crop, while a practical total loss of fruit was reported by horticultural commissioner Earle Mills where smudging was not practiced.

All export records were broken by U. S. in March, which were valued $410,000,000 which is double the March average for the past five years.

Pole lima beans are being advocated for city backyards by the Santa Barbara Daily News on account of their nutritious quality and fast growing.

Alfalfa seems scarce in Alexander Valley, Sonoma county, where one farmer sold 100 tons to 75 farmers who drove over for it and loaded it themselves.

Shasta County Sealer of Weights and Measures Frank Erwin reports that 65 per cent of the scales examined in the county were out of order. Four-fifths of these were weighing in favor of the dealer.

Oakdale rice growers are planning a nine-foot dam to impound the drainage water from their fields, to be pumped back onto the rice if the regular irrigation water gives out. Two million gallons may thus be conserved.

State Supt. of Public Instruction Edward Hyatt is passing on an appeal from the U. S. Dept. of Commerce that people save the 15,000 tons of paper made in U. S. every day, as the sources of supply are becoming exhausted. Old paper and rags may be used again.

Prof. Elmore Chase of Fair Oaks advises spraying almond nursery trees thoroughly with Bordeaux before heeling them in, as it has been found that they are attacked by the lemon gum disease.

LATE FROST DAMAGES GRAPES.

[Written for Pacific Rural Press.]

One of the severest late frosts on record visited the Sacramento and other valleys of the coast last Saturday night. Grapes were the severest sufferers, the State Viticultural Commissioner having estimated a $5,000,000 loss. The Sacramento Weather Bureau estimated 40 to 50 per cent grape damage in the Sacramento, Napa and American River Valleys. Sonoma county was hard hit. Santa Clara had damaging wind May 5th and frost Saturday night. The latter hurt only the vegetables and a few grapes. The northern half of San Joaquin county suffered severely, but the report of heavy damage to potatoes does not seem to be confirmed. Practically all tree fruits were uninjured. Tender vegetables suffered even in Tulare county.

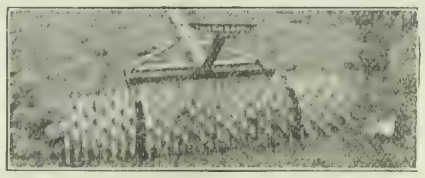
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Makes a Perfect Seed Bed
STOPS EVAPORATION—PRESERVES MOISTURE.
The Best Clod Crusher ever made for Farmer, Orchardist, Vineyardist, Nurseryman and Seedsman.
MADE IN ALL SIZES
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"The One-Man Tractor"



Plowing in San Joaquin Valley with a Bates Steel Mule.

---does everything that horses do, and does it better, quicker and cheaper. . . .

a 14 year old boy and a BATES STEEL MULE VS. ten horses and two grown men

A fourteen-year-old boy can run the BATES STEEL MULE hitched to any machine and accomplish more work than any TEN HORSES and two grown men.

some interesting comparisons

Under normal conditions this is how one man operating a one horse-drawn implement will "stack up" against the BATES STEEL MULE covering the following number of acres:

	Horses	Bates Steel Mule
Plowing	4½	10
Cultivating Corn	10	31
Discing	20	55
Mowing	15	36
Harvesting	20	40
Drilling	20	50
Dragging	65	180



FREE catalogue tells further particulars

$1180 F. O. B. 30 H. P. at Belt 18 H. P. at Drawbar.
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AGENTS
John Deere Plow Co., Seattle, Wash.; Osborne & Son, Turlock, San Joaquin Valley; Imperial Valley Hardware Co., El Centro, Cal.

Dairy Score Card Changed.

[Written for Pacific Rural Press.]

The new dairy score card, printed herewith and which will be used by the State Dairy Bureau after October 1, is distinctly different in many respects from the one now in use.

It will be used only in those dairies whose products are sold under approved inspection departments whch may or may not be provided by cities or counties or both. The State Dairy Bureau is trying to have the objectionable features removed by the U. S. Dept. Agr., making special provisions on the score card for California.

Under the old card a dairy was scored on a basis of 50 per cent for equipment and 50 per cent for five with the old. Utensils and milking 17 per cent under the new and 12½ under the old. Handling of milk 16 per cent under the new and 10½ under the old.

The chief objection to the new score card is that it was made by the U. S. Dept. of Agriculture to apply to eastern conditions, and as a result is impracticable in certain respects in California.

For instance it will be noted that bedding is allowed one point, fresh air controllable flue system three points, four square feet of glass per cow four points, 500 cubic feet per cow three points. In a large majority of California dairies these provisions seem, in a measure, absurd.

Under "methods" the most radical changes are in the percentages allowed for cooling, storing, and transporting, the new card allowing more points for these than the old.

DAIRY SCORE CARD TO BE USED UNDER NEW LAW.

EQUIPMENT. Cows:	SCORE. Perfect.
Health	6
Apparently in good health	1
If tested with tuberculin within a year, and no tuberculosis is found, or if tested within six months and all reacting animals removed	5
(If tested within a year and reacting animals are found and removed	3)
Food (clean and wholesome)	1
Water (clean and fresh)	1
Stables:	
Location of stable	2
Well drained	1
Free from contaminating surroundings	1
Construction of stable	4
Tight, sound floor and proper gutter	2
Smooth, tight walls and ceiling	1
Proper stall, tie, and manger	1
Provision for light: Four sq. ft. of glass per cow	4
(Three sq. ft., 3; 2 sq. ft. 2; 1 sq. ft., 1. Deduct for uneven distribution.)	
Bedding	1
Ventilation	7
Provision for fresh air, controllable flue system	3
(Windows hinged at bottom, 1.5; sliding windows, 1; other openings, 0.5)	
Cubic feet of space per cow, 500 feet	3
(Less than 500 feet, 2; less than 400 feet, 1; less than 300 feet, 0.)	
Provision for controlling temperature	1
Utensils:	
Constructions and condition of utensils	1
Water for cleaning	1
(Clean, convenient, and abundant.)	
Small-top milking pail	5
Milk Cooler	1
Clean milking suits	1
Milk Room or Milk House:	
Location: Free from contaminating surroundings	1
Construction of Milk Room	2
Floor, walls, and ceiling	1
Light, ventilation, screens	1
Separate rooms for washing utensils and handling milk	1
Facilities for steam	1
(Hot water, 0.5.)	
TOTAL	40

METHODS. Cows:	SCORE. Perfect.
Clean	8
(Free from visible dirt, 6.)	
Stables:	
Cleanliness of stables	6
Floor	2
Walls	1
Ceilings and ledges	1
Mangers and partitions	1
Windows	1
Stable air at milking time	5
Freedom from dust	3
Freedom from odors	2
Cleanliness of bedding	1
Barnyard	2
Clean	1
Well drained	1
Removal of manure daily to 50 feet from stable	2
Milk Room or Milk House:	
Cleanliness of milk room	3
Utensils and Milking:	
Care and cleanliness of utensils	8
Thoroughly washed	2
Sterilized in steam for 15 minutes	3
(Placed over steam jet, or scalded with boiling water, 2). Protection from contamination	3
Cleanliness of Milking	9
Clean, dry hands	3
Udders washed and wiped	6
(Udders cleaned with moist cloth, 4; cleaned with dry cloth or brush at least 15 minutes before milking, 1.)	
Handling the Milk:	
Cleanliness of attendants in milk room	2
Milk removed immediately from stable without pouring from pail	2
Cooled immediately after milking each cow	2
Cooled below 50 deg. F.	5
(51 deg. to 55 deg. 4; 56 deg. to 60 deg., 2.)	
Stored below 50 deg. F.	3
(51 deg. to 55 deg., 2; 56 deg. to 60 deg., 1.)	
Transportation below 50 deg. F.	2
51 deg. to 55 deg., 1.5; 56 deg. to 60 deg., 1.)	
(If delivered twice a day, allow perfect score for storage and transportation.)	
TOTAL	60

EQUIPMENT .....METHODS ....FINAL SCORE

NOTE 1.—If any exceptionally filthy condition is found, particularly dirty utensils, the total score may be further limited.

NOTE 2.—If the water is exposed to dangerous contamination, or there is evidence of the presence of a dangerous disease in animals or attendants, the score shall be O.

methods. Under the new system 40 per cent will be allowed on equipment and 60 per cent on methods.

In comparison of the main points the percentage allowed under "equipment" for health is six per cent in each case. Food under the new ruling is allowed one per cent, under the old two per cent. Water under the new one per cent, under the old four per cent. Stables under the new 18 per cent, under the old 16½ per cent. Utensils nine per cent under the new and eight per cent under the old. Milk room five under the new and 13½ under the old.

Under "methods," eight per cent is allowed for cleanliness under the new and five under the old. Stables under the new 16 per cent, and 17 per cent under the old. Milk room three per cent under the new and

The annual losses of livestock on the National Forest ranges of the West due to predatory animals are over $500,000. An organized campaign is now going on to exterminate these animals. Wolves are responsible for about 70 per cent of the cattle losses, while bears cause most of the remainder. Approximately 75 per cent of the sheep losses are due to coyotes, 20 per cent to bears, and 5 per cent to lynxes and wild cats. Mountain lions are charged with killing only a few head of cattle and sheep.

GRANDSONS OF TILLY ALCARTRA

At Prices within Reach of Every Breeder and Dairyman.



A Grandson of Tilly Alcartra.

We have several splendid grandsons of this now famous cow, which we can deliver to you at prices which will suit the pocketbooks of every dairyman wishing to improve the quality of his herd, whether it be a grade or pure-bred herd. These bulls are sired by our herd bull, Prince Alcartra Korndyke and out of A. R. O. cows, and are the only living grandsons of a cow having a record of over 30,000 pounds of milk in a year. Such an opportunity for increasing production has never been offered DAIRYMEN AND BREEDERS in California, price and quality considered. Buy one of these bulls and solve your low production problem. Write

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

AUCTION SALE

300 Cows and Heifers

On the WM. COLLIER Ranch on the State Highway, 1 mile north of Livingston or 8 miles south of Turlock.

WEDNESDAY, MAY 17.

At 9:30 a. m. (Rain or Shine).

This is one of the finest Dairy Herds in the San Joaquin Valley, and consists principally of Holsteins, with a few Durhams; all young and in fine condition; most all have 1st, 2nd, or 3rd calves. They are heavy producers, many going from 80 to 100 lbs. of milk per day. The owners invite inspection before sale. 200 Cows milking at present time. 100 Heifers, many springers, and lots of Calves. Owing to the large number of Cows to be sold, the Sale will commence promptly at 9:30 a. m.

The Bulls at the head of this herd are registered Holsteins.

All will be sold without reserve as owners are retiring from the dairy business. No outside stock will be sold at this sale.

FREE LUNCH.

WM. COLLIER—Owners—MANUEL MANCEBO.

COL. R. R. BRIGGS, Auctioneer. Phone 4F13, Turlock.

Registered

DUROC-JERSEYS

Our herd is headed by Waukena Wonder 176555 and Col. King 182687—two great sires. A few choice fall boars and thirty gilts, either open or bred, sired by Waukena Wonder. They have the size, length and finish. Are offering spring pigs, sired by Col. King, large uniform fellows for their age. Make selections early. Write for further particulars. Prices right.

FELTON & HOYT

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Send for sensible folder on feeding hogs

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GET STARTED RIGHT

Registered Duroc Jerseys.

$10 each PIGS $10 each

are money makers.

What's the use of raising "Scrub Hogs" when purebreds may be had at this price! They grow faster. Send today.

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RIPON, CALIF.

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LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low priced fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials.

10-dose pkge. Blackleg Pills $1.00

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Use any injector, but Cutter's best.

The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct.

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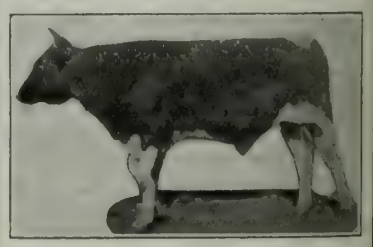


GOMBAULT'S CAUSTIC BALSAM.

A safe, speedy and positive cure. The safest, Best BLISTER ever used. Removes all bunches from Horses. Impossible to produce scar or blemish. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

Holstein Bull



Peterje Cornucopia Creamelie.

The Dam of this bull is almost a 25-lb. cow; her average fat testing, 4.74%. This high percentage in fat of the dam shows that this bull would be an excellent buy for any dairyman who aims to improve the butter-fat output of his herd.

Write or come and see him.

F. STENZEL,

San Lorenzo, Calif.

Jersey Faith Shown at Sale.

[Written for Pacific Rural Press.]

The auction sale of Jerseys held at the Rancho Dos Rios near Modesto, May 6 was the first public demonstration of faith in the Jersey cow that has occurred for almost two years in this State; and for that reason breeders and dairymen were present in large numbers from all parts of central and northern California.

To those who viewed the offering before the sale, it was evident that the owners had taken every precaution to conduct the sale on a straightforward basis and fully up to the previous announcements. A more uniform lot of Jerseys has never been offered at public sale in the West.

This naturally instilled confidence in the buyers' minds with the result that while no startling fancier's prices were paid, both the registered and unregistered animals brought prices which were satisfactory to the sellers and on which the buyers will be able to realize at the milk pail.

This is largely because prices were made by dairymen who have learned the value of good grade Jerseys by experience and who have sufficient faith in the merits of the breed to put their money into registered animals. They have the firm conviction that Jerseys have been selling below their real worth and for less than they will ever sell for again.

The registered aged cows in the offering made the highest average with $134.50 on 17 head, the top price being $190 for Oledera, a six-year-old cow. It should be borne in mind that this cow as well as most of those in the sale has little or no official testing back of her on her dam's side and that the prices realized were largely based on individuality.

The 21 purebred heifers made an average of a little over $113 a head, Pegajosa, a three-year-old, topping this division with a price of $160. For foundation purposes the heifers in the sale were as a whole exceptionally promising individuals, and as most of them were sold to parties with plenty of feed and where good care will be exercised in growing them out, they should do much for the breed in this State in years to come.

Value of Registration.—One of the best illustrations of the value of registration papers that the writer has ever seen was in the difference in price of the registered and unregistered cows sold. Although most of the unregistered animals were of pure breeding and many of them the same breeding as the registered ones, the average prices were about $43 less for the grades; this in face of equally good individuality in most cases.

Considering the fact, however, that many of the unregistered animals showed the need of development in size the $80 average was fair to both seller and buyer.

The heaviest purchaser was H. T. Harrold of Orland, who with W. G. Gernett purchased a carload of registered and unregistered cows, together with the registered bull Dos Rios Pogis. Mr. Harrold runs a large dairy of grade Holsteins, a part of which will be substituted for the Jerseys he bought.

N. B. Hunter of Petaluma purchased a nice foundation herd for his ranch in Sonoma county and F. M. Johnson of Napa purchased a nice lot of registered cows to add to his foundation of registered Jerseys. H. T. Bridgeford of Bethel Island near Bethany bought 35 head.

N. H. Locke was another heavy buyer of registered cows, which will be added to his already large and choice herd in San Joaquin county. A number of local dairymen were heavy buyers of the unregistered cows.

The average for the entire lot was close to the $100 mark, which was entirely satisfying with the large percentage of unregistered animals that were sold. Future sales from the Rancho Dos Rios herd will meet hearty response from the buying public.

CONCRETE SILOS WITHOUT FORMS.

[Written for Pacific Rural Press.]

Two concrete silos built without forms may be seen on the ranch of the Sherman Institute for Indians near Arlington. A similar one is owned by C. W. Main, who lives near the ranch.

Metal lath were fastened to the inside of a 14-foot circle of vertical 2x4's. Jos. Schoulder, the Indian cement man of the Institute, supervised the work and the school boys did it. They plastered a layer of cement 1½ inches thick onto the metal lath. Then they pulled off the 2x4's which had been fastened by small staples, and plastered another 1½ inches onto the rough outside surface. The reinforcing in these silos is as good as the best, and is entirely protected from rusting. There is a solid 3-inch concrete wall smooth inside and out.

The silos were filled with the 1915 crop of Indian corn, each holding 90 tons; and was fed off with practically no spoilage except on top, according to Supt. J. R. McClellan.

Silage Increased Milk. — Each of the 25 milking cows gets about 30 pounds of silage with alfalfa hay and grass in season. They had been receiving alfalfa hay alone, but increased in quantity of milk immediately when fed silage. Dry cows get no silage, though perhaps they need it as much as the others.

The roofs of the silos are distinctive. They were shingled, and rested directly on top of the silo. A hole was knocked in the shingles for convenient filling, but that didn't suit Mr. McClellan. He had the roofs elevated to rest on upright 2x4's four feet long. This allows the silage elevator to be run in on any side and allows the silo to be filled and tramped clear to the top, with a maximum of fresh air for the men inside.

Two kinds of lice, sucking and biting, afflict farm animals. Wash thoroughly or dip the animals with a 2 per cent solution of lysol or creolin. If washed, precede the operation by scrubbing with a lather of soap, says the Washington Experiment Station.

"Remco"
Air-Dried
Redwood

PIPE — For irrigation water, supply-power. Cheaper than any other pipe of equal size, capacity and endurance.

TANKS — For all uses, in all sizes from 500 gallons to 500,000 gallons, and with towers if wanted.

SILOS — For dairymen, stockmen, farmers. In sizes from 25 tons to 300 tons. The best silo made today.

All Remco products are built to your order. Only clear, air-dried redwood is used. Write us your needs and we will send you full information.

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ABSOLUTE DISPERSAL SALE
of the
Famous Charles Jay Welch Herd
105 Purebred Holstein Friesian Cattle 105
85 FEMALES 20 MALES
At the COPA DE ORO FARM, 3 miles from
LOS BANOS
Wednesday, June 28
The Sale You Have Been Waiting For
Look for Future Announcements.

KNOB HILL STOCK FARM Registered Big Type Poland Chinas : : :



SOME TYPICAL KNOB HILL BROOD SOWS.
(Large type, combined with high quality.)

Our herd is nominated in the California Poland China Futurity to be held in connection with the State Fair this fall. We have just imported and added to the herd some of the best blood of the East, including boars from W. J. Hather, Ord, Neb., and Peter Mouw, Orange City, Iowa.
We are offering pigs of both sexes from prize-winning stock. Litters coming at all seasons and stock usually on hand to suit customers.

Come and see them, or write for what you want.
ALL STOCK REGISTERED. ALL BREEDING GUARANTEED.
A. M. HENRY, Prop. Farmington, Cal.

With the Live Stock Men.

DAIRYING AND DAIRYMEN.

F. J. Stimson recently brought 29 Holsteins to El Centro from Seattle.

H. W. Mongenville of Chowchilla recently brought in 15 Guernseys from Wisconsin.

W. L. Mitchell of Napa has purchased two registered Jersey cows and a registered bull from Wisconsin.

A Guernsey belonging to Mr. Young of Yolo led the Solano-Yolo Cow Testing Association for April with 75.9 pounds fat.

Hunt Bros. Co. of San Francisco are stocking an alfalfa ranch with purebred cows, and purebred Berkshires to use the skim milk.

J. R. Coon of Modesto has sold five grade Holstein cows for $790 to M. G. Green of Merced. These averaged $158 each. The bull did it.

Three dairymen of the Chowchilla district recently paid fines, following a visit by the State Dairy Inspector, who found them neglecting sanitary conditions.

A national convention of milk producers and other dairy interests was held May 5 and 6 in Washington, D. C., to discuss national constructive laws and practices.

The Visalia Co-operative Creamery last week shipped their sixth car of butter to Eastern markets. It contained 21,000 pounds for Philadelphia.

Several farmers of Imperial valley have built cheap barns of old railroad ties costing 15 cents a piece. Some have been split in two for light timbers.

Dr. F. H. Shanks of Susanville has been traveling over the State to find a suitable herd of grade Holsteins with a few purebreds to mate with a purebred bull for an eventual purebred herd.

Alexander and Kellogg of Suisun report sale of the 16 months Dairy Shorthorn bull Suisun Darlington to Thos. Griffith, Spokane, Washington, and a four months bull, Solano Star, to Miss E. Park, Santa Barbara.

At least 1.5 pounds butterfat per day for April was made by each of 109 cows in the Stanislaus Cow Testing Association. A Holstein owned by L. D. Thompson, led with 77.1 pounds fat from 1884 pounds milk.

Two dairy Shorthorns led in butterfat production for April in the Gridley Cow Testing Association. A Shorthorn led for March in the San Joaquin Association. The Gridley cows produced 67.6 and 61.7 pounds fat from 4.5 and 4.3 per cent milk respectively.

The report of Supt. Malcolm H. Gardner of the Holstein Advanced Register is given in terms of butterfat, not butter. The statement of a cow's record in terms of butter seems an unfair attempt to create a false impression of superiority and is unnecessarily cumbersome to the industry.

Five hundred and sixty-eight Holsteins, more than half of them with first or second calves, were admitted to the Advanced Register for tests reported March 23 to April 5. The average production for seven consecutive days was 15.473 pounds fat from 420 pounds milk testing 3.68 per cent fat.

N. H. Locke of Lockeford reports that the Jersey cow Empress Lass is continuing to pile up milk and butterfat in surprisingly large quantities her record at the end of 158 days being 7,388 pounds of milk containing 388.77 pounds of fat. Dereen's Lassie of L., another cow in the Locke herd, had made 6,099 pounds of milk containing 316.8 pounds of fat in 152 days.

Guy Miller of Modesto reports the completion of three yearly official tests in his herd of registered Jerseys. Amethyst of Venadera made 578 pounds of fat, Beatrice of Venadera, 522 pounds of fat and Signora of Venadera, a two-year-old, made 458 pounds of fat. This latter record is next to the highest record for that age ever made by Mr. Miller.

Over 900 cows have already been signed up for the Orland Cow Testing Association and a meeting will be called this month to complete organization. Many dairymen in other sections of the west side of the Sacramento valley are anxious to enter their herd, but the promoters are endeavoring to confine the work of the association to the country close to Orland.

Carruthers Farms reports the sale of six service Berkshire boars to Miller and Lux, San Francisco, one service boar to the Fair Oaks Ranch at Willits, three sows and a boar to Frank Robinson, Esparto, two sows and a boar to H. H. Gable, Esparto, 10 Hereford heifers to H. H. Gable, four Shorthorn bulls to Hollister Estate Co., Santa Barbara and three Shorthorn bulls to O'Connel Bros., San Jose.

Allison Peck of Imperial has for the head of his Holstein herd, Rowena Hartog, Clothilde De Kol, sired by Hartog Pontiac; the dam being Whittier Rowena Clothilde. A recent purchase for the Junior herd sire is Mistletoe Alcartra Pontiac a grandson of Tillie Alcartra, Dam Aida Pontiac, sire Tillie Alcarta Son. Mr. Peck has also 10 registered heifers bought from State Whittier School a year ago, and has just added three registered cows.

The Holstein cow Winnie Korndyke Cornucopia de Kol, purchased by the J. S. Gibson Co., at Sacramento last fall for $1500, finished the first 120 days of her official test with 12,040.07 pounds of milk or a trifle over 100 pounds a day. When she was started on test she was in poor physical condition, and besides pro-

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SWINE.

BIG TYPE POLAND CHINAS—Herd Sires—IOWA WONDER 188779; JOKER 238909. 50 sows bred to IOWA WONDER for early farrow; 50 gilts bred to JOKER for early summer farrow; 40 open gilts; 250 young gilts 5 to 6 months old; 250 young boars 5 to 6 months old; extra special prices. Every purchaser will be given a year's subscription to the "American Swineherd," special advocate of the Poland China; also a copy of the book, "Hand Book on the Sow," and a copy of the bok, "The Pig Feeders' Manual," three valuable premiums. The book, "The Hog Supreme, the Poland China," will be mailed free for the asking. Geo A. Smith, Corcoran, California.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—The Money Makers. Everything registered and cholera immune. Nothing to offer for immediate delivery. Sows now farrowing. The pigs from these sows will be ready to ship during late May and June. Am booking orders now for these. The offering represents the very best and most popular blue lines the breed produces. Sires and dams by Champions and Grand Champions. Let me have your orders early. C. B. Cunningham, Mills, Sacramento County, California.

THE MOST SUCCESSFUL SALE of thoroughbred Poland China hogs ever held in Kings county was held near Hardwick, April 27, 1916, owned by John M. Bernstein. 24 head consisting of young gilts and boars ranging from four months to one year old, averaged $32.81 each, and young gilt bringing $70. These pigs were sired by my famous herd boar "President No. 229941." I am now booking orders for the next farrow. John M. Bernstein, Hanford, Cal.

REGISTERED BIG TYPE POLAND CHINA SWINE—Blood lines and breeding strictly the best. My herd is nominated in California Futurity. For sale, very fine yearling past boar, price $50. Three strictly fancy young boars fit for service and some beautiful gilts, same breeding, $25 each, if taken at once. T. B. Spalding, Turlock.

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REGISTERED DUROC JERSEYS—Only 5 of our choicest Fall boars, the best of 110 head, and 12 gilts left to offer. Am booking orders for Spring pigs, representing the most noted families. Entire herd in class "A" condition. Breeding guaranteed. Prices reasonable. Haden Smith, Route 1, Box 97A, Woodland, Cal

REGISTERED DUROC-JERSEY — Weanlings, shoats gilts and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

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RANCHO RUBIUS DUROCS according to winnings at last State and World's Fairs, are best sows in the State. Weaned pigs, large litters, now ready. $15 either sex. Elmer Lamb, Ceres, Cal.

MAYFLOWER THOROUGHBRED STOCK FARM—80 Duroc Spring pigs. Fancy stock priced low. Bred sows for Fall farrow. Write for breeding and prices. John Kincaid, Bakersfield, Cal.

DUROC-JERSEYS—Some great weanlings of both sexes by "RIVER BEND HIGH MODEL." Improve your herd by introducing this blood. RIVER BEND FARM, St. Helena, Cal.

BLATCHFORD'S PIG MEAL weans easily and safely no trouble; no milk. Write for free folder, "The Safety Route from Pighood to Porkage," Coulson Co., Petaluma

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LARGE TYPE POLAND-CHINAS—Now booking orders for Spring pigs from our Nebraska prize-winning sows. H. I. Marsh, Route A, 348, Modesto.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale Stephen S. Day, Box 1140, Sacramento.

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REGISTERED POLAND-CHINA HOGS—J. W. Wakefield. Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Hanby, Lemoore Cal.

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REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

VANDERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller and Lux, Colony Farm, Dos Palos, Cal.

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REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

ducing heavily at the pail she has added over 300 pounds of flesh, which leads Mr. Gibson to hope for a wonderful yearly record.

SWINE AND SWINE BREEDERS.

Dr. B. J. Cady spoke on hog cholera at Thalheim recently.

The Tulare County Swine Raisers' Association reports steady growth.

A class for Dairy Shorthorns will be provided at the State Fair this year.

A. F. Roach of Los Angeles has 600 hogs doing well on alfalfa and rolled barley.

Miller and Lux have just bought the entire Berkshire herd of Sam Wright, Santa Rosa.

Geo. Showler of Colusa recently bought 150 hogs near Meridian at $7.40 for his butcher shop.

D. E. Betts of San Diego is well pleased with his half dozen Tamworth hogs in Imperial Valley and will give them more company.

The Merced County Swine Breeders' Association, has asked the supervisors to require licensing of all country dogs to prevent their carrying cholera.

Ray Ingram of Colusa County, 15 years old, bought a brood sow three years ago. Last fall he sold $100 worth and this spring $375 worth and has $70 worth left.

There is reported a mechanical process of refining and sterilizing hog cholera serum by which all bugs dead or alive are taken out of it, thus removing danger of infection.

A shipment of hogs and cattle from the Oregon Agricultural College recently brought a little better than the highest prevailing prices. They included 24 beef cattle and 91 hogs.

Recent additions to C. B. Cunningham's O. I. C. herd near Mills are: A bred sow, sired by Bobst Modelerhe by Modler and out of Viola, she by Sir Hannah; champion stock on both sides. She farrowed 8 pigs by Lenora's Chief, he by Elmo Chief, a three times grand champion. A bred sow sired by O. K. Mikado and out of Iowa Queen by O. K. Model and bred to Chief's Wonder. He by Joy Boy, by Chief Keokuk, by Wonder. Joy Boy, Chief Keokuk and Wonder are all Grand Champions. A fall gilt open, sired by Des Moines 2nd and out of Perfection Lady. Des Moines 2nd is a Wonder boar and Perfection Lady is from champion stock at the World's Fair at St. Louis.

BEEF CATTLE AND BREEDERS.

Chas. Monhikie of Bishop is successor to the Longley Ranch Co. with Polled Angus cattle.

Three shipments of two carloads each of steers were recently sent to San Francisco from Oakdale.

A carload of yearling steers from Burley, Idaho, sold at Portland, May 8, for $9.15, the highest yet for yearlings.

A plague of "rinderpest" is spreading among the cattle of the Philippines. Fifty towns in twelve provinces were already infected May 5th.

Two carloads of purebred bulls, seven jacks, and eight stallions were recently shipped from the San Joaquin Valley to Miller and Lux ranches near Winnemucca, Nevada.

The Tennessee Experiment Station is telling stock growers that a $125 bull will enable a farmer to sell a three-year steer for $20 more than a scrub from the same cow. At a recent meeting 40 purebred bulls were ordered.

MISCELLANEOUS.

Modesto is suggesting a desire for union stock yards.

F. J. Mendoza shipped 900 lambs from Maxwell to Chicago last week.

Sheep from the Stanford Vina ranch will soon be moved to Lassen county.

Belgian, Percheron, and Shire horses and mares will be shown at the Butte County Spring Exposition.

Additional tents have been secured for the livestock entries to the Spring Exposition, Chico, May 22-28. Entries have exceeded plans.

The Napa County Livestock Ass'n held its regular monthly meeting and luncheon May 6 at the Napa State Hospital, writes Owen Duffy, hospital business manager.

Six cars of sheep were sent to Chicago from Oakdale May 4. They were collected from the San Joaquin valley and were the first sent East from this point, in several years.

J. L. Murphy of Los Angeles is having two 156-ton silos put up on his ranch near Turlock. His foreman, J. Holgate, says he expects to try 20 acres of sudan grass for silage.

Control of rabid coyotes is made possible by the appropriation by Congress of $75,000. Five inspectors and 190 hunters are scouring the western states, so goodbye night music of the deserts!

If a cow is producing more than a pound of butter per day, good pasture should be supplemented with grain about 5 pounds daily for 1½ pound cows and 8 pounds daily for 2 pound cows according to the Mo. College of Agriculture.

The project is proposed in Australia of extracting lanoline directly from greasy wool. If all the wool were so treated, it would mean about $34,000,000 a year to Australia at the normal price of lanoline, which is 1-7 of the present price.

The unhappy bride threw her cake to the chickens. They died. The state food inspector found that it was not poisoned, but that salt had been used instead of sugar.

DAIRY CATTLE.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke Co., Lockeford, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

FOR SALE—Four full blood Holstein cows, 4 to 6 years old. One fresh, others freshen this month. R. S. Burrough, Cloverdale, Sonoma Co., Cal.

FRANK MEACHAM, Petaluma, California — Breeder Red Polled Cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

BREEDERS OF REGISTERED SHORTHORNS — Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

BULL CALVES from a grandson of Colantha Johanna Lad and from a son of King of the Pontiacs. J. W. Benoit, Route C, Modesto, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

HOLSTEIN BULLS out of A. R. O. cows, sired by a son of King of the Pontiacs. Prices reasonable. J. H. Harlan Co., Woodland, Cal.

REGISTERED HOLSTEINS—32 high-grade Holstein heifers coming fresh this Fall for sale. E. E. Freeman, Route B, Modesto, Cal.

ELEVEN REGISTERED HOLSTEIN COWS—Priced to sell as a bunch at very low figure. K. W. Abbott, Milpitas, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

REGISTERED JERSEY BULLS from Register of Merit cows. D. F. Conant, R. "B," Modesto.

AYRSHIRES—Registered: all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BREEDERS OF A. R. O. Holstein-Friesian cattle exclusively. Dirk Dairy Farm, Lemoore.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEYS — Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

BREEDER of Registered Holstein Cattle. Ernest Otto McClure, R. 2, Modesto, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernsey. Santa Cruz, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED HOLSTEINS—Golden West Herd. D. & H. Rowles, Modesto.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

SHEEP AND GOATS.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

THE BULLARD FLOCK RAMBOUILLETS—Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

KAUPKE BROS., WOODLAND, CAL.—Breeders and importers of Hampshire sheep.

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CHAS. KIMBLE—Breeder and Importer of Rambouillets, Hanford, Cal.

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REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

FOR TRADE—If you have young horses, mules, cattle, or land to trade for a young Jack, fully guaranteed, see James W. McCord, 508 N. Douty St., Hanford, Cal. Phone 471-J.

MISCELLANEOUS.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Coley Co., Inc., 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells live stock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

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ABSORBINE, JR., antiseptic liniment for mankind, reduces Strains, Painful, Knotted, Swollen Veins. Concentrated—only a few drops required at an application. Price $1 per bottle at dealers or delivered.
W. F. YOUNG, P.D.F., 86 Temple St., Springfield, Mass.

Grapewild Farms Berkshires
GRAND LEADER 2ND, No. 190,377. Winner of the Grand Championship at the Panama-Pacific International Exposition.
SIRE OF STAR LEADER, who won Junior Championship and Reserve Grand Championship at the same show.. STAR LEADER is now at the head of the CALIFORNIA UNIVERSITY FARM HERD at Davis.
GRAND LEADER 2ND is also sire of MAYHEWS LEADER 6th, a prize-winner at the P. P. I. E., of whom L. E. Frost, Editor of THE BERKSHIRE WORLD, said: "He is one of the best to be found in America and will, without question, make a great sire." This young boar now heads the herd of BUTTE CITY RANCH, one of the largest and best selected Berkshire herds on the Coast.
GRAND LEADER 2ND also won first and second with six of his daughters for Sire and his Get. This is the most highly valued of all the trophies to most breeders, and is particularly so where the sire wins Grand Championship honors. In this connection, Judge Scott, who judged the Berkshires, said: "The real test of a breeding boar is in the kind of off-spring he produces, and here are a lot of animals (speaking of the Get of Grand Leader 2nd) that are superior individuals, as like as peas and a wonderful demonstration of the ability of a great individual to reproduce himself."
After six years of careful breeding, during which time steady improvement in quality has been our aim, we now have 75 Brood Sows, rich in the blood of every famous Berkshire strain. With Grand Leader 2nd at the head of this herd, not only himself a Champion, but the sire of Champions, and with several other Boars of prize-winning strain, we believe we are in a position to give you the best to be had in Berkshires. Satisfaction guaranteed. Stock of all ages for sale.
GRAPEWILD FARMS, A. B. Humphrey, Prop.
ESCALON, SAN JOAQUIN CO., CAL.
(Escalon is 22 miles east of Stockton on the Santa Fe and also on the Tidewater Southern Rys. Autos take paved Mariposa Road out of Stockton, direct to Escalon.)

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Veterinary Queries and Replies.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for $1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

Querists will save time by referring to the indexes published in the last issues of June and December.

BOAR DOES NOT AFFECT LATER LITTERS.

To the Editor: Does a Duroc sow that has farrowed a litter from a black boar produce black spotted pigs in succeeding litters?—E. L., Ceres.

[The color of one litter will have no effect on the succeeding litters.]

DELAYED AFTERBIRTH.

To the Editor: What can I give a cow to make her clean well after calving? I have one which didn't lose the afterbirth for two days and she has gone down in milk flow.—C. E. T., Visalia.

[Give 2 lbs. Epsom salts for this trouble.]

MILK FOR MOTHERLESS COLT.

To the Editor: I am giving a new motherless colt a pint of cow's milk every three hours. It seems constipated. Am I giving it enough or should the milk be modified?—A. W. H., Newark.

[Modify the milk with 20 per cent water and enough sugar to sweeten.]

PIGS' EYES STICKY.

To the Editor: What causes pigs' eyes to glue together. They are about three weeks old and seem healthy. They choose to sleep outside. Only 7 out of 30 are affected. Greasing with vaseline does not help.—G. E. D., Marysville.

[Use a saturated solution Boric acid dropped in the eyes twice a day.]

HIP JOINT LOCKS.

To the Editor: When my cow walks, her hip seems to lock and she can't step until she has stepped backward, when she can go forward a few steps. After walking some distance she can walk without stopping. She seems healthy and has not been hurt. Gets worse since first noticed a year ago.—E. F. K., Fresno.

[By all means employ a veterinarian.]

MARE HAS SWELLING.

To the Editor: I have a mare 10 years old that will foal in a month. I noticed a swelling on the right side of her navel about as thick as your hand. In two or three days it had left the right side and was on the left and is about twice as big as it was. She is running out on pasture and this is her first colt.—H. W. W., Princeton.

[These swellings appear on mares heavy with foal. They disappear when the colt is born.]

CALF DYSENTERY.

To the Editor: A calf seemed very weak when born, breathing heavily with mouth open. Nose runs. Developed dysentery after 2nd day. Excretion slimy with some blood, sometimes watery, varying from yellow to olive color, and offensive. Seems sore to touch along the back and acts as though in pain at times. Let it suck twice per day now as it seems too weak to drink. Eats freely.—J. H. I., Ripon.

[Your calf has scours. Go to your druggist and have him order some serum and a syringe from the Cutter Laboratory and follow directions.]

MARE BLOATS ON ALFALFA —ALL RIGHT ON WHEAT.

To the Editor: I have a 10-year mare that seems to bloat and have a rumbling about the kidneys if I let her have alfalfa or barley hay or rolled barley. She strains to urinate. Has been so for two years. Now if I turn her onto wild grass she does the same. If I feed oats and wheat hay she is all right. She now has a cold; will it affect the colt? She keeps in good flesh.—E. V. F., Corning.

[Use the feeds that do not affect her. The colt will get along all right.]

PIGS BREATHED HARD.

To the Editor: Two hours after morning feeding a weanling pig was found stiff and stretched out on the ground, but living. Careful examination showed that the pig's jaws were closed very tightly as if affected by lockjaw. Jaws were pried open and the tongue pulled out as far as possible. The labored breathing which had been noticed from the beginning was not relieved. About two hours after finding the pig he was dead. What was the cause and is there any way of preventing it in other pigs? There were no apparent scratches to indicate that the pig had been exposed to lockjaw germs. A post-mortem examination was made—all parts looked perfectly healthy.—D. H. G., Lancaster.

[This was not lockjaw. The animal died of acute indigestion.]

VACCINATE FOR BLACKLEG.

To the Editor: I weaned thirty head of large calves last November and vaccinated them for blackleg. Some other calves around close were supposed to be dying from that disease. I fed these thirty calves alfalfa hay for six weeks and then changed them onto a grass pasture and in about a week three of them died about the same day. I did not lose any more until March 10 and then another one died the same way. They lose the use of one leg and froth at the mouth and die in 10 to 12 hours. When dead they swell quickly and the skin seems puffed and rattles when thumped with the fingers. Neighbors have lost several. Would you vaccinate these calves again?—J. A. B., Woodlake.

[This is blackleg. Revaccinate the calves.]

HORSES DROOPY — SWELLINGS UNDERNEATH.

To the Editor: Four or five horses in good condition on pasture have first gotten droopy and at the same time two swellings run lengthwise one on each side of the center line of the belly. In a few days the swellings work forward and unite; appearing on the chest, but not between or in front of the front legs. When the swellings were punctured a waterish yellow matter would run out. By rubbing with turpentine or sheep dip we bring the swellings down and the animal gets well in 3 or 4 weeks.—A. W., Olancha.

[This is a form of forage poison caused by some plant in the pasture. Give a large dose of Epsom salts, 2 lbs. dissolved in 1 gallon of hot water.]

The war between cattle and sheep men is not yet over. Raiders in Colorado recently shot 100 sheep said to be purebreds.

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All young cattle and most of the cows were sired by Registered Holstein Bulls.
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The Geo. A. Smith herd of grade cattle will be sold on Wednesday, May 17, at his Home Ranch, two miles south of Corcoran, and will consist of

60 high-grade heavy producing cows.
50 2-year-old heifers, coming fresh soon.
80 yearling heifers, many of them bred.
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28 steers from 2 months to one year old.
10 extra high-bred young Registered Holstein Bulls ready for service.

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Swine Breeders to Promote Industry.

[Written for Pacific Rural Press.]

The semi-annual meeting of the California Swine Breeders' Ass'n, held at the University Farm, Davis, May 6, was one of the most important ever held. Final steps were taken towards the promotion of the swine growing industry of the State on a much larger and more comprehensive basis than has ever before been possible.

This will result from an arrangement which has been made with D. O. Lively of San Francisco, who will immediately start a publicity campaign through the press, the local Chambers of Commerce over the State, and by co-operation with merchants and bankers. Mr. Lively will also co-operate with the U. S. Dept. of Agriculture and the University of California in the promotion of Boys' Pig Clubs; and will endeavor to better the marketing conditions that have faced the producer of good hogs in the past.

All of these have been under consideration by the directors of the association for some time as a means toward "More and Better Hogs." With an experienced man in charge of the work, many of the producing and marketing conditions which have heretofore been stumbling-blocks will doubtless be overcome.

An interesting and instructive program was provided by various speakers. W. Bernstein of Hanford read a paper on the value of a brood sow. It is Mr. Bernstein's belief that hog raising is a most profitable occupation for the man who is willing to work, especially if he does not try to operate on too large a scale. If he does operate on a large scale, he must pursue sanitary methods.

Mr. Bernstein was most emphatic in his belief that few men realize the true value of the good brood sow and quoted experiences at length as to what a good sow is capable of producing.

W. Hough, of the Western Meat Co., of San Francisco, spoke on the requirements of the packers, giving it as his belief that the acorn hog is the only real undesirable hog that is being raised in California; although he states that it is with great difficulty that the packer is able to get enough packing hogs at all times of the year. Mr. Hough stated that the big run of hogs in California comes in the fall of the year, after the grain has been harvested. At this time of year the packer's facilities are strained in caring for the supply.

Mr. Lively addressed the meeting on the manner in which the hog-growing industry in this State should be enlarged, stating that $75,000,000 worth of pork could be easily produced each year in the State, if our farms were producing the maximum instead of the minimum as at present.

Prof. Thompson, of the University told the members why the University believed in exhibiting their hogs at the various fairs, saying in part that University efforts in pure-bred breeding are for educational purposes, rather than commercial and that the show ring is undoubtedly of great educational value to students as well as farmers.

A committee was appointed to work out the various phases of the Boys' Pig Clubs in the State in order that the association might co-operate in their advancement. This committee was composed of D. O. Lively, H. L. Murphy, C. B. Cunningham, Wm. Bernstein, J. K. Fraser, and R. R. Ingals. This committee will report at the swine sale which is to be held at Chico the latter part of May.

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Holstein Cattle
Polled Angus Cattle
Duroc Jersey Hogs

Tagus Switch, Tulare Co., Cal.

MAKES CHEESE TO SELL.

[Written for Pacific Rural Press.]

R. Donomegoni, a pioneer Swiss cheese maker of El Centro, Imperial county, is getting 1200 pounds of cheese each week from 50 cows and an over-run of 20 to 30 pounds in cold weather.

"Most of my neighbors," says Mr. Donomegoni, "are selling cream, but I never could figure things that way. It takes 3½ gallons of milk on the average to make one pound of butterfat, which is now worth 30c. Three and one-half gallons of milk make a good 3 pounds of cheese, which brings me net 16 cents or more, or 48 cents instead of 30, had I sold to the creamery.

"My cows are mostly Holsteins; the bull and several cows are registered stock. My aim is to breed up a registered herd. My last year's record shows an average of $10 a month for each cow milked, including the strippers. Most of my cheese I am shipping to Swift & Co."

CITY MAN WANTS DAIRY INFORMATION.

To the Editor: What are dairymen throughout the country receiving for their milk per hundred pounds from the different milk concerns in San Francisco? Also would like to know the per cent of butterfat in a hundred pounds of milk and at the present time the price of butterfat.—H. L. S., San Francisco.

[The prices dairymen are receiving for sweet milk for delivery in San Francisco vary from 12½c to 15¾c per gallon. Of course, this does not apply to certified milk. The actual net returns to the dairyman depend largely on his location, because of the difference in the express rates.

The percentage of butterfat in 100 pounds of milk varies so greatly that no definite figures can be set, but the requirements in San Francisco are for a 3.6 per cent milk. That means that there are 3.6 pounds of butterfat in each 100 pounds of milk. Generally speaking, the Holsteins produce about a 3.6 per cent milk; the Guernseys, a trifle over 4 per cent; and the Jerseys, something over 5 per cent. However, these are only average figures and cannot be applied to any single individual.]

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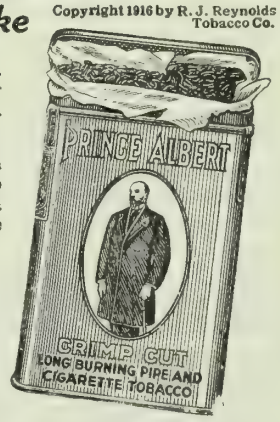
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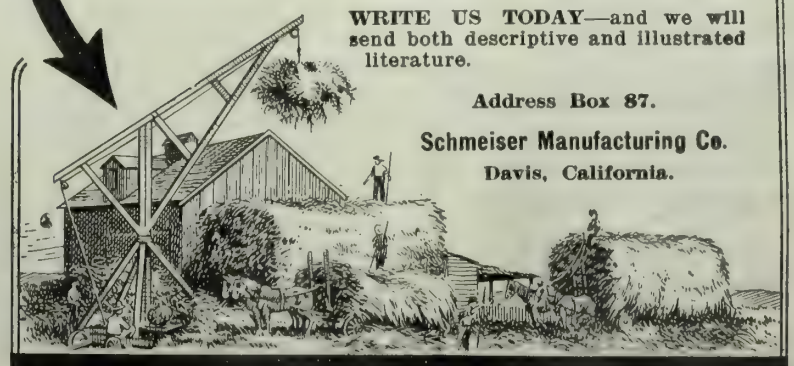
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CARE OF GROWING STOCK IN WARM WEATHER.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

What future a hen has before her depends on the care she has during warm summer days.

The first care for growing stock in summer is to feed them properly, according to the weather. Not so much heating food because it is not needed, not so much fattening food because what growing stock needs is bone and muscle. Bone and muscle come chiefly from the mineral world. Minerals are found in all vegetables and also in all cereals.

Oats are one of the greatest bone making foods we have and if the fibre is softened by soaking and sprouting there is no other daily feed equal to them. This is so because the hull, which contains more fibre than anything else, is so softened by sprouting that the growing chick eats it readily and it acts as a filler and carrier for the other feeds which are more concentrated in form, and without which a growing chick would eat its head off and yet not be contented.

If a chicken does not have the fullness its nature calls for, it does not grow, and its feathers look rough and coarse.

Sprouted oats, all kinds of tender green feed, wheat bran, bone, milk, and beef scrap all abound in mineral matter and should be fed to growing stock in a proper ratio to the carbonaceous foods.

During the hot days of June, July, and August, it is better to go easy on corn meal and white middlings, and use instead brown midds or shorts, ground barley, and oats with bran.

Milk in quantity almost serves the place of three other elements in the food and is the best substitute known for green feed. So in proportion to your supply of greed feed, the milk can be fed to growing stock as it is both feed and drink.

Don't feed too much mash. While a little mash is certainly good because it is so easy to digest, if growing stock are fed too much soft food the gizzard will have nothing to operate on and the natural healthy organs will get out of use. The gizzard is a chicken's teeth and it should always be furnished with working material to give it exercise. Soft feed does not do this, but sprouted oats does and so do all forms of grai , bone, etc.

Water.—Never allow the water to stand in the sun during the heat of the day; if there is no natural shade, provide some, if it is but a box to cover the water vessel. Flies deposit their eggs around dirty fountains and the chickens eat them and thousands of worms find a breeding ground in the chickens' intestines.

It is always better to feed and water in the early morning, while it is yet cool; then the chickens can get what they need and seek the cool, shady places during the heat of the day. No matter how many times they have been fed they soon fall into the twice-a-day plan, because they really don't care to eat in the heated hours.

Shade.—Provide some sort of shade that keeps off the hottest of the sun's rays a part of the day. The price of gunny sacks will soon make them prohibitive as a chick shade, but we will no doubt find a substitute.

See that there is plenty of fresh air but no cracks or drafts in the sleeping quarters. The doses of fresh air that creep through them are usually mixed with malice for chicks and owner. Tight back and ends and open front are good for all kinds of growing stock and matured hens, too, but a little too airy for baby chicks.

Room.—The next care for growing stock is to be sure to remember that they are "growing." The space they formerly occupied in brooder or house must be doubled. This is one of the mistakes most people make and pay for: they will forget that chicks grow, and in doing so must have more room. Make your calculations for that when you hatch. Have room enough to give the growing stock plenty of breathing space on the perches, in the weaning pens and in the brood coops. This is the only way to have a good healthy flock that does not show a lot of runts. Weed out the very big ones.

GREENS FOR POULTRY.

[By Susan Swaysgood.]

Beets are a good dry-weather green crop. Beet seed may be soaked in warm water twelve or fourteen hours and then sowed in rows already prepared as above and they will germinate quickly; where if sowed dry, they are rather slow to germinate. Press the soil close to the seed as that holds the moisture and nature can work better. All kinds of beets are good for poultry of all kinds. For the molting hens they are one of the best feeds; they are succulent and satisfying and therefore save grain. For hens I always split in two and lay in yards split side up, until the hens get to know they are good; then they do the work themselves without any invitation. Chickens are always a little shy of new kinds of feed so if they don't rush at a thing some people will decide that their hens will not eat this or that. Give them time and they will come to it.

Another thing that gives an enormous lot of green feed for the trouble is to sow radish seed rather thick, the giant white Stuttgart, or the white Chinese are summer kinds that grow immense roots and tops both, and chickens are very fond of them. The roots go deep in the ground and find water for themselves. When gathering take a pick or stout hoe along to loosen the soil.

HATCHING WINTER LAYERS; BREEDING AGE.

[Answered by Susan Swaysgood.]

Questions interest everybody, therefore don't fail to read this page because if you do not need it now, you may at some future time. A question that comes very often is, "When is the best time to hatch for winter layers?"

Chicks from all the small breeds, when properly fed and cared for, should lay at five months old. All chicks of these breeds that are hatched during April and May, cost less to raise, are easier to manage and will commence to lay the latter part of August and early September when eggs are just commencing to go up.

All fowls, irrespective of breed, should be of full maturity and size. The young fowls will breed, certainly, but the chicks will never be so strong nor have the vitality to resist disease as chicks from older birds, nor will they ever be quite so large. A chick hatched from a two-year-old hen is better fitted for the struggle in life than a chick hatched from a yearling hen, and not less than a yearling should ever be permitted in a breeding pen.

Turkey Troubles.—My little turkeys have yellow substance in the mouth and throat. A neighbor told me to wash it out with peroxide. Is that right?

Entirely so for small turks or chicks, but if you make a swab of clean cotton on a small pointed stick and swab the throat and mouth well it would do better. I would use full strength as the druggist dilutes it enough, and it requires strong things to kill canker.

The exact earning capacity of the average hen has never been fully determined; as in all other lines of business, the results depend principally upon the knowledge and attention of the owner.

CHICKS DIE IN SHELL.

To the Editor: In trying to hatch eggs with hens, the chicks die in the shell. The hens set well.—A. R., Bowie, Ariz.

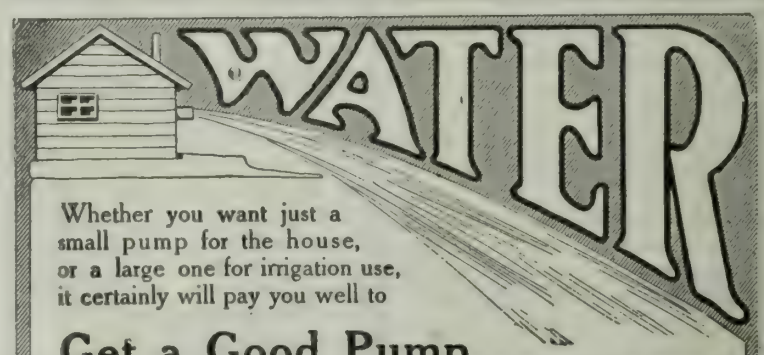
[Perhaps in your climate the eggs dry out too much, the inside skin getting tough, and the pores closed to the passage of air. Perhaps the eggs are weakened by use of too many hens per rooster, or by forcing the hens to lay too heavily, or by allowing hens to get too fat.—Editors.]

The farmer's family, of all the people in the world, are best fitted in every way for profitable poultry culture.

Disease is seldom thought of until it makes its appearance in the poultry yard. It is a wise plan to be prepared for emergencies, thus heading off an epidemic.

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CHICKENS AND STOCK EAT SPINELESS CACTUS.

Referring to your article on spineless cactus in the April 8th issue I can add that during January I had occasion to examine a farm at Ora Loma, a few miles south of Dos Palos and I found the owner feeding his dairy stock spineless cactus. He told me that when he first offered it to the cows they would not touch it, so he cut it up and mixed it with bran. They soon began to like it until now they eat it freely without being cut up or mixed. He considered the cactus a very satisfactory feed, especially in winter, and a very cheap one as the plants grow with practically no attention and multiply rapidly.

I had some twenty plants growing in my back yard. Last spring I fenced that part of the yard and used it as chicken run. At first the hens did not bother the cactus, but as summer came on and green stuff became scarce, they started pecking at the smaller slabs and finally ate up all of the plants to the roots.

Fresno. A. W. Percival.

CHICKS WITH GOUT.

To the Editor: I have some small chicks whose legs and feet are badly swollen, white spots appearing upon the feet, and their combs are black. —W. H. H., Byron.

[Answered by Geo. H. Croley.]

Your chicks have articular gout, which is caused by a diet too rich in protein—feeding too much meat, especially beef liver. Give one dose Epsom salts (two teaspoonfuls to each dozen chicks). The following day put one-half teaspoonful common baking soda in quart of water and give to chicks. Rub affected joints with camphorated or carbolic ointment. Reduce amount of meat and greatly increase amount of green food. Continue treatment until symptoms disappear. There is also another kind of gout called visceral gout, but the only symptoms shown by affected birds is loss of weight and slight yellowish tinge to the skin, comb, and wattles.]

Light unfavorably affects eggs in the incubator. If the machine has a glass door, hang a cloth curtain over it.

GOOD BYE! MorningGlory

Don't let this troublesome weed sap your soil and ruin your crop.

NONPAREIL

is the one sure exterminator that does the work without injury to the ground. Read what Luther Burbank says:

"We find that Nonpareil destroys not only morning glory but also horse-radish. We consider it a thoroughly satisfactory weed exterminator"—Luther Burbank.

One gallon of Nonpareil is sufficient to kill 250 plants. It does not prevent the ground from producing regular crops. It acts as a tonic to the soil. It is easy to apply and economical to use. Write today for interesting folder on this profit saver.

Wheeler Reynolds & Stauffer
625 California Street
San Francisco, California

GOOD LUCK WITH CHICKS.

[Written for Pacific Rural Press.]

Healthy eggs make healthy chicks, which do not die off while growing, thinks H. J. Hennings of Los Angeles county, who pointed to 200 incubator chicks two weeks old, of which none had died and all were happy.

No Roosters are kept in the laying pens. Four breeding pens of 20 hens each are fed so as not to force the production of weakened eggs, though in March they were averaging over 60 eggs per day. A 500-egg incubator in an incubator cellar will be supplemented by another, because heretofore Mr. Hennings has had to sell half of the hatching eggs every 10 or 12 days for lack of equipment. This will permit his treasured plan of having three houses for 1000 hens each, with pens on both sides of each house, so the present system of alternating green stuff can be continued. Hens are sold at three years of age.

Brooder House. — The brooder house has two compartments for 500 chicks each. It is warmed most economically. A lamp in the center of one side next to the alleyway burns a gallon of distillate per day. The fumes and burned air from the flame pass upward two feet through a pipe and then vertically both directions through the brooders; thence through an extra brooder outside each end of this building in which the older chicks are kept for a while. By that time all the heat has been used for the chicks. Around this pipe and around the burner, leaving an air space, is an asbestos jacket, through which fresh air is drawn upward as it is heated around the burner. This pure warmed air is led to the center of each compartment and released under a hinged platform which can be raised or lowered and where chicks can get warmer when they wish.

No Toe Picking. — The balanced feed, plenty of light, and scratch litter are held responsible for lack of toe picking, but if for any reason a chick gets off feed, it is put into a hospital cage over the burner. A thermometer and removable supports enable this to be adjusted at varying heights to keep the desired temperature.

Three fruit trees in each of the small yards provide shade outside the houses, and underground pipes supply constantly dripping faucets as well as the sprinklers which are attached to outlet pipes and soak the ground sufficiently in an hour for the new green crop.

Raising vegetables and green stuff among fruit trees is the practice of E. H. Cowell on three acres in Los Angeles county. He expects to handle 2000 hens.

Fowls which have once had a severe sickness should never be used in the breeding pen.

Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

YOU'LL GET EGGS from stock purchased here. All tested by Hogan system for egg-laying qualities. Butcher gets all testing less than 125 eggs per year capacity. Going to breed Reds exclusively. Have some good White Leghorn and Barred Rocks, yearling and two-year-olds, will sell reasonable. Get busy. Write today. C. W. Hinrich, Palmdale, Cal.

BABY CHICKS—Strong and healthy, from high-bred free-range White Leghorn stock. Prices on application. Western Hatchery, W. S. Waldorf, Petaluma, Cal.

NOT TOO LATE for chicks if you get our White Orpingtons, trapnested and bred for early maturity as well as heavy laying. Begin laying at five months, just when eggs are highest. Baby chicks and hatching eggs for sale from 1000 grand range-raised birds known throughout the West as big money-makers. Prices reasonable. Catalog free. WHITTEN RANCH, R. D. 5, Box 647, Los Angeles.

LIVABLE BABY CHICKS—We are supplied by reliable Breeders and experienced hatchers. Better chicks cannot be had from any source. All varieties, any number. High quality birds, bargain prices, laying hens and pullets. Free exhibit. Everything in Poultry, Pigeons, Rabbits, Dogs, Cats, Canaries, Pets. Give us a call or write. Fancier's Exchange, 642 S. Main St., Los Angeles, Cal.

WYANDOTTES—Beautiful, useful and profitable. Best for showing; best for egg-laying; best for table. Largest Wyandotte Farm in the Southwest and the only complete family of Wyandottes known. Eleven varieties and each from the finest strain bred in the United States. Hatching eggs and baby chicks reasonable. Write us for full particulars. VILLA WYANDOTTE FARM, Villa Road, Lamanda Park, Cal.

ALL OUR PURE-BRED CHICKS from Hoganized, trapnested flocks, have been reduced in price. Barred Rocks, Rhode Island Reds, Black and White Minorcas and Anconas, 12½c each. 1 or 1000. Brown Leghorn, 10c each, $9 for 100; White Leghorns, 9c each, $7.50 for 100. Brown's Poultry Yards, 2550 San Pablo Ave. Phone Oak 2183, Oakland.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired Heavy Winter Layers. W. C. Smith, Prop., Corning, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396, Los Gatos, Cal.

MAY CHICKS—Our utility breeds, R. I. Reds, Barred Rocks, Black Minorcas, White, Brown Leghorns by the dozen, hundred, thousand—at prices that mean business. Send card for special circular and offer. Will save you money. Roofden Poultry Ranch, Campbell, Cal.

STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

BABY CHICKS—We will hatch during May and June, so order now and get them when you want them. All good strong youngsters from good layers. White and Brown Leghorns, Barred Rocks, R. I. Reds and Black Minorcas. Campbell Poultry Ranch, Campbell, Cal.

PLACE YOUR ORDER NOW for May delivery of White Leghorn chix from Jackman's pure-bred, heavy-egg producers. You get the best at lowest price. $7 to $8 per hundred. Special low prices in large lots. Sunnyside Poultry Farm, Route 2, 1610 Vine St., Sacramento, Cal.

EGGS FOR HATCHING—True-to-type Barred Rocks of a first-class utility strain. Large birds bred to lay $1.25 per 15; $6.50 per 100, charges prepaid and safe delivery guaranteed. G. L. Horine, Box 52, Winton, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., INC., Poultry Supplies, San Francisco.

INCUBATOR CHICKS—White Plymouth Rock, White and Brown Leghorn. Highest class of stock bred to standard and to lay. If you are interested in the best send for catalogue. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

BUFF ORPINGTONS; BUFF LEGHORNS; BOURBON RED TURKEYS; BUFF DUCKS—Summer sale of high-grade breeding stock and hatching eggs. Send for price list. The Ferris Ranch, Route 2, 144D, Pomona, Cal.

THOROUGHBRED HATCHING EGGS—Barred Rock, R. I. Reds, Buff Minorcas, White Rocks, Blue Andalusians, India Runner Ducks. Ducklings and breeders on sale. Cedarhurst Ranches, R. D. 2, Sacramento.

CHICKS!! Day-old chicks from my healthy vigorous, heavy-laying, free-range stock of Hoganized S. C. White Leghorns. Price, $7 per 100. H. P. Hansen, Route 4, Box 177, Petaluma, Cal.

WHITE LEGHORN CHICK BARGAIN!. 1000, $70. 100 lots $8 express paid. First-class Hoganized yearling breeding stock. First-class chicks. Rinconada Poultry Ranch, Campbell, Cal.

BUFF ORPINGTONS—Eggs from high-class matings that have correct color, shape and large size. Choice exhibition and utility stock for sale. No chicks. E. J. TALBOTT, San Mateo.

PLACE YOUR ORDERS with the SANTA CLARA HATCHERY for the different breeds of baby chicks and baby ducks. Joseph A. Bihn, Prop., San Jose, Cal., Route 6, Box 336C.

ORPINGTONS—BUFF AND WHITE—Black Minorcas and Carneaux pigeons. Breeding stock at half price as I am selling out. Mrs. Susan Swaysgood, Route 2, Pomona, Cal.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized, heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorcas, White Leghorn, stock specialties. Free instruction on raising chicks. Hicks Jubilee Hatchery, Petaluma.

RHODE ISLAND REDS—Blue Ribbon winners. Hatching eggs and baby chicks. Breeding stock at reduced prices. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

WHITE ORPINGTONS AND BUTTERCUPS—Hoganized and Tested—220 egg strain breeders. Chicks and eggs for sale. M. S. Woodhams, San Mateo, Cal.

HERE IT IS—White Rock baby chicks. $15 per 100. Hatching eggs, $1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ceres, Cal.

BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trapnested stock Fairmead Poultry Farm, Fairmead, Cal.

BLACK MINORCA, BUFF ORPINGTON, R. I. Reds eggs for hatching. Also cockerels for sale. Mrs. E. A. Holdridge, Box 282, Dixon, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and cockerels. B. C. Quessenberry, R. 4, Lodi, Cal.

RHODE ISLAND RED BABY CHICKS and Eggs Heavy laying strain. Send for circular. Rosedale Ranch, R. 1, Hayward, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs $2 to $5. Chicks, pullets, cockerels. R. W. Stawetski, Route 2, San Jose, Cal.

TRAPNESTED LEGHORNS—White and Buff Stock Eggs, chickens. Arthur R. Schroeder, Box 179B, Mountain View, Cal.

BARRED ROCK AND R. I. RED CHICKS—$11 per 100. Good chicks. Safe delivery. G. L. Hawley, Madera, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

TURKEYS, DUCKS AND GEESE.

BUFF DUCKS—Weigh like a Pekin and lay like a Runner. Winners at Panama-Pacific and Los Angeles. One Blue Ribbon Duck has missed laying large, white-shelled eggs but six days in seven consecutive months. Eggs, $2 per 12, $3.50 per 25. Baby Ducks—$4 per 12, $7.50 per 25. Summer sale of breeding stock. Send for price list. The Ferris Ranch, Route 2, 144D, Pomona, Cal.

BOURBON RED TURKEYS—The best Bourbons west of the Rockies. Four firsts on males at Panama-Pacific and Los Angeles, 1916. Eggs from large, dark, free-range hens mated to 1st Los Angeles old Tom, $3 per 12, $5.50 per 25. Summer sale on hens bred to old Tom. Send for price list. The Ferris Ranch, Route 2, 144D, Pomona, Cal.

HART'S BRONZE Turkeys — Vigorous young stock. Eggs by the setting or incubator lots. Circulars free. Albert M. Hart, Clements, Cal.

PEKIN DUCK EGGS for hatching, $1.00 per dozen. L. D. Collins, R. F. D., 54G, Denair, Cal.

PHEASANTS—Golden and Ringneck. Eggs from April on. T. D. Morris, Agua Caliente, Cal.

HARES AND RABBITS.

LEADING RABBITRY IN AMERICA—Flemish Giants and New Zealands. Cut your living expenses. Catalogue free. Empire Rabbitry, Empire, Cal.

BELGIAN HARES—Young stock for sale. Hurd Bros., St. Helena, Cal.

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WHITE and BROWN LEGHORN and BLACK MINORCA chicks at reduced prices. Selected layers and strong chicks. Write today. I guarantee satisfaction. JAMES D. YATES, Poultry Judge, Modesto, Cal.

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Globe Mills, 913 E. Third St. Los Angeles.

The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER

My dear Friends:

Now that Easter is past, those of us who do not buy at the very first of the season, can buy many things in the clothing line at quite a considerable saving. Millinery especially is very much reduced, while novelty suits and waists are also marked down. This is the beginning of the clearance sales that practically all of the stores have, covering all the departments, sometime during the spring and summer.

Those of you who can arrange to spend a week or two away from home and come to the bay section will not only be assured of a cool welcome as far as the weather is concerned, but you will find it a very good time of year to shop to advantage.

The big dry goods stores have in July their white sales when you can buy table linen, towels, bed linen, bedspreads and the like at prices well below what we usually pay.

The china houses have clearance sales in dishes, glasses, statuary, clocks, lamps and many other useful and ornamental articles, while at the same time the furniture houses are making radical reductions in lace curtains, rugs, bedroom sets and all lines of furniture.

All of the better-class stores in San Francisco (and this is true of any city) are careful to not misrepresent their goods and you will find them courteous to do business with and anxious to please you. If you think you might like to order articles after your return home, if you bring in references, the privilege of credit will be extended. In most of the dry goods stores there are clerks whose business it is to fill the orders of out-of-town customers and great care is taken with those orders. Yours devotedly, **Rosabella Best.**

JAM SHORTCAKE.

For an emergency dessert or a dessert for a busy day the jam shortcake has no equal. It is simple, and within the possibility of any country housekeeper. The jam is put up at convenient times, and is on hand each month in the year in all well-ordered households.

Strawberry Shortcake.—Make a nice biscuit dough with one quart of flour, two heaping tablespoons of butter, pinch of salt and two teaspoons of baking powder. Mix well and add enough sweet milk to make a stiff dough. Roll out and with a large biscuit cutter cut a biscuit for each person. Bake as you would ordinary biscuits, and when done split and butter liberally. Cover the lower layer with thick strawberry jam and put on the top. Add more jam on top or at the side and heap with whipped cream. Serve at once.

Boy (in library): "I want to get Louisa Alcott's Jewish book." Librarian: "What? I never heard that she wrote a Jewish book. Haven't you made a mistake?" Boy: "No'm. She wrote one. My sister told me to get it. The name of it is—lemme see—it's 'Rosenbloom.'" — Boston Transcript.

GOOD LEMON IDEAS.

Lamb chops, dipped in lemon juice before cooking, are delicious.

Add 1 teaspoonful lemon juice to each quart of water while boiling rice. The rice will be very white and each grain separate.

To keep lemons, put them in water and change the water once a week. This way they will keep a long time.

In cherry or strawberry jelly, add the juice of one lemon to four cups of fruit juice. This makes the jelly firm and gives an excellent flavor.

MENACE OF THE FLY.

Prof. Hermes of the University of California, in a lecture on the fly, has the following suggestions as to its extermination:

The common house fly is one of the most dangerous bearers of disease in the home. It carries disease by habit, as its stomach is a bacteriological incubator and even if the fly is not infected, it carries vile dirt on its feet. Consider where the fly breeds and try to control it there.

From experiment, 900 thousand flies breed from a ton of manure in four days. It also has been proven that 95 per cent of the flies breed from fecal matter of horses and the other 5 per cent in garbage. How much easier it would be to control the fly question through breeding places than to attempt to kill them as they fly about.

A scientific and easy method of control would be to have a closed manure bin with small opening, in a dark place of the barn, so that flies would not lay eggs in the warm moist manure, an ideal breeding place. Also raise the bin from the ground on low stilts that rats will not breed below it. The manure can be removed when necessary and the fly is cheated out of a place wherein to breed.

Another method is to spread the manure out to dry in the sun. This assures no flies, but also spoils the manure for a fertilizer.

There are chemicals which kill the fly maggots, but these chemicals have to be applied every day, are expensive and also spoil the manure as a fertilizer. These chemicals are stomach poisons, so if the flies lived, human beings would run the risk of being poisoned too.

Better than fly paper and patent preparations for use in the house is a 2 per cent solution of formaldehyde, sweetened and set around in saucers. The fly drinking such a solution dies, but is disinfected and as it is said, "It is better to have a clean, dead fly in one's flood, than a dirty, live one walking on it."

FRUIT JUICE FOR JELLY-MAKING.

Cook fruit slowly, using a quart of water to a gallon of fruit. When fruit is soft, strain through a jelly bag. (Flannel bag makes a clearer jelly.) Return strained fruit to the stove, and heat to the boiling point and skim well. Sterilize jars, tops and rubbers and fill up as for canning fruit. When wanted for jelly open and proceed as usual, adding the sugar. In this country the juice will keep for years this way.

Domestic science is domestic sense.

TO WASH A WOOL SHAWL.

Make a warm suds of pure soap. Press the shawl down into this firmly and let it soak for 15 minutes; then putting your hands down under the water, squeeze the shawl, never lifting it out of the suds. When the suds looks dirty, squeeze the shawl into a ball, still under water, and wash again in more clean suds. Rinse well in water of the same temperature, being careful never to lift the shawl. In this way, it will not stretch. Spread the shawl carefully on a sheet on the grass, as it dries shake it occasionally; if fringed, pull the fringes apart. The shawl will be as soft and fluffy as when new.

DYE FOR WAISTS.

If you have a flesh-colored crepe-de-chine waist that you wish to restore to its former color, try rinsing it in cold water to which has been added a drop or two of red ink, or what is thought still better a small piece of red crepe paper. This should be done after the waist has been washed and rinsed very thoroughly.

THE DOCTOR KEPT HIS WORD

Mr. Newman had just recovered from an operation and was talking to a friend. "The surgeon," he remarked, "said he'd have me on my feet again in three weeks."

"Well, he did it, didn't he?" asked the friend.

"He did, indeed," responded Mr. Newman. "I had to sell my motor car to pay his bill."

A long-suffering traveler on a single-track railroad ventured to complain of the exasperating unpunctuality of the service. The employee remonstrated in virtuous indignation. "I've been on this line now upward of eight years"— he began. "Have you, indeed?" interrupted the other, sympathetically. "At what station did you get on?" The attendant did not pursue the subject.

Salsoda dissolved in boiling water is useful to cleanse and disinfect poultry drinking vessels, etc.

DO YOU KNOW THAT

Walking is the best exercise—and the cheapest?

A little cough is frequently the warning signal of tuberculosis?

Bad teeth and bad tonsils may be the cause of rheumatism?

Unpasteurized milk frequently spreads disease?

The air-tight dwelling leads but to the grave?

FLORAL DEPARTMENT.

[By Geo. N. Tyler.]

Asters should be in strong growing condition now. Give them abundance of water.

Roses have made their first crop. Prune them back—that is, if you have not cut your flowers with long stems; they should be cut back to two eyes of this year's growth. Cut out all blind and weak wood. You can put in cuttings this month of two to three eyes of the half-ripened flowering wood; make a clean cut just below an eye with a sharp knife; pruning shears bruise the bark. Plant in sharp sand or in sandy soil in a shady, sheltered spot; keep them soaked and they will root in about four weeks. If not planted too close, and in too shady a place you can let them stay till early winter and then plant into their permanent beds. I like sharp sand to root them in, and as soon as they have formed callous, I pot them in 3-inch pots, and after growth starts I plunge pots and all into the soil, in a partially shaded location where they are sheltered from the late afternoon sun. I also mulch them with straw manure or leaves, and keep them well watered; these will make fine blooming plants next spring.

Flower Fertilizer.—A fertilizer, or liquid manure, that I have used with success in growing exhibition flowers for the last twenty years is as follows: Take one bushel, or a 40-lb. fruit box of the filings and parings from horses' hoofs—which any blacksmith will save for you—put them in a fifty gallon barrel, fill up with water and let stand for ten days, when it is ready for use. It is not only a fertilizer but a plant food. It brings out the dark glossy green foliage, and brightens the colors in flowering plants. It does not hurt the foliage if any gets on; you can water with it every day for a short time and if you discontinue the use of it there is no effect on the plants—they do not go back. You can grow plants in smaller pots. It is a safe stimulant for ferns of all kinds and makes the foliage a deep glossy green. You can empty the barrel one day, fill it up with water, stir it up, and the following day it is ready for use again. It acts marvelously on mums, pansies, asters, roses and almost any variety of plant, but with all its good qualities it has one bad one and that is its odor.

Another fertilizer that is fine for lawns is as follows: Take one box of fresh chicken droppings to five of sand or fine sediment soil, mix thoroughly and wet down. Keep turning it over every other day for about two weeks when it is ready for use. The sand absorbs all the fertilizing properties of the chicken manure. Give your lawns a dressing with this mixture, about three quarters of an inch thick. After watering you will see the immediate effect both in the growth and color. Give one-half inch on the second application, which should be in about three months, or sooner if the lawn begins to get light colored.

A SMALL BOY'S PROBLEM.

I wonder how I'd like it,
And I wonder who I'd be,
Supposing I was somebody else,
And somebody else was me!
I wonder, I just wonder,
What boy I'd like to be,—
Supposing I didn't like him
When I found that he was me!
—St. Nicholas.

A QUEER PLAYHOUSE.

By Bertha Gerneaux Woods.

Bess and Judy had had a busy morning, decorating the little house they had built under the trees. The big boy next door had helped them in the making of the house, which was shaped like a cone or an Indian's wigwam, round at the base and coming to a point at the top. It was built of long, dry, slender branches, the little twigs meeting and interlocking to form a support for autumn leaves and carefully cut strips of moss. Have you children ever made such a house? It is great fun, and I would advise you to try it if you never have, and you will enjoy it as much as Bess and Judy did.

"Aren't these clam-shells pretty?" Judy asked. "We'll play they're our best set of dishes, our blue-banded set, and this is our common, every-day set," and she pointed to a collection of cracked and nicked china which had been the cook's contribution to their housekeeping.

"Yes, it's all so nice," Bess said with a big sigh of happiness.

"Where'll we put the peacock feather?" Judy inquired. "Over the doorway?"

"Yes; that'll be a nice place for it."

"Well! Well! Well!" There was Uncle Jack stooping his tall form to peer in at the doorway. "I didn't expect to find two little bower-birds on this side of the water; no, I didn't."

"What do you mean, Uncle Jack?" Judy and Bess both wriggled through the low doorway, to come out into the open where they could talk comfortably to this nice uncle who had come home only the week before from a long stay in Australia."

"What do you mean by bower-birds?" Judy asked with a happy little smile, for it sounded as if a story was coming.

"Well," Uncle Jack said, and settled himself comfortably on the grass, "out in Australia there are some very queer birds that make playhouses and fit them up with bright-colored things for ornaments, just as you children are doing. They are called bower-birds because they build in this way, and they belong to the bird of Paradise family, though their feathers are dark and plain, and not beautiful like the bird of Paradise we know from pictures and out at the Zoo. Perhaps if they wore bright feathers themselves they would not take such trouble to collect pretty things for their playhouses."

"But Uncle Jack, what do you mean by playhouses—their nests?"

"No, they build a different kind of nest to bring up the young birds in. These bowers seem to be built just for pleasure. First the bower-birds clear a space in the forest till the ground is clear and clean as your lawn is after John goes over it with his rake. When they have made this nice and clean they begin on the playhouse. It is really a little hut made of slender twigs, very much like this playhouse of yours. It looks like a wee wigwam. After the birds finish their bower they set to work to decorate it. They hunt everywhere for bright feathers, and shells, and broken bits of glass, or anything else that is bright and shiny. Sometimes they fly a long way to get such objects, and once back at their bower they spend a great deal of time arranging and re-arranging their bric-a-brac! When their pretty things grow worn or faded they put new ones in their places. They have even been known to pick up pieces of jewelry belonging to people who live near, and it is not at all uncommon for women who have lost some of their treasures to go out into the woods and hunt through the bowers to see if they can find them."

"My! How funny!" said Judy. "And how big are these bowers?"

"I have seen different sizes," replied Uncle Jack. "Some species build them five or six feet high—others are smaller. About the queerest kind of a bower-bird is one found in New Guinea, and called the gardener-bird. He makes a cone about a foot and a half high out of moss, and then a few inches outside of this he goes to work to plant tall, straight twigs, to make a hut surrounding this moss cone. He leaves a doorway on each side of this outer hut. These birds always choose twigs from an orchid which stays alive and goes on blooming for a long time, so it is a real 'bower.' The bird also scatters flowers of different kinds over the floor of the bower and on the cleared space outside of it."

"It sounds like a fairy story, doesn't it, Uncle Jack?" Bess said. "I wish we could go to Australia and see them."

"I'll tell you what you can do, without taking such a long journey," Uncle Jack answered. "Some day I'll take you to the Smithsonian Institution at Washington, and you shall see some stuffed bower-birds in one of the glass cases, and their bower filled with shells and bright feathers, just such as I have seen many times in Australia."

The STEPHENSON Patent Cooler
No Ice Required
Perfect Ventilation Absolutely Sanitary



Awarded first prize wherever exhibited. If not for sale at your dealer's, write for particulars and prices.
L. Anderson Co., Mfrs.
MARTINEZ, CAL.

Put yourself in HER place Mr. Man



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There's no overheating the kitchen with an up-to-date oil cook stove. It's just like cooking with city gas. The burners concentrate the heat at the different cooking points.

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No wood or coal or ashes to lug. No waiting for fires to catch up. The long blue chimneys do away with all smoke and smell. In 1, 2, 3, and 4-burner sizes, with or without ovens. Also cabinet models with Fireless cooking oven.

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Kellogg's Ant Paste

MAKES ANTS DISAPPEAR

This wonderful preparation will drive all the ants out of your house inside of 24 hours. Get a package today and follow instructions.

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LOOK FOR THE RATTLE CAP



AT ALL DRUGGISTS

FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS.

San Francisco, May 10, 1916.

WHEAT.

Crop prospects in both Pacific and Middle Western States are rather below expectations, tending to stiffen the market, though lack of shipping facilities prevents any noticeable improvement in values on the Coast. The California crop is still uncertain, but it is known that some heavy losses have occurred in important producing districts. The local market is very quiet.

Cal. Club, ctl	$1.60 @1.65
Northern Bluestem	1.87½ @1.90
Northern Red	1.85 @1.95

BARLEY.

Crop reports from various parts of the State show considerable divergence, some sections having a fine yield while in others the crop is a failure. The general opinion among dealers is that the output will be disappointing, though no really accurate information is yet available. This market remains dull for spot barley, with unchanged prices, though there is a little more speculative interest.

Shipping, ctl	$1.37½ @1.40
Choice Feed, ctl.	1.32½ @1.35

OATS.

There is no movement of any consequence locally, but white oats have been marked up in sympathy with the northern market, which shows considerable strength, with holders looking for higher prices. The Government is taking bids this week for a large lot of oats for the Hawaiian Islands.

Red Feed	$1.35@1.37½
White	1.50@1.55

CORN.

Arrivals of Eastern corn are mostly on orders from milling concerns, the movement here being light. There is a fair demand for Egyptian, etc., at the range quoted.

Eastern Yellow, ctl	$1.80@1.85
Milo Maize	1.40@1.45
Kaffir	1.60@1.65
Egyptian	1.50@1.57½

BEANS.

(On wharf, San Francisco.)

Bayos, per ctl.	$4.80@4.90
Blackeyes	2.90@3.00
Cranberry Beans	4.75@4.85
Horse Beans	3.00@3.25
Small Whites (south)	6.25@6.50
Large Whites	6.20@6.30
Pinks	4.75@4.85
Limas (south)	4.50@4.90
Red Kidney	6.50@6.75
Mexican Reds	4.50@4.65
Tepary Beans	4.00

SEEDS.

The alfalfa movement for this season is pretty well over, and nothing is doing at present in the other lines quoted. Some sales of brown mustard have recently been made at 4 to 4½ cents.

Melilotus Alba, lb.	23 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	5 c
Soy Beans	8 c
Canada Peas	5¼ @ 6 c
Alfalfa, per lb.	22 @24 c
Sudan Grass	35 @40 c

HAY.

Local offerings are a little lighter than last week, but still too heavy for the local demand, and while the movement has consisted largely of new alfalfa for shipment up the coast, values here have shown some easiness. The shipments would clean up better if adequate coastwise shipping facilities were available. Arrivals of new grain hay have been only a small amount of wild oat hay, which was in poor shape and brought unsatisfactory prices. Old grain hay of ordinary quality is still coming in, and moves slowly. Cutting of grain hay is under way now in many districts, and most reports seem to indicate rather light production. There is said to be very little west of Tracy, and the crop in some places north of the Bay is failure, while in others it is light, but of good quality; and in some important districts it is said that most of the crop will be cut for grain.

No. 1 Wheat	$13.00@16.50
No. 2	12.00@14.50
Tame Oats	12.00@18.00
Wild Oats	12.00@14.00
Alfalfa, new crop	8.00@12.00
Stock Hay	6.50@ 8.50
Straw, per bale	.25@ .40

FEEDSTUFFS.

The Government is taking figures on a lot of bran for the Hawaiian Islands. Local buying is very quiet in all lines, with prices unchanged. (Wholesale prices, per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$22.50@23.50
Alfalfa Meal, per ton	20.00@21.00
Alfalfa Molasses Meal per ton	21.00@22.00
Bran, per ton	24.50@25.50
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00@25.00
Cracked Corn	40.50@41.50
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Tankage	45.00
Rolled Oats	29.50@31.00

VEGETABLES.

Eastern shipping business in green asparagus is about over, having been very satisfactory. There is still a good local demand, partly for the canneries, and choice stock brings very satisfactory prices. Rhubarb shipments also are over, and the market is weak. Summer squash is in good demand at an advance over the last quotation, and beans and peas hold up well. Corn is offered freely, and prices are rather easy for this season.

Cabbage, ctl.	$1.75@2.00
String Beans, lb.	5 @10 c
Summer Squash, box	1.00@1.25
Peppers, bell, lb	.25 @30c
Rhubarb, box, Bay	.40 @85c
Asparagus, box	1.00@2.00
Artichokes, doz.	.40 @50c
Lettuce, small, crate	75c
Eggplant, lb.	.15 @20c
Peas, sack	1.00@1.50
Tomatoes, lugs	1.50@2.00
Green Corn, doz	.10 @25 c

POTATOES AND ONIONS.

New onions are still rather scarce, consisting mostly of Bermuda seed stock, which is firmly held. Australians are slow and easy, while good storage and Oregon stock bring stiff prices. New potatoes show a wider range according to quality, and Oregons are higher.

New Potatoes, ctl.	$1.50@3.00
Oregon Burbanks	2.00@2.10
Delta Burbanks	Nominal
Onions, storage	1.75
Onions, Oregon	1.75
Australian	2.50@2.75
Bermuda seed	1.25
Garlic, per lb.	5@9 c

POULTRY.

California stock is now coming in large quantities from many producing districts, causing a decided slump in prices on all grades of chickens. Broilers and fryers have dropped very sharply in the last fortnight, and hens clean up slowly at lower prices. Roosters still do fairly well, but the values are easy. Ducks are lower, and so are Belgian hares, with rather light demand.

Broilers, 15 lbs. to doz and less, lb.	22@23c
do, over 15 lbs. to doz.	25@30c
Fryers	25@30c
Hens, extra, per lb.	19c
Small	17@18c
Smooth Young Roosters, per lb.	25@28c
Squabs, per doz.	2.00@4.00
Geese, per pair	2.25@3.00
Ducks, young, lb	17@18c
Old	16@17 c
Belgian Hares	10@11 c

BUTTER.

The general range of values shows little change. The general Eastward movement has slowed down, but there is still some inquiry, and a large Navy order for shipment East is being packed in Humboldt county, greatly curtailing local receipts. It is reported that stocks in cold storage in the East May 1 were 4,000,000 pounds less than a year ago.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	24	24	24½	24	24	24½
Prime Firsts	23½	23½	23½	23½	23½	24
Firsts	23	23	23	23½	23½	23½

EGGS.

Fluctuations have been slight, but extras are a little higher than last week, as there has been a little demand for shipment, and much of the output at present is being taken for storage.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	21	21½	21	21½	22	22
Sel. Pullets	19	19½	19½	19½	19½	19½

CHEESE.

Monterey cheese has been marked up a little on lighter receipts, while grades quoted on the Exchange are unchanged.

Y. A.'s, fancy	17½c
Fancy Calif. Flats, per lb.	12½c
Monterey Cheese	16@17c

LARGE DEMAND RAISES PRICE OF BEANS.

The advance in beans, which has been anticipated for some time, has taken place this week, all the more popular varieties being marked up. Small whites took the lead in the advance, being very scarce in all markets, and the Eastern demand is strong. In the Portland market they have reached the record price of 8¼c per lb., and the local value is nearly up to the highest former mark. Pink beans also are moving well at advanced prices, and bayos are now participating in the general activity. Limas so far show no great strength, but receive more attention and have been marked up a little. In most varieties of beans, supplies in growers' hands are unusually light for this time of year, and while there is a fair supply of some kinds held by dealers, they hope to clean up before the new crop appears. Shipments from the State have been much larger than last year. From one warehouse there were shipped during the week 25,000 sacks. It is stated that one broker has an order for 1,000 tons of limas which he is endeavoring to fill.

LOS ANGELES DAIRY PRICE

	Wed.	Thu.	Fri.	Sat.	Mon.
Butter	24	24	26	26	26
Eggs	21½	22	21½	21	21

DECIDUOUS FRUITS.

A few lots of loganberries have a peared, and are readily sold at go prices. Blackberries are little m than nominal. Raspberries are s scarce and firm, while strawberr are easy, with liberal suppli Gooseberries also are much lower. few figs and cantaloupes have co from the South, the former bringi $1.50 to $3 per crate, and the lat $7 for the first lot. Apricots a coming from several sections, but far there is little attractive sto and prices are declining. Notwi standing the short crop, cherries a now in fair supply, and while fan stock is well maintained, ordina offerings are moving at rather ea prices. Loquats are again lower.

Loganberries, crate	$1.25@1.
Gooseberries, lb.	5@ 6
Blackberries, crate	$1.00@1.
Raspberries, crate	1.25@1.
Strawberries, chest	3.00@4.
fancy, chest	4.00@5.
Apples	.75@1.
Loquats, crate	.75@1.
Cherries, Black Tartarian 10-lb. box	1.20@1.
White, do	50@7
Per lb., black	4@
White	3@
Apricots, crate	1.00@1.

DRIED FRUITS.

Packers have been doing conside able contracting of late, but ju now there is a lull in the movemer both at this end and in the East. O apricots are scarce and firm at slight advance, and new stock is b ing contracted at high prices, owi to the very short crop. Future fi also are high, though the top fi ures are considered extreme by so packers. Considerable buying, ho ever, has been done at these figure and the trade is anxious to get a that can be had. Prunes have bee receiving an unusual amount of a tention for the last few weeks, as sudden realization of the shortage spot stocks in the East, and t firmness with which the Coast offe ings were held, caused a demand f prompt shipment, while the prospe of a serious shortage brought on strong speculative movement, which packers made many contrac for fruit and also bought back mar contracts placed at lower figur with the trade. It is now believe that some are long on prunes, an buying has been largely interrupte for the present; though with t crop pretty well controlled and muc below normal, no decline is expecte Spot peaches are in limited suppl and for the most part in stron hands, while the new crop is agai slightly higher, as no heavy produ tion is expected and packers are co ering their requirements. The Ne York Journal of Commerce says:

"Future prunes are in an unse tled state, so far as market cond tions are concerned. Most packer are holding at the 5c. basis for 191 pack, and declare there is no possibil ity of the market going lower.

An estimate was received in th trade from a well known Coast con cern in which the new crop was plac ed at 130,000,000 pounds, with th possibility that it might run as hig as 150,000,000 pounds. Heretofore the general trade estimate has bee 110,000,000 pounds. The trade her was unable to decide whether or no Coast operators, because of improv ed outlook, were more inclined to re vise their views or whether there wa a deliberate effort to bear the mar ket. In the meantime, spot prune are active, with a good general de mand from jobbers, on the basis o 9c. for 40s, 8c. for 50s and 7½c. fo 60s.

"Concerning the raisin situation it is stated at the office of the asso

Special Livestock Market Report.

Drying pastures are sending heavy offerings of cattle and lambs. The latter have been coming also to escape foxtail, but the heaviest shipment is over this week. Not many sheep are coming. Cattle are weak and the market is being flooded with dairy calves. Some soft dairy hogs have been coming and the market is weak tending to lower prices.

WOOL.

The only movement of fleece wools is of the choice grades from north of a line through San Francisco and Sacramento. Some wool is being held around Davis by growers, one of the largest of whom is still holding three or four clips. The general market is strong with no advance. Foreign markets are strong with nominal advances.

ition that all orders of wholesale ocers are being confirmed, provided ey are within range of the legiti- ate needs of such houses. The ob- et of the association's present at- ude, it is claimed, is to discourage tside speculation and to effect a tribution through normal chan- ls into actual consumption. The licy is further to have the jobbers der only for a short time ahead, that their stocks may be continu- y replenished from fresh arrivals. eculative houses are still seeking obtain confirmation, but so far ve been unable to obtain any. ricots are firm, with a good dis- bution into consuming channels."

ples	5 @5¼c
ricots, per lb., 1915	9 @11 c
gs, white, 1916	6½ @6¾c
Black, 1916	4¾ @5 c
Calimyrna, 1916	9 @10 c
unes, 4-size basis, 1915	4½c
1916	5 @5¼c
aches, 1915	4 @4½c
1916	5 @5½c
ars	5½ @7½c

(Associated Raisin Co. Prices.)

ncy Seeded, 16 oz.	7 c
oice Seeded, 16 oz.	6¾c
ndon Layers, 3-crown, 20-lb. box, 1916	$1.30
perial Clusters, 6-crown, 20-lb. box, 1916	2.75
lk, layers, 50-lb. box, 1916	2.75

CITRUS FRUITS.

The eastern auctions are holding well on citrus fruits, which means at the balance of the navel crop ll be marketed at fair prices. At w York on Monday, May 8, the ctions averaged for navels from .70 to $3.10 per box; for valencias m $2.85 to $3.25; for bloods $1.35 $2.90; for seedling $1.50 to .60; for sweets $1.15 to $2.35; Michaels $1.30 to $2.75; lemons .70 to $2.70 per box. Other auc- n points paid about the same aver- e as the above. The California p of navels has been nearly all ipped and valencias will soon have clear market.

In San Francisco local trading in citrus lines has been of an ordi- ry routine nature for the past ek, with ample supplies and prices e same as for some time past.

anges, Navels	$1.50@2.75
angerines	1.25@1.75
apefruit	1.50@2.50
emons, box	1.75@3.50
emonettes, box	1.25@1.75

HONEY.

Only a limited amount of new ney has arrived, consisting entire- of amber extracted, which has und a ready market at higher ices. Old honey is rather easy, ith only a few odd lots remaining d most of that candied and show- g the effects of long keeping. arger offerings of new-crop are ex- cted shortly, and indications are vorable for good prices.

ater White, comb	10@12½c
mber	8 c
Water White, extracted	7@ 8 c
Light Amber, new	4@ 6 c
Dark	2@ 2½c

HORSES.

Speculators buying horses for military use have been very active in California for some time, and are still buying many horses in the northern part of the state, though the available stock in many quarters has been well cleaned up. Such sales are reported at $100 for good unbroken cavalry horses. There is no demand whatever for such stock in the local market, though a few are being sold here for shipment; and there is also some call for cheap horses, largely from country buyers. (Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs and up	$ 250
Drafters, 1550 to 1650	150@200
Chunks, 1350 to 1500 lbs.	150@175
Wagon horses, 1050 to 1350 lbs.	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@ 75
Farm Workers	50@100

LIVE STOCK.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)

Steers, No. 1	7¼ @7½c
No. 2	6¾ @7 c
Cows and Heifers, No. 1	6 @6¼c
No. 2	5½ @5¾c
Bulls and stags	4 @5 c
Calves, light	7½ @8 c
Medium	7 @7½c
Heavy	6 @6½c
Hogs, grain-fed:	
100 to 160 lbs.	7¾c
160 to 175 lbs.	8¼c
175 to 250 lbs.	8½c
250 to 325 lbs.	8 c
Prime Wethers	7¼ @7½c
Spring Lambs, f. o. b. country points	$5.00@5.25

DRESSED MEATS.

Steers	11¼ @11¾c
Veals, large	11½ @12 c
Small	12 @13 c
Prime Wethers	13½ @13¾c
Spring Lambs	16 @17 c
Hogs	11 @12 c

WOOL.

(Prices paid in the country.)

Red Bluff, year's	25@27 c
Sacramento Valley, y's	19@35 c
Mendocino, year's	28@31 c
Mendocino, 7 months	25@26 c
Southern, year's	18@21 c
Southern, 7 months	15@18 c
Imperial Valley, year's	17@19 c
Imperial Valley, 7 mos	14@15 c
Nevada	21@23 c

SPECIAL DECIDUOUS MARKET REPORT.

By J. L. Nagle.

Sacramento, Cal., May 8, 1916.

There has been practically no change in California crop conditions since our last report, with the exception of the Tokays in the upper San Joaquin and Sacramento Valleys, which were seriously affected to the extent of about 85 per cent in some districts and 30 per cent in others by the frost of Sunday morning. The American River district, Orangevale, Fair Oaks and Florin, were probably more seriously injured than any other district, although Lodi, Woodbridge and Acampo were affected in spots. Practically no damage has been done to the grapes or other fruits by frost in the Fresno district. There will be, however, a slight shortage due to excessive and continual north winds.

Eastern markets continue to pay satisfactory prices for cherries, which seems to indicate a forerunner of the condition of the season throughout.

The following prices have ruled for the week:

New York—Chapmans averaged $2.75; Tartarians, $3.55; Burbanks, $3.35; Rockports, $2.15; Knights Early, $2.50; Guignes, $2.35.

Philadelphia — Chapmans, $2.65; Tartarians, $2.70; Knights Early, $2.50.

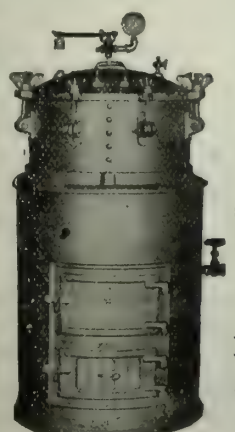
Boston — Chapmans, $2.12; P. Guignes, $2.10; Tartarians, $2.17; Knights Early, $2.00.

Chicago—Chapmans, $2.35; Tartarians, $2.40; Rockports, $3.15; Knights Early, $2.10.

Orchard and Hotel CANNING OUIFIT NO. 2

OUTFIT NO. 2 INCLUDES:

- 1 18 x 18-inch Retort with Cover, Packing, etc.
- 1 Petcock
- 1 Choice of either Steam Gauge or Thermometer.
- 1 Galvanized Crate.
- 1 Triangle (to support crate).
- 1 Set No. 2 Crane Irons.
- 1 No. 7 Blast Furnace.
- 1 Tipping Copper.
- 2 Capping Steels (Reg. Sizes).
- 1 Thumb Nut Wrench.
- 2 Pair Can Tongs.
- 10 Feet Wire Solder.
- 1 Flux Brush.
- 1 4-ounce Bottle Liquid Flux.



- 1 Firebox.
- 1 Shaker Handle.
- 6 Canners' Knives.
- 1 Book of "National" Recipes.

Price, $85.00

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Canning Machinery
AN FRANCISCO, CAL.

The Exchange has an increase of

170 Producing Almond Growers

since the 1915 crop

California Almond Growers' Exchange
San Francisco, Cal.

Publisher's Department

The Jersey sale at the Rancho Dos Rios last Saturday was quite successful, and we are pleased to note that buyers from over the State were present to get this stock, for which they paid good prices in nearly every instance.

At no time in the history of the State has there been so much interest in pure-bred hogs as at this time. From all sections we hear of breeders preparing to enter their stock in competition at the State Fair this coming fall. Some of the finest hogs in the U. S. will be shown at that time.

Our "California Hog Book" is still receiving compliments from its critics. Here is one from the Modesto Herald: "The latest work of interest to California farmers issued from the press of the Pacific Rural Press is the 'California Hog Book' by W. S. Guilford. This book is devoted to a review of all conditions confronting the hog raisers in California and contains a great deal of valuable information and advice. It should be of great value to anyone interested in this industry, which brings good financial returns when properly taken care of. To our dairymen who raise hogs as a side line this book should be of especial value." Price $2 postpaid.

The Pacific Rural Press is generally recognized as being one of the most influential and authentic horticultural and agricultural journals in circulation, and an article in its columns is sure to attract attention of its thousands of readers.—Tehachapi Tomahawk.

Of the six agricultural books that we publish our latest, "Second Thousand Agricultural Questions Answered," is the largest seller at this time. This book should be handy to get at on every farm. It answers the questions that come up every day, and if you have the book you can refer to it and solve the difficulty at once. By its use many dollars may be saved every month. Price $1.50 postpaid.

Classified Advertisements

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

GAS ENGINES—I can furnish rebuilt Fairbanks, Morse, Otto, Peerless, Samson, Union and other good makes in all sizes. All investigators buy and all buyers are delighted. Pay when satisfied. J. J. Pottinger, 189 2nd St., San Francisco.

IRRIGATION EQUIPMENT—For pumps, oil engines, gas engines, friction clutch pulleys, etc., write us. We can save you money. Commercial Iron Works, 481-497 Fifth St., San Francisco.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

FOR SALE—Used Ranch Tools, Windmills, pumps, engines, new galvanized tanks; 1000, $22.50; 2000, $32.50; guaranteed. Save half. Demmitt Company, 120 North Main, Los Angeles.

REBUILT GAS ENGINES from 3 to 50 h. p. Thoroughly overhauled and guaranteed. Write us you requirements. A FEW SPECIALS: 6 h. p. 2-Cycle Gas Engine, $125; 15 h. p. Field Gas Engine, $350; 35 h.p. Best Gas Engine, old but reliable, $200; 50 h.p. Otto Gas Engine, $900. Mechanical Installation Co., 181-89 Second St. Motors, Gas Engines bought, sold and exchanged.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

OFFICE STATIONERY—Catalogues, general commercial printing. Good work, low prices, prompt service. Mail orders. G. C. Gallagher, 436 Sacramento St., S. F.

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PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

CONCRETE MIXERS—2 brand-new mixers at manufacturer's prices. Write at once. Commercial Iron Works, 481-497 Fifth St., San Francisco.

TREES AND PLANTS.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. E. Rice, R. 1, Box 76, Reedley, Cal.

SWEET POTATO PLANTS—Yellow Jersey, Red Jersey, White Pacific. Strong plants; inspected. $2 per 1000, postpaid. R. M. Plympton, Arroyo Grande, Cal.

PEDIGREED BURBANK FRUITING-FODDER—Cactus Plants. 100, $7.50; 1000, $45; 10,000, $300. El Campo Co., 227 Story Bldg., Los Angeles.

FOR SALE—300,000 yellow Jersey sweet potato plants. Prices from $2 to 50c per thousand. For information, write Parker Bros., Hemet, Cal.

A-1 NAVEL, VALENCIA and LEMON trees, $15 per hundred, packed in moss. Less than 100 lots, 18c each. J. C. Johnson, Azusa, Cal.

FOR SALE—Spineless Cactus Plants. Prices right. B. C. Englert, Byron, Cal.

WELL BORING — Water guaranteed. Low prices. David Bahrs, Marysville.

SEEDS AND BULBS.

WE BUY ALFALFA SEED containing Dodder, Mustard and other noxious seeds. Send us sample of any high or low grade seed you may have; also of mustard,urr and sour clover seed, flax, etc. Signed Mercantile and Warehouse Co., Fifth and Poplar Streets, Oakland, Cal.

SEED BEANS—We have choice Red Mexican and Buckeyes grown on sand land, producing a heavy crop. Well cleaned and in good order. Write for prices to THE GRANGE COMPANY, Modesto, California.

LAND FOR SALE

FOR SALE—20 acres, 6 miles from Turlock, well equipped poultry ranch. Most of feed can be raised. Five acres to good alfalfa. Good house and barn. Three good horses and five cows. $3500 cash or $4000 with terms. A. Lavander, R. 3, Turlock.

FREE HOMES—SAFE INVESTMENTS without residence. SCHOOL, STATE, INDIAN, GOVERNMENT Lands. YOU have 9 rights, NOW worth $1,000 each. Booklet 16 FREE. Write JOSEPH CLARK, Sacramento.

EASTERN KANSAS FARM—160 acres, well improved. Trade for small California farm. J. L. Buck, Chowchilla, Cal.

FORTY ACRES improved, very level, no alkali, in crop; at price raw land. Might take some trade. John Lockridge, Chowchilla.

FOR RENT OR SALE—Land for Asparagus, Dairy or Beans. Address James M. Berry, Thornton, San Joaquin County.

WANTED.

FOUR MILKERS WANTED FOR PURE BRED HERD—Flat hand, dry-hand milkers, for Holsteins. Must be energetic, clean, intelligent men who will work for our interests. We want men who will stay and who take pride in their work and in our cows. None but good, clean milkers of good habits need apply. HENDERSON COMPANY, Sacramento Bank Building, Sacramento, California.

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. K. Humphrey, Principal, Stockton, Cal., Box 704.

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Mitchell $1325

Combining the Best from 257 Show Models



John W. Bate Saves 20%

And Thus Gives You 26 Extra Features

This is to tell you how factory efficiency has cut 10,000 costs on the Mitchell car.

How we build it for half what it would have cost, even in 1910.

How we build it for 20 per cent less than other factories can build it now.

And how, by those savings, we give you 26 extras which you don't find in other cars.

In 1903—when Mitchell cars were first built—we brought John W. Bate to Racine. He was even then the greatest expert in factory efficiency in the metal-working line.

Our vehicle factory was then 70 years old. It was a model efficiency plant. And we started then to make our motor car plant the most efficient of its kind in America.

10,000 Costs Reduced

In the 13 years since, Mr. Bate has reduced more than 10,000 motor car costs.

He built this whole plant—covering 45 acres—so cars could come through without the loss of a second. He equipped it with 2092 labor-saving machines—the most efficient machines that are known in this industry.

He has eliminated from the Mitchell almost every casting. In place of them he uses 184 drop forgings, which are three times as strong. Also 256 steel stampings, tough and stanch.

He has invested $5,000,000 so fine cars could be built here for less than anywhere else. No other factory which builds cars of this class can compare with it.

Not One Cent Wasted

Some motor car makers buy all their parts. Most makers buy the larger share. But 98 per cent of this Mitchell car is built in this model plant. Thus we save under others from 20 to 40 per cent.

Part of this saving is shown in our price. No other high-grade Six of the Mitchell size sells at the Mitchell price.

The rest of the saving pays for 26 extras. We give you 26 features which others don't offer. No car in our class has more than two of them. No car at any price has more than four.

Go see these extra features. You will want every one of them. And you will not, we think, buy a car which omits them.

257 Cars in One

This New Mitchell model came out April 15—from four to eight months later than other current models.

This model was completed after the New York Show. There our experts and designers examined 257 new models. And they picked out the best of the new styles in all of them—from ours and from others—in body design and equipment.

Thus the New Mitchell combines all the best things brought out at the New York show. Its lines and its luxuries—its new ideas in equipment—are the finest shown.

All this in addition to the 26 unique features which other cars don't offer.

Where Mitchell is First

In ease of riding the Mitchell car stands first. Any Mitchell dealer can prove that in five minutes. No other car in the world contains the Bate cantilever springs.

The Mitchell rides the roughest road as a boat rides waves. This comfort will astound you.

The Mitchell stands first as regards durability. Six Mitchell cars have averaged 164,372 miles each. In ordinary driving that is more than 30 years' service.

The Mitchell is the easiest car to drive. That's because of its oversize steering parts, fitted with ball bearings.

The Mitchell is long and roomy—127-inch wheelbase. It is powerful. In every way it gives greater value than other Sixes, because of our factory economies. And it includes 26 features—all costly and important—which other cars don't offer.

Let the nearest Mitchell dealer show these extras to you. He has this new model now. If you don't know him, ask us for his name.

Six cylinders—high-power, high-speed motor—127-inch wheelbase. Anti-skid tires on rear. Complete modern equipment, including motor-driven tire pump.

$1325 F. O. B. Racine for 5-Passenger Touring Car or 3-Passenger Roadster. 7-Passenger Body $35 Extra. New Mitchell Eight, $1450 f. o. b. Racine.

Mitchell-Lewis Motor Co.

Racine, Wis, U.S.A.

Vol. XCI—No. 21 Forty-sixth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO MAY 20, 1916. LOS ANGELES

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Livestock in the Sacramento Valley.

A survey of livestock development in one of California's interior empires indicates the permanent nature that great industry is assuming in its various branches.

LIVESTOCK in the Sacramento Valley is getting upon a more permanent basis. Such is the impression of one who has made an attempt at studying the present conditions from Sacramento to Red Bluff on both sides of the Sacramento river.

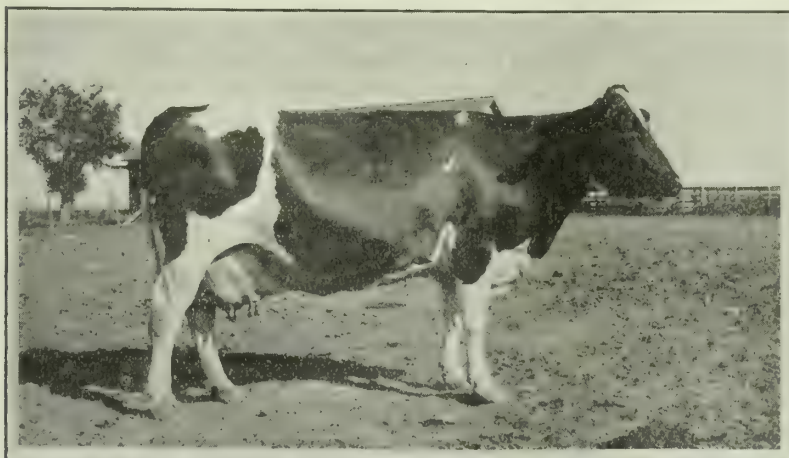
To the writer's mind this does not exempt the two branches of the livestock industry which have always been considered permanent—sheep and beef cattle, for the present prices of wool and meat are encouraging the stock man to look a long way into the future. And there can be no better evidence of permanency than that this condition exists.

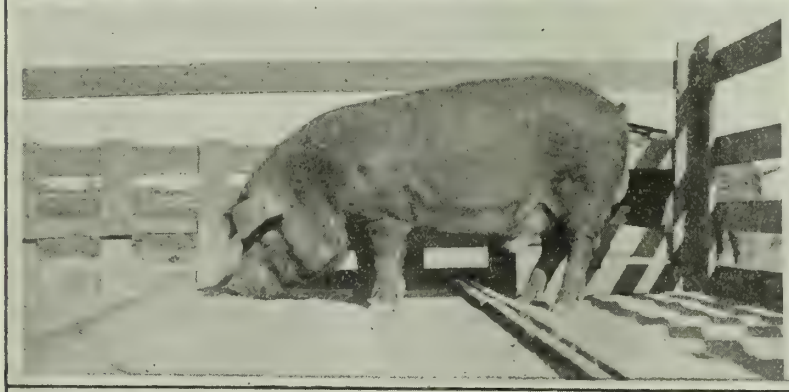
Sheep Sensational.—Perhaps the most sensational thing about the livestock industry in the valley at this time is the sheep business. From north to south you hear it discussed, not only among men with large land holdings, but among the small alfalfa farmers as well. The price of lambs is, of course, the influencing factor; and but for the depleted supply of ewes and the exceptionally high price of the few obtainable, there would be a larger influx into the sheep business than ever before in the history of the valley. Perhaps there will be anyway.

To the alfalfa grower, adjacent to the range sheep man's winter quarters, the situation is doubly alluring, for he can relieve the range man in the fall of his older ewes with poor teeth and backs, and breed them to bucks of the mutton breeds, not only realizing a nice profit on the ram lambs he sells the following spring and on the enhanced value of the alfalfa-fattened ewe as well, but he has also laid a foundation of mutton-producing ewe lambs for future work.

That this method is not mere conjecture may be seen in Tehama county, where a few far-sighted men with alfalfa land are already making the proposition pay with as many as 10 ewes to the acre.

It is not necessary to relate here the changed atmosphere that has come over every range sheep district this year. It is the sheep man's heyday, but in the Sacramento valley you find more than satisfaction among the large flock masters. You find a disposition to improve both in breeding and methods—as one man put it "so that we won't have to handle more sheep to make larger profits and in order that we may make as much from three thousand sheep as we now make from three times that many." These men realize that cheap range is "pinching out." They are preparing for a sane future policy.







Purebred dairy cattle, swine and sheep like the above are becoming greater factors each year in forming permanent agriculture in the Sacramento Valley.

Beef Improving.—While not so spectacular as sheep, the beef cattle men are also experiencing a change of heart, and not only do you find new purebred herds being established and older ones being strengthened, but what is equally important, you find the man running cattle on cheap lands for the butcher, demanding purebred sires.

This condition is not coming about solely for immediate profits, but for the establishment of herds that will meet the changing conditions of the future, and again we believe that indicates permanency.

Permanent Dairying.—Like all other alfalfa-growing areas, dairy cattle and hogs are being considered the chief reliance for the smaller land owner. Like other irrigated districts in California, it has taken some time for these branches of the livestock industry to assume a permanent nature, but there are many circumstances which lead one to believe that the "in and outer's" day is about past in the Sacramento valley as far as dairy cattle and hogs are concerned, or at least that portion of it where alfalfa development has been completed.

In the valley at this time are three cow-testing associations. Each one is serving a mission based on permanent work for the future: the building up of dairy herds.

In the district served by the Gridley Cow-Testing Association, the disposition in past years was to sell cows when hay was high and buy cows when hay was low. No permanent improvement resulted; but in less than two years, the condition has changed. Not only is the yield per cow higher, but it promises to be increased still further because purebred bulls are rapidly transplanting the scrub. As a further evidence that dairying, and that always means hogs, has come to stay in this district, there have been 15 silos erected in the section during the last year and a half. Silos

(Continued on page 624.)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., May 16, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	0	38.53	43.88	54	40
Red Bluff	0	19.93	24.12	86	48
Sacramento	0	18.19	19.65	82	44
San Francisco	0	27.12	21.80	74	48
San Jose	0	16.30	16.41	78	38
Fresno	0	11.72	9.38	86	42
Independence	0	10.33	9.23	80	—
San Luis Obispo	0	26.85	19.99	74	40
Los Angeles	0	19.39	15.42	76	52
San Diego	0	12.54	9.83	70	54

THE WEEK

WE SURELY did some prophecy in our last issue when we said the rural credit bill would go through the House of Representatives on political rapids. But we claim no originality in such a prophecy. When a motor boat starts down stream in a presidential year with her tanks full of political distillate, and her batteries sparking like a broken high-tension wire, there is sure to be some speed—if no rocks intervene. In this case there could be no rocks, for they had been blasted by the platform dynamite of 1912—elephant, donkey and moose, working in rivalry to clear the streambed. The way it worked is shown by only five negative votes in the Senate, as mentioned last week, and only ten votes opposed to the bill in the House—which is even nearer unanimity. From the outline of the bill passed in the House, which comes by wire, there is no great departure from the general plan of the Senate bill (sketched in the Rural Press of March 18), but the House bill has many details which make the enactment broader in its favors to borrowers. It excludes unlimited liability of borrowers; it permits loans to 60 per cent of land value and 20 per cent on improvements, which the Senate refused to recognize as security; it gives a majority of a loan committee power which the Senate restricted to unanimous vote; and it specifies "agricultural value" as a basis of security instead of "actual earnings," which the Senate prescribed; it makes the minimum loan $100 instead of $200, and it makes delinquent interest payable at contract rate (not over 6 per cent), while the Senate prescribed 10 per cent for default payments. Such items in the House bill make it easier for borrowers than the Senate bill, and all such issues must be adjusted in the joint-committee, which will probably tackle the proposition immediately—for the calendar is rapidly moving to the national convention period.

FOUNDATIONS OF RURAL CREDIT.

THOSE who are disposed to express doubt of the desirability of rural credit provisions seem anxious to insist that credit is a "purely business proposition," whether it be rural or otherwise. We are rather inclined to grant that claim, providing we can agree with our opponents as to what a "pure business proposition" is. Is "ordinary banking" such a proposition? Well, do not our enemies recognize the fact that "ordinary banking" is not being done as it used to be? Have they not noticed that city banking is far more of a social institution than it used to be? Is not the up-to-date banker who goes glad-handing through the clubs, chambers of commerce, exchanges, etc., and gives his humanity more play by heading subscription lists for art-galleries, recreation grounds, or by practicing statesmanship as a delegate to a national political convention, doing his banking business very differently from the way his last generation predecessor did it—sitting behind his grilled protection "like an image made of mud, which they called the great god Buddh?" Is it not clear that "pure business," if it means exclusion of human interest and humane motives, is out of date? And is it not true that a business proposition is more apt to be pure, and profitable, too, if it reckons with the public as composed of men and women with souls and consciences and emotions? Surely, this is true; and the strangeness of it is that credit as a "pure business proposition," according to the definition which the objector has in his mind, was a purely American proposition and caused us to be laughed at by European bankers, who build their banks with picture galleries, reception rooms, kitchens and wine-cellars, because they know that ledgers and coin trays and vaults are only the skeleton of real banking, which sways human interests and wields dynasties. The change which is coming into banking the world over is recognition that swells, nobles and rulers are but a small fraction of the world's population, and that the real force to be catered to and encouraged lies in the advancement of the common people. Obviously, the attitude of bankers everywhere is changing and adapting itself to a new and financially sounder constituency than the old exclusive set with which banking was formerly largely done. It is therefore pure business for the modern banker to do as he is doing—continually getting closer in sympathy and interest to the industrial wealth-producers and serving their needs and desires financially. Why, therefore, should the editor of the Journal of the American Bankers' Association write in this way:

It would be a great relief to have rural credit divorced from the multiplicity of uplift and reform schemes with which it has no real connection. Just at present it is so loaded down with salvation enterprises that its creator would not recognize it. About everything from preparedness to unemployment is masquerading in the guise of rural credit.

It has evidently not yet dawned upon the writer of the above morsel that rural credit is really an all-pervading financial question, and that the proper adjustment of it underlies all the popular movements to better the conditions of humanity, which he suggests, and others far wider in their reach and influence. He perhaps does not know that rural credit arose as a salvation-enterprise, and that its creator, Frederick the Great of Prussia, enforced it to enable his devastated and impoverished country to feed his people, who were starving in unemployment because the war left them neither habitations, tools nor seed. Our contemporary should learn that rural credit arose because it was the only solution of the problems from which he now seeks divorce for it. And if he should reduce rural credit to the standards of old-fashioned American banking, what would he do with it? Modern bank policy and management are getting away from those old standards as fast as possible, and rural credit discussions are helping them to do it. Bankers are, in fact, getting into rural credit operations as fast as they can, just as European bankers did before them, and they are taking it with all its humanities, just as they are all other kinds of banking business today.

THE WILLOWS GET-TOGETHER.

THE irrigation assembly at Willows last week, of which an outline was given in our last issue, was an event most excellently planned, most rationally endowed with fundamental purposes and most successfully carried out. The instruction by observation-pilgrimage to Orland was limited somewhat by the north wind prevailing, which kept some of the residents under shelter, but the more hardy, including visiting editors and experts, went through on schedule. The latter are a windy sort anyway, and not frightened by a little extra activity in their own element. We can not praise too highly the insight and wisdom which planned the event. It is perfectly clear that the solution of the large irrigation problems of Glenn and Colusa counties must be sought through popular co-operative effort. Large corporate undertakings have failed—partly, because of lack of popular support; partly, perhaps, for other reasons; it does not now much matter why or what. The way to save what was good and valuable in the past and to ensure what is good and possible in the future, is to get all the land, all the water and all the people together. A few scores of people representing the honest interests in the district, from the top of the courthouse to the lowest rice-paddy on the "goose lands," recognized the fact that co-operative fervor and energy are the only cure for corporate disappointment and distress and took up enthusiastically the plan of organization and promotion proposed by D. W. Ross, which is now well started on its way toward realization. The event of May 11 was to popularize this organization-undertaking by good talk about the principles on which co-operative effort rests and by good demonstration of what beneficent co-operation of people, land and water has done at Orland and at other points in the district. The details and personalities of the event belong to the county papers, which will doubtless fully set them forth; the general significance of the event is the point of emphasis for the people of the State at large, to whom our announcement comes, and it is that aspect of the events which we would like to enforce.

JOY-RIDING AND FEASTING.

THERE were two easily recognizable manifestations of the breadth and depth of co-operative fervor which is now burning in the district. One was placing all the automobiles in

the region at the service of all the people. It was not a proposition to transport invited guests, but cordial invitation was extended to every resident who lacked conveyance; it was the plan that everyone who wished to see what water had wrought on arid soil would be carried to such edifying enjoyment. Groups of people afoot gathered at cross-roads and were taken into the capacious vehicles as they approached such assembly points. It was a grandly democratic idea, and so far as we could see it worked out as planned, for we never saw clearer facial expressions of good spirit and neighborly feeling—except, perhaps, as faces opened over the popular feast, to which, also, all were cordially invited.

And this feast was surely a wonder. There were seven tables, each carrying 102 plates: 714 openings for the first attack, and we do not know how many times those plates were turned over. At each onset there were surely a thousand present, eating or ministering—everything free and all welcome. This was the gift of the whole community to its own people—the ladies, in organizations and individually, creating this supreme manifestation of cordiality and the co-operative spirit. We have seen many rural communities getting together, but never a greater popular joy-break than at Willows.

ALTRUISTIC ORATORY.

AS THE feast progressed there was an outburst of altruistic oratory which we never heard surpassed, either in style or volume. The speakers were Superior Judge Finch of Glenn county; Col. Harris Weinstock, State Market Director; Max Thelan, president California State Railway Commission; Ellwood Mead, Professor of Rural Institutions, University of California; Merle B. Moon, president of the organization of bond-holders now owning the property of the promotion lights which failed; A. B. Humphrey, well known irrigation farmer of Sacramento and San Joaquin counties; James Mills, colossal orchard planter and Regent of the University. Of course, thousands of our readers know that these men can speak, for they have heard them. To us the remarkable thing was that not one of them said a word about the particular line of progressive work in which he was personally engaged, but all, with one accord, rose to the heights of broad interests of humanity toward which enlightened efforts for individual success and prosperity must advance. An impressionable listener, such as we confess ourselves to be, could not avoid being deeply moved by the genuineness of interest, sincerity of motive and breadth of altruistic purpose which all these speakers manifested. As we sat amid their entranced listeners, hearing also the dry north wind whistling around the enclosure, we could but feel moistened and refreshed by the gentle shower of the milk of human kindness which fell from their winged words. They all spoke of the joy, force and accomplishment of the co-operative spirit in a community; how it could reclaim deserts, spread abroad success and prosperity—filling waste places with profitable production and trade which would build homes, schools and churches, thus establishing communities with good name for industry, enlightenment, and the joy of living nobly and well. And all these things come most quickly and abundantly to a community in which the rights of all are conserved and opportunities for all, who deserve them, are opened by co-operative enterprise and effort for improvement and development.

ALTRUISM THE REAL THING.

WE HAVE to confess that we like altruistic oratory. In the Willows incident we enjoyed it because the speakers seemed to rise above their ordinary discourse and to commune with their higher selves. Though they are leaders in their particular crafts they said not: "See what we have done for you or can do for you," but "See what you can do for yourselves by exalting the community spirit. Look about you and see what came of projections for personal aggrandizement which overreached themselves; partly because their aim was wrong, partly because their foundation was inadequate, but chiefly, perhaps, because there was irreconcilable conflict between the interests of man and man. The remedy is co-operation—each one making his contribution to and drawing his reward from the fair distribution of rights and ownerships of water and land and fair assessment of the costs thereof to every man, according to his capital and labor, with no extortions or exactions tolerated from either."

This is the doctrine which was preached at the Willows feast, and it is a doctrine which not only the people of the Willows district, but the people of all the world, need. As the sound of the oratory died away, a higher note was ringing in our ears:

> Behold, how good and how pleasant it is for brethren to dwell together in unity.
>
> It is like the precious ointment upon the head, that ran down upon the beard, even Aaron's beard; that went down to the skirts of his garment;
>
> As the dew of Hermon and as the dew that descended upon the mountains of Zion.

Altruism, honest and sincere, is about the only thing which is godlike, and therefore powerful and enduring in the world. And yet, some seem to believe that it makes for weakness and dependence in mankind. Far from it; altruism makes for strength; it is the only force which can be counted upon to stand as preparedness against individual and national inhumanity and injustice.

Queries and Replies.

Querists must give name and address.

Millet After Alfalfa.

To the Editor: I am going to plow up some alfalfa and sow the ground to millet. Will you kindly let me know if the millet will do well on old alfalfa land, and if the millet is good for milk cows to make them produce butter fat?—I. S., Modesto.

To prepare land for a summer crop of any kind the alfalfa should be plowed under in the fall or early winter, disked well and allowed to lie to rot as much rough stuff as possible before spring planting. Planting on spring-broken alfalfa is apt to make the summer crop dry out badly unless you look sharp with the water. We do not know exactly what you mean by millet—there are several millets and none of those known to us is as good for cows as kaffir, milo, feterita, or soudan grass. If other growers favor millet for cow feed we would like to know what kind they are growing.

Medicine for Morning Glory.

To the Editor: I have 15 acres of peaches, with Egyptian corn between rows, and am troubled with morning glory. Is there any way to kill this pest without killing the corn? I have been told that iron sulphate would.—J. L. W., Clements.

Iron sulphate sprayed on the leaves of morning glory will kill them, but will not prevent new growth from the roots. Get what corn you can by running a flat-tooth weed-cutter under the surface once a week—never allowing the "glory" to show green. But peaches, Egyptian and morning glory are a pretty heavy load, and the "glory" is the only one which will like it.

Tamale Covers.

To the Editor: Are corn-husk tamale covers salable, and how are they prepared for the market?—Grower, San Jose.

There is quite a quantity of tamale covers used in this State, both in the larger towns and the greater cities, and they are produced both by small private parties and by factories of considerable capacity, for the trade. An intending producer should locate these by inquiry in his market town, and secure a contract if possible, for it is usually not wise to put time upon a special product of this kind without knowing beforehand who wants it and what the price will be. For tamale wrappers, a variety of corn with a thin paper-like husk is required. Two or three hundred pounds may be had to the acre, and some estimate that you can get about one ton of husks to six tons of corn. On harvesting for both corn and husks the ears are broken off from the stalk entire, and placed in convenient piles, around which the operators sit while breaking out the ears without great disturbance of the coverings, which are placed in neat bales of about sixty pounds each, in which they are sent to the buyer. The price is variable, and has ranged in different years from four to fifteen cents a pound. Therefore, it is desirable to know by the contract whether you will get enough to pay for your time.

Arrested Foliation.

To the Editor: What is the matter with my grapefruit trees? A few of them seem perfectly alive, yet have no leaves; one has begun to bear fruit without as much as a leaf in sight?—Reader.

To the Editor: I have three apple trees with some branches which do not leaf out, but still the twigs seem to be green and healthy. I have a Climax plum that seems to have the same trouble only it leaves out full, but the leaves are very small. What is the trouble and remedy?—I. W. P., Yuba City.

We do not know. We could put up a dozen perfectly good guesses, and use some very impressive words in stating them. We are only sure of two things: one is that the cause of the trouble is not where you see the trouble; that is, there is no tissue-invading disease which you can conquer by any kind of dope. The second point is that such growth should be cut back to a shoot which is starting normally, or cut back with the hope of starting such a shoot from one of the lower buds. Our observation is that, though the partially dormant shoots have green under-bark, they do not have sap-pressure enough to make healthy leaves, and such pressure must be accumulated or they will die. Such pressure is accumulated by reducing the length, and consequently the evaporation, and having fewer growing points to divide what sap there is. As for the cause, it may be in the soil or it may have been in the sky.

Citrus Spraying Advantages.

[Written for Pacific Rural Press.]

"If we can spray citrus trees as effectively for red and black scale as we can fumigate them it will be one of the greatest benefits to the citrus industry," says F. B. Browning, who has 85 acres of lemons and 70 of oranges in Orange county.

"Heretofore, fumigation has been our best hope, but my trials with spraying practically convince me in favor of the latter. In spite of all you can do, fumigation fails sometimes, and it is a great deal more expensive and slower. If spraying will do the work, we can go in and fix the first appearance of the bugs at very little cost and save the rest of the trees as well as avoiding the expense of spraying or fumigating them.

"In my work last season, principally on lemons, I had most gratifying results on trees which were simply dying back from the hordes of scales on them. Where I sprayed twice, I figure 85 to 90 per cent of a kill of red scale, and much better than that on the black. We fumigated season before last, but didn't kill 10 per cent. One tree simply plastered with red scale died back so we cut out half of the wood and the rest was nearly defoliated. But here they are (Feb. 16) coming out with blossoms ahead of the leaves and the new leaves coming on fine.

"Our scale-killing results were better on leaves and wood than on fruit. We can find scarcely any live red or black scale on the trees; but on the fruit, there are more live red scale than we like. However, even if we had killed them, most of the dead scales won't wash off and the fruit has to go into standards. Fruit with live scale must go into by-products."

The lemon orchard which was principally affected with scale, is laid out in two lines of five-acre blocks, the 80 acres running lengthwise along the base of the hills. The lines are separated by a drive, and many of the blocks are separated by eucalyptus trees. In the lower line, the lower half of several blocks are in oranges on account of the heavier soil. He is using Shurekil, which is a thoroughly emulsified oil spray.

In several of the blocks, the trees were black last fall from the plastering of black scales and the sooty fungus growing on their exudation. One fall spraying cleaned them out so that practically none could be found alive, and the fungus peeled off from the leaves, which became healthy dark green. Along the eucalyptus trees, there was a lot of red scale, and some of this is still alive.

The weather at time of spraying was damp and foggy. Mr. Browning believes from later spraying that bright weather makes spray more effective.

One block which bore a heavy crop last year and was badly covered with black scale, became infested with red scale in the fall. As black scale do not ordinarily kill the wood while red scale do, the latter are held responsible for the many small limbs killed and the many others which dropped their leaves. Perhaps the weakening due to heavy crop and last year's lack of fertilizer helped along. At any rate, having been sprayed in October and again in November, all the black and the young red scale were killed, and the February growth of leaves showed that most of the injurious scale were dead.

"We don't hope to kill all the scale," says Mr. Browning, "but we expect to hold them down so they won't hurt us. We will spray this spring all the lemons, which the scale prefer to oranges when both are handy; then we will spray the oranges. By that time, any old scale on the lemons, which have escaped, will have brought forth young, and we will spray them.

As the red scale produces three or four generations per year, and as the young are most susceptible, the trees should be watched for the time of maximum numbers of young scale and sprayed then.

An estimate places the possible Santa Barbara walnut crop at 50 per cent.



"DESERT" BRAND

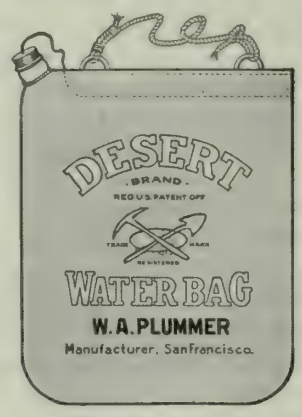
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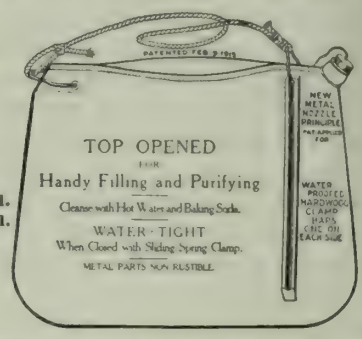


Sanitary (Open-Top) Style 1916 Model



Regular Style

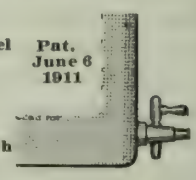
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5 Gal.



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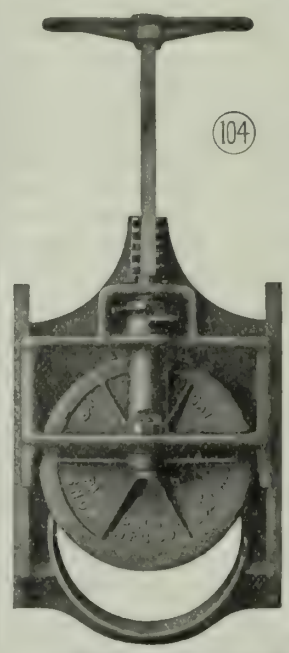
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On receipt of $1.00 we will send a sample gallon can, all charges prepaid, to any express office in California."

Figures on the Fruit Embargo.

A San Francisco bank figures out what we stand to lose in exports to Great Britain if the present embargo is maintained to apply to the 1916 crop.

The situation in regard to the British embargo upon fruits is treated at length in the financial letter of the Anglo and London Paris National Bank of San Francisco.

"If all markets were free and ocean tonnage available, there would be universal confidence in a very prosperous year," the letter recites.

"While the stringency in tonnage seems to increase, all markets are as open as they were last year except that Great Britain has prohibited the importation, except from British possessions, of all fruits except Zante currants until October 31st. After that date fruits may be imported under special license to an amount not to exceed one-half of the importations of 1915.

"From the official figures of the exports of the following named fruits and information and comment from exporters in this State, we find the situation to be about as follows:

Dried Apricots.—We exported last year 25,747,690 pounds of dried apricots, all, of course, from California. Of these the United Kingdom took 7,062,390 pounds, which was not quite three tons less than the same market took in 1913. If we ship half the quantity we shipped last year we stand to lose the sale in that market of 1765 tons of an average total production in the State of over 13,000 tons.

Dried Peaches.—We exported last year 18,720,272 pounds of dried peaches as against 5,156,147 pounds in 1913. There are no official figures of the countries to which these peaches went, but an average of several trade estimates is about 6,000,000 pounds to the United Kingdom. Upon that basis Great Britain may take 3,000,000 pounds.

Prunes.—We exported last year 50,775,637 pounds of prunes, as against 94,344,157 pounds in 1913, Germany, from which we are cut off, being normally much our largest foreign customer for prunes. Of our exports last year the United Kingdom took but 15,677,907 pounds, of which the half whose sale we stand to lose is 7,838,953 pounds, or 3919 tons, which is no startling loss out of a total average production of our 72,000 tons, which, however, fluctuates rather wildly and is far below the average this year. If we sell to the United Kingdom our allotment of prunes we shall sell that country about 70 per cent of our sales in 1913 following the largest crop we ever produced.

Raisins.—In 1915 we exported 58,497,249 pounds of raisins, as aainst 16,594,394 pounds in 1913 and 21,688,429 pounds in 1914. There are no official figures of the foreign distribution of these exports, which have doubtless been stimulated by prices below the domestic market, but in the opinion of the trade our exports to the United Kingdom last year were about two-thirds of our total export of raisins. Upon that assumption, Great Britain could take from us over 19,000,000 pounds of raisins, which is in excess of our normal sales to that country.

Canned Fruits.—As canned fruits are likely to suffer most from the partial loss of the British market, we give the figures in full: In cases of two dozen cans:

	1913.	1914	1915
California product..	4,194,525	5,968,875	4,969,548
Exports from U. S...	1,877,363	2,131,741	2,394,768
Exports to U. K...	1,247,680	1,583,108	1,880,435

From the foregoing it will be seen that in 1915 the United Kingdom took 78 per cent of the total exports of canned fruits from the United States and over 34 per cent of the average production of California for 1914 and 1915. If the sales of 1913 to the United Kingdom be considered as normal, under the British order in council the United States stands to lose but 25 per cent of our normal early sales to Great Britain, for we can sell to the United Kingdom in 1916, 940,217 cases.

GRAPE SUCKERS THICK.

To the Editor: What about leaving the suckers, or water sprouts, on grape vines? My vines are 9 years old and are just alive with suckers. I have been advised by one party to let them grow, and about June 1st to tie them together over the top of vines to make shade.—A. V. W., Sacramento.

[You have so many grape sprouts either because you thinned out or cut back your fruit spurs too much, or because you have irrigated too early, or because there is already too much water in the soil.

Leave the suckers on to take the excess water until the grapes are well set, then thin off all the suckers which have not set fruit. Under your conditions, you will not need any shade, especially if you can water the vines.—Editors.]



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Fleur de Soufre, Anchor Brand, Velvet Flowers of Sulphur and Eagle Brand. Packed in barrels and double sacks. Are the fluffiest Sulphurs that money can buy; the best for vineyards; the best for bleaching purposes. LEAVING NO ASH. SEND FOR ILLUSTRATED BOOKLET; also PRICE LIST and SAMPLES.

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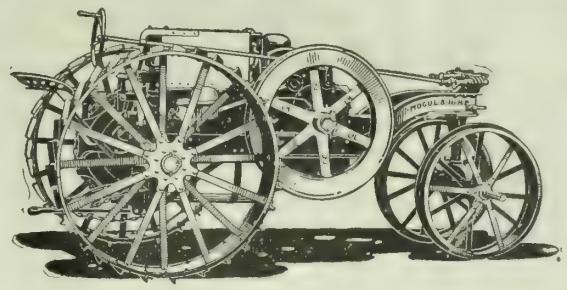
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A Plain Statement of Fact

Mogul 8-16: $725 Cash f. o. b. Chicago



AT the present prices of gasoline and kerosene, no farmer can afford to use a gasoline tractor. Gasoline averages now over 100 per cent higher in price than kerosene and is likely to go higher rather than lower, in the opinions of men who know the oil business.

Again, it is neither safe nor economical to use kerosene in a tractor not specially designed to operate on kerosene. Merely changing the fuel mixer is not enough; the design of the whole motor must be changed.

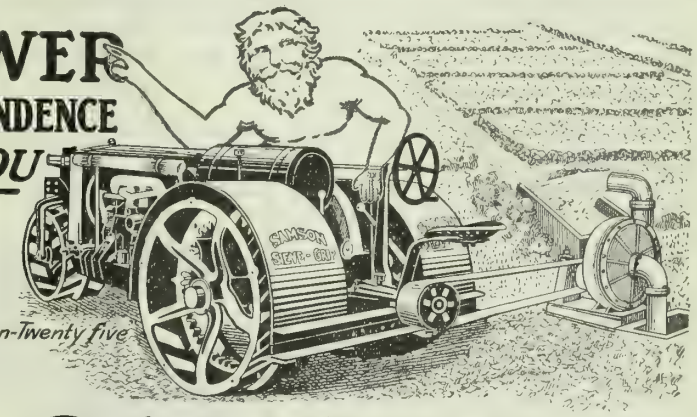
Kerosene and gasoline tractors of equal power sell for about the same price and use practically the same amounts of fuel. On that basis a **Mogul 8-16** tractor saves each year, in fuel bills alone, about a third of its price. The figures prove the truth of this statement.

If you are considering the purchase of a tractor this year, give these facts careful study, from every point of view, before you spend your money.

Mogul and **Titan** tractors are designed specially to operate on kerosene and to give their users the full benefit of this advantage. There are four sizes—**Mogul 8-16** and **12-25, Titan 15-30** and **30-60.** Write us for full information before you buy any tractor.

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will make you independent of labor conditions, of caring for stock, of special stationary plants.

The Samson Sieve-Grip 10-25, at $1250 f. o. b. Stockton, is a one man outfit, will do the work of ten good horses and give you full 25 horsepower for belt work. There is also a Sieve-Grip 6-12 at $725.

The operating and upkeep costs are surprisingly low. Read the article "Tractors and Their Costs in Farming" in the next issue of "Samson Siftings."

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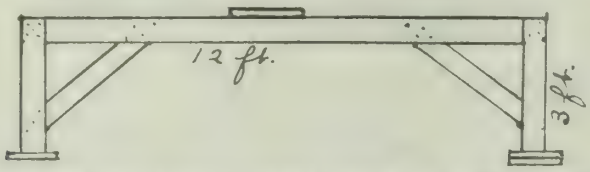
California Garden Flowers, $1.50 Postaid Pacific Rural Press

Easy Contour Garden Irrigation.

[Written for Pacific Rural Press by H. L. Wolfsen, Colfax.]

To make gardening on a sloping piece of ground a pleasure as well as profitable, the work must be made as easy as possible.

After the soil is prepared, stakes should be placed where the contour ditch will be made. To do this, a carpenter's level is fastened to a board which has two legs of equal length. A half-inch is then added to the foot of one leg which will insure the right amount of fall to the ditch.



Spirit level on frame, to make easy the laying out of contour irrigation.

Contour so as to wind back and forth down the slope. It will depend upon the kind of vegetables grown how far the ditches should be apart. At the turns which will be quite steep, stones may be placed to prevent washing. The ditches should not be more than twenty or thirty feet long before they turn, or else the rows will be too far apart. The amount of water to irrigate with will determine how far the patch should extend.

When the ditch is being made, scrape the upper edge smooth, placing all of the soil which is taken out on the lower side and smoothing it, ready for the seeds, or young plants from the hot-beds. Water should be run in the ditch in a moderately large stream at first until it reaches the end of the ditch, and then in a small stream until the moisture shows past the seed row or small plants. Then the water can be stopped and at the proper time cultivate the lower side of the ditch with a rake. The top of the rows will not need to be cultivated unless the water has been on too long and made the soil soggy.

Once the garden is made it is very little work to keep in a tip-top condition. I have been using this method successfully for the last couple of years.

TEPARY MARKET POOR.

To the Editor: Teparies have been tried here the past two years. They do much better than any other bean. They produce 50 to 100 per cent more than blackeyes, which are the only other variety not attacked by weevils. Bean buyers at Turlock advised me not to grow them. Farmers here expect to plant 7,000 or 8,000 pounds. Is there any market or can one be developed?—J. T. B., Denair.

To the Editor: Tepary beans do exceptionally well in this section, but there is some doubt as to their salability. Teparies and blackeyes are the only varieties not attacked by weevil.—W. J. B., Atwater.

[Bean dealers advise against too heavy planting of the tepary until it can be introduced to the trade in a much more general way than has so far been possible.

From a market standpoint, it is a competitor of the "small white," being smaller in size and not quite so good in color. The small white is, of course, a standard bean in all markets and dealers argue that there is no use of introducing a new bean, if inferior to the small white, when they can secure plenty of small whites for the demand. The crop failures in the large small-white growing sections last year made it possible to introduce a few small lots of teparies at about 2 cents a pound under small white quotations.

If it were a bean of distinctive quality, or if it did not compete with such a popular variety, it would be introduced much more rapidly than it can be under present conditions. From a producer's standpoint, it undoubtedly offers inducements to many who cannot grow small whites, but no one can foresee the marketing possibilities at this time.—Editors.]

CEMENT PRICES.

To the Editor: You printed in the issue of Mar. 25 that cement costs $23.80 per ton. Is this correct?—J. N. F., Ferndale.

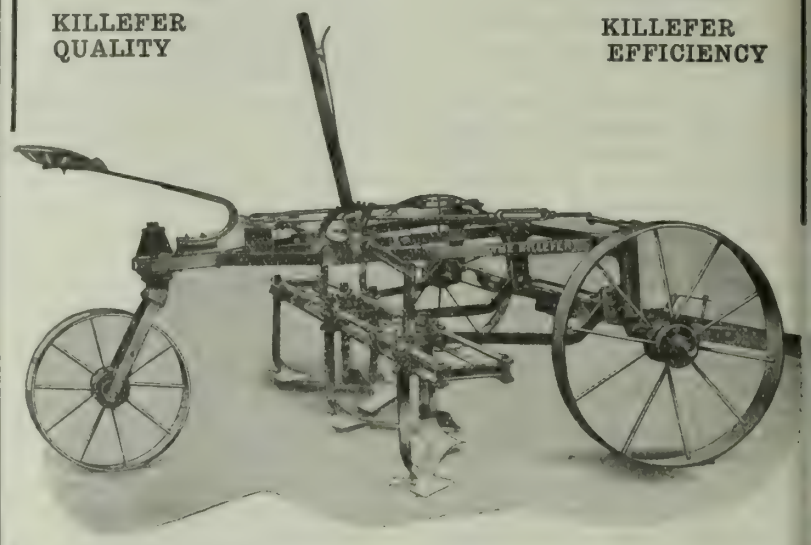
[Cement in wagonload lots is (Apr. 10) quoted at $2.55 per barrel of four sacks of 94 pounds each laid aboard the cars in San Francisco. Ten cents each is allowed for return of the sacks in good condition. This figures out $13.60 per ton less the rebate for sacks and plus the freight from San Francisco. Quotations are made by the barrel; shipments are made in sacks.—Editors.]

Assemblyman H. E. McPherson of Santa Cruz, author of the State Marketing law, died May 14.

Model Bean Cultivator

KILLEFER QUALITY

KILLEFER EFFICIENCY

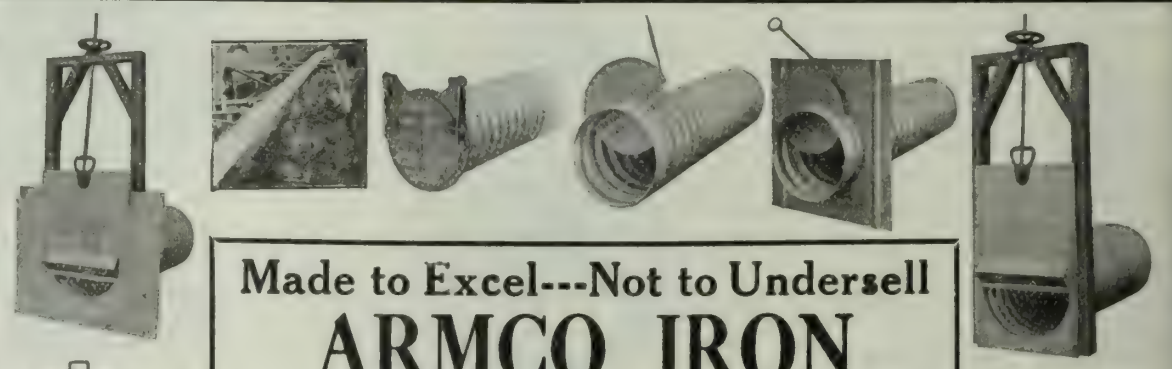


This Cultivator, like most of our implements, has been developed at the request of Dealers and Ranchers for a strong, simply controlled cultivator, capable of doing their work deeper and better than possible with the light Eastern-made tools. The frame is one piece of high carbon steel without joints to work loose or sag and holds the wheels always true and in line with the rest of the machine. The double frame bar gives ample clearance between the standards and eliminates the tendency to clog in trashy ground. This frame bar has a double lifting device, which holds it rigidly on both sides. A man's weight on the extreme end will not spring it out of line. The seat is set far enough back to give an unobstructed view of the rows and the foot control is very easy on the driver.

An important item for the Bean Growers' consideration is that all parts and repairs are easily and quickly obtained without the delay of sending East for them.

The Killefer Manufacturing Co.

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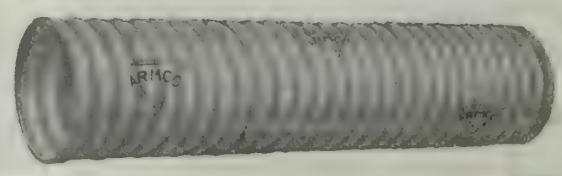
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A line of products which is built up to a standard, and not down to a price. Unequalled anywhere when taking into consideration the quality of workmanship and material entering into its construction, and the satisfaction and service rendered after installation. What you don't see, ask for. The cuts show only part of our line.

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417 Leroy St., Los Angeles. 406 Parker St., W. Berkeley.



FOUR KINDS OF AGRICULTURAL LIME.

To the Editor: Please give meaning of "hydrated" and "agricultural" lime and the relative value of each for spreading on land to sweeten and improve orchard land that may need lime.—A. E. B., Healdsburg.

[There are four forms of agricultural lime which may be used to sweeten and lighten sour and heavy land: (1) quicklime (calcium oxide) (burnt lime); (2) hydrated lime (water-slaked), which is quicklime slaked with water; (3) air-slaked, which is quicklime slaked by exposure to ordinary air conditions, but not to water; (4) ground limestone.

Quicklime is dangerous agriculturally and it destroys humus. Hydrated lime is not dangerous if used at the rate of two tons or less per acre; it has equal value to quicklime and is preferred where heavy soils are to be lightened. In loamy or lighter sour soils, air-slaked burnt lime or ground limestone is preferred in double the quantity that would be used in hydrated form.]

PERSIMMONS DROPPING.

To the Editor: Last year I irrigated my persimmons but little. There was a light crop and all but two fell off. This year tree is loaded with fruit and I have begun to irrigate and the fruit is falling off rapidly, and unless I can check it will meet with similar fate as last year. Will you kindly advise me what to do or what not to do? I am 3 blocks from the ocean; the tree seems to have a good location.—[Answered by Prof. I. J. Condit, University of California.]

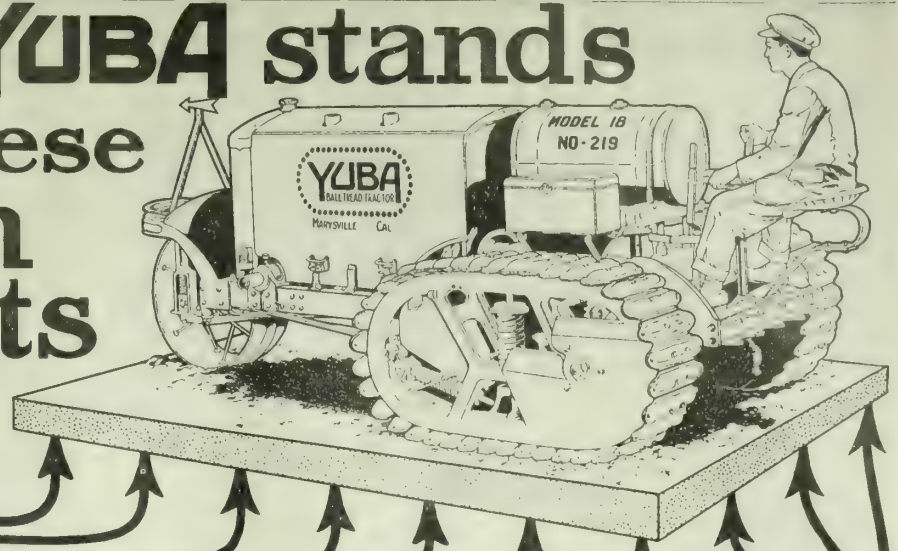
The non-fruiting of the Japanese persimmon is common both in this country and Japan. One Japanese writer makes the statement that the dropping of the fruit is caused by the rapid growth of the roots and shoots as well as by want of some nutriments. They, therefore, attempt to retard the growth in different ways. In Florida the non-bearing of the trees is probably due to lack of pollination. It has been amply demonstrated in Florida during the last few seasons that the presence of trees bearing staminate flowers is necessary to the setting of fruit. You are probably aware that the persimmon tree bears both male and female flowers, sometimes on one tree, but usually on different trees. Some of our best varieties, namely, the Hachiya and Tanenashi, bear only female or pistillate flowers. Here in California these two varieties ordinarily set fruit without pollination and are, as a result, seedless. I know that growers in Orange county have some difficulty with the dropping of the young fruits, but ordinarily a sufficient quantity of fruit set to insure a good crop. I would advise you to withhold water until the fruits are well set.

SPRAY FOR APPLE APHIS AND WORMS.

To the Editor: Green aphids are on my apple trees. It is about time to spray with arsenate of lead: can I mix this with blackleaf 40 without injuring the fruit or leaves? What proportion and where can I get it?—A. J. Y., Live Oak.

[A pint of blackleaf 40 added to 200 gallons of your codling moth arsenate of lead spray will get the bugs if it touches them. It will not hurt leaves or fruit and can be bought at seed stores or general stores. Add a gallon of liquid cresol soap per 200 gallons.—Ed.]

The YUBA stands on these Ten Points



1 **Dependable**—Built of the finest material to a thoroughly tried out design.

2 **Dust Proof**—Equipped with enclosed transmission and an efficient clarifier.

3 **Vibration at a Minimum**—Reduces the wear and tear throughout the machine.

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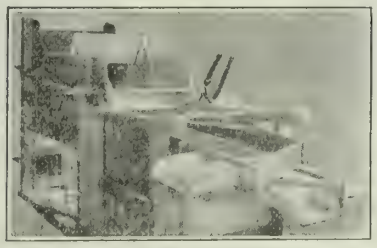
The Catalogue explains why—send for it.

THE YUBA CONSTRUCTION COMPANY

Department A-3

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Prune Dipper and Grader

This is an automatic machine; no guess work about it; gives three grades, three trays up at once; dipping fluid is heated by a large oil-burner and a superheater, to supply hot water to the tank when needed. The prunes pass through every inch of 65 gallons of hot water, therefore no sediment. Fuel expense from 6c to 7c per ton; labor cut 50 per cent; no installing expense; most efficient and economical machine on the market.

Write for prices and further particulars to

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Champion Iron Head Fruit Ladders combine all the necessary and desirable features of strength, durability, lightness and easy handling. 6 ft. to 20 ft. lengths. 15 years in the business. For full particulars write to

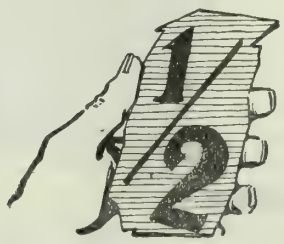
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Save one-half

MICA AXLE GREASE lasts twice as long as ordinary axle grease. Contains powdered mica—a mineral lubricant that is practically wear and heat-proof. It gives a cool, slippery coating that clings to the spindle, makes easier pulling, and out-lasts plain grease two to one. Saves harness, saves horses, saves money. Get a can from your dealer today.

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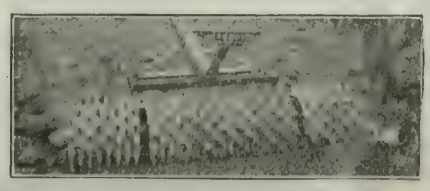
MICA AXLE GREASE

1916 SMYRNA FIGS

Mr. Grower, how many will your trees produce this season? They have brought as high as ten cents per pound in the sweat-box on account of the war interfering with importations. You have done your pruning, plowing, irrigating and cultivating, but this expense will be wasted, unless you secure a sufficient supply of **PROFICHI FIGS** of the right varieties. The Mamme crop was short this season and the **PROFICHI** crop will be short as a consequence. I have a larger Capri orchard than my Smyrna trees require and will have a surplus of **PROFICHI FIGS** for sale. After spending your time and labor to secure a crop, can you afford to lose a $200 a ton crop by neglecting to secure the necessary **PROFICHI FIGS?** Limited quantity, June delivery, for sale. Order now.

THOMAS H. LYNCH, BOX 21, R. R. 8, FRESNO.

The Cunningham Land Roller and Pulverizer



Makes a Perfect Seed Bed
STOPS EVAPORATION—PRESERVES MOISTURE.
The Best Clod Crusher ever made for Farmer, Orchardist, Vineyardist, Nurseryman and Seedsman.
MADE IN ALL SIZES
Write for Particulars—Circular S. R. 1
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Spalding-Robbins Disc Plow Co.
625 Market St., San Francisco

Mechanical Power on the Farm.

WINDMILL PUMPS TWO WELLS.

[Written for Pacific Rural Press by Wm. Curtis Clark, Oakland.]

The windmill is a good old stand-by which is so common that it is not often considered for other than house and barn supply purposes.

It may be made to provide a very useful and cheap means of garden irrigation, and in the course of the season furnish a surprising amount of water.

This may be done by utilizing both the up and down strokes of the mill, thereby doubling the capacity in this manner:

Bore a second well about eight feet away. Midway between the well centers put a 4x6 post in the ground well anchored. Cut a slot in the top to receive a rocker beam 2x3 in., which balances center in the slot, secured by a pin-bolt.

A cylinder equipment is placed in the second well and connected by rod to the end of the rocker arm. The two cylinders are similar in bore and stroke.

This equipment will give a continuous flow without allowing the mill to idle on the down stroke as is the case with single wells.

This outfit will grow a patch of alfalfa for the calf lot or chickens, flowers and lawn, and vegetables in garden and a few fruit trees. It works while you sleep, provided the wind blows; and costs nothing to run.

I have used the new type of mills made by a noted Chicago firm. The gears run in an oil bath which is renewed annually with a fresh gallon of oil. It turns with a breath of air and requires no attention.

It is well to place the cylinders below the water, which cuts out suction lift and keeps them self-primed. Put in a pipe union at the top of the casing, which will allow the cylinder to be taken out for washer renewals as well as furnishing a convenient shoulder for supporting the weight in a clamp across the top of the casing.

ROSIN FOR WORN CYLINDERS. VINEGAR FOR CARBON.

To the Editor: I have a 15 h.p. stationary gas engine with the cylinder worn enough to permit the exhaust to blow up a little into the oil cup. New piston rings do not prevent it. A locomotive engineer told me that one part powdered rosin to two parts powdered graphite mixed with oil and poured in the cylinder, while turning the engine over slowly, will stop the trouble and make the engine run like new. I am afraid that if the rosin and graphite will fill in the worn parts of cylinder, it may also clog up the piston rings. He also claims that vinegar poured into the mixing chamber will remove all carbon.—J. P., Pleasant Grove.

[Answered by Prof. J. B. Davidson, University Farm, Davis.]

[The use of powdered rosin in a gas engine cylinder is inadvisable. It will not stand the high temperatures prevailing in the cylinder, and is sure to give trouble. A little graphite can be used with success, and it has a tendency to cause rough surfaces to wear smooth. If the cylinder walls are badly scored, the only thing that can be used to make it gas-tight is to have the cylinder re-bored and fitted with a new piston and rings. If the cylinder is smooth, new rings properly fitted ought to make it gas-tight.

The use of vinegar as a carbon remover is not to be recommended. Although the acetic acid is very mild, it will not have a beneficial effect on the metal.]

MOLE DITCHING PEAT LAND.

[Written for Pacific Rural Press.]

Mole ditching is a new practice in the Delta lands along the Sacramento and San Joaquin rivers which holds out much promise in solving both drainage and irrigating problems in the peat lands of those districts.

It has been the practice to drain these lands in the wet season with drain ditches, dug several feet deep and ending at the river levee where a large pumping plant pumped the water over the levee into the river. As the dry season approaches irrigation is provided with the same ditches and pumping equipment, in this case the water being pumped from the river into the drain ditches, whence it sub-irrigates the growing crops.

While satisfactory to a degree, the practice does not allow quick or even drainage, and the same applies to irrigation. When draining is started, the land immediately adjacent to the ditches naturally drains first, gradually lowering the sloping water table to the center between ditches. The reverse is true when irrigating. The water from the ditches naturally subs on an angle, the land adjoining the ditch being waterlogged before the center is moistened.

To improve this system various methods have been tried. Tiling has been found satisfactory, but the cost is about $40 an acre. To improve this, a machine has been built which burrows a hole underground.

The machine has a pointed cone made of iron which works much like a sub-soiler, only it leaves the hole open underground. The depth at which it is run varies from 24 to 36 inches according to the crop to be grown. The cone or "mole" is fast to the lower end of a heavy broad vertical strap iron, which is fastened at the top end to a heavy beam and is also braced from the lower end to the beam. The teams are hitched to this beam.

Cost.—Experience so far shows that the cost of doing the work, where the holes are run 50 feet apart, is about 20 cents per acre; and that the holes will remain serviceable at least two years and possibly a good deal longer.

Don't Let Rust Eat Up Your Car. Paint it Yourself for $3.00



It's an easy job—requires no experience. A few hours work makes your car LOOK LIKE NEW. Repainting adds a year or more service to it and INCREASES ITS SELLING VALUE.

Pee Gee Auto Painting Outfit

Contains everything necessary to repaint a Ford or similar sized car, including top. Simple directions on each can.

QUALITY GUARANTEED.

Complete $3.00

At hardware, paint and drug dealers. If your dealer cannot supply you, we will deliver on receipt of $3.00.

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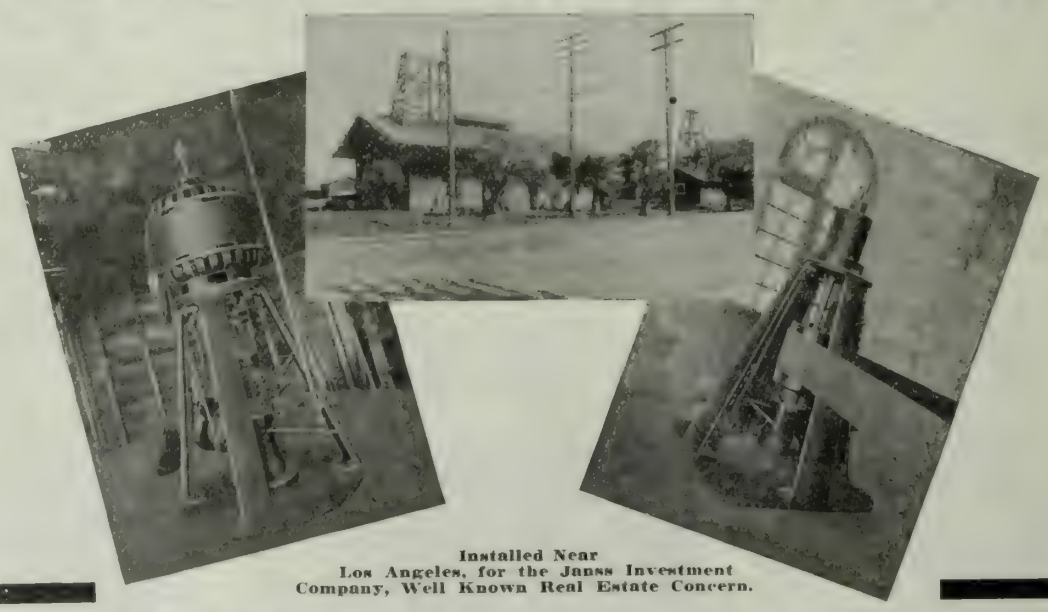
Established 1867 Louisville, Ky.

SURFACE IRRIGATION EXPOSITION DRAIN PIPE.

We have purchased all the Drain Pipe in the Palaces and Courts at the Exposition. This is made of light galvanized iron in 10-foot lengths, and will slip together—can be used for surface irrigation.

PACIFIC PIPE COMPANY.
Main & Howard Sts., San Francisco, Cal.

LAYNE & BOWLER PUMPS



Installed Near Los Angeles, for the Janss Investment Company, Well Known Real Estate Concern.

READ THIS LETTER.

Janss Investment Company
REAL ESTATE SUBDIVIDERS
HOME 10348 BROADWAY 2488
SALES DEPARTMENT

Los Angeles March 6th., 1916.

Layne & Bowler Corporation,
900-910 Santa Fe Avenue.
City
Gentlemen:-

We have in use three of your Layne - Bowler pumps. They have given us good satisfaction in all of our Water Companies where used. One of these has been in since 1912.

You are at liberty to show any of our plants in operation to any of your prospective purchasers.

Yours truly,
JANSS INVESTMENT COMPANY
By Harold Janss
Secretary.

Layne & Bowler turbine centrifugal pumps have for years been recognized by pumping authorities as the type of pump affording the greatest simplicity combined with the least investment for a given pumping capacity. They have eliminated the necessity of great cumbersome machinery and the attendant excessive repair expense. Our pumps without question represent the acme of inventive genius. "Let the World's largest water developers solve your pumping problems." Pumps for absolutely every requirement.

Write for Catalog No. 25.

Layne & Bowler Corporation

900 Santa Fe Ave., Los Angeles.

Belting That Must Make Good



When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a **free sample** of **Test Special** together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

NEW YORK BELTING & PACKING CO.
519 Mission St., San Francisco
Established 1846

FILL OUT THIS COUPON—MAIL IT TODAY

New York Belting & Packing Co.,
519 Mission St., San Francisco.

Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

..... Cal.

H.P. { Gasoline Engine / Steam Engine / Electric Motor .....

Diameter in Inches { Driving Pulley ..... / Driven Pulley .....

Kind of Drive { Cross ..... / Straight ..... / Perpendicular .....

Width of Belt ..... Ply.....

Distance Between Centers of Pulleys { .....

Revolutions per Min. of Driving Pulley { .....

Kind of Machinery Driven { .....

My Dealer's Name .....

My Name .....

Address .....

A pocket memo booklet, giving speed and power tables will be sent FREE to all who mail this coupon.

A

WITTE



You can't buy any *good* engine at a lower price. You can't buy a *better* engine at double the price. Sold direct factory to user. Established 1870.

WITTE ENGINE WORKS,
2861 Oakland Av. KansasCity, Mo.
2861 Empire Bldg., Pittsburgh, Pa.

2 H-P. $29.95
3 H-P. $47.85
4 H-P. $64.75
6 H-P. $89.90
8 H-P. $129.80
Write for prices on sizes 12, 16 and 22 H-P.

According to Frank Lyons, Farm Adviser of San Joaquin county, who is aiding in the experimental work with these ditchers, the drain ditches are being placed 200 yards apart at this time, but it has not yet been decided which is the best distance. While they are perfectly satisfactory in peat soils, he doubts their serv iceability in other soils.

ROTARY PUMPS.

To the Editor: Is the valveless rotary pump called the "Wonder" properly constructed for alfalfa irrigation? Are there other reasons why it would be better than a centrifugal because of its large range of capacity? I will pump from a creek, and can get more water some times than others.—L. F. E., St. Helena.

[Answered by Prof. J. B. Davidson, University Farm, Davis.]

[The rotary pump has one advantage, in that it will operate through a wider range of speed than a centrifugal. Rotary pumps as a rule are not durable, and as soon as wear takes place there is considerable slippage past the revolving piston or the working part corresponding to the piston. The wear is accelerated when there is grit in the water, and this type of pump is not to be recommended under this condition.

It would seem that the selection of a rotary pump will depend primarily upon the conditions involved.]

RICE PLANTED AT $1.75 PER ACRE.

[Written for Pacific Rural Press.]

Fast work is a necessity in preparing land for rice. It must be planted at the earliest moment after ground is dry enough to work. In fact we have seen farmers plowing for rice with water running in the furrows after them. Christensen and Burmester of Sacramento county did not abuse their 900 acres this way, but waited till the land was in better shape, then used a 45 h.p. tractor 24 hours per day pulling a 12-foot double disk followed by a 12-foot seeder which was followed by a harrow. The gentlemen claim that they prepared and planted the 900 acres in 16 days at a cost of $1.75 per acre.

POWER NOTES.

The Samson Iron Works are urging national standardization of tractor horse power. Accurate tests applicable to all machines would have to be devised. There is considerable variation nowadays.

California led in number of automobiles per capita in 1914, but Iowa beat us to it in 1915, the figures for 1915 being 1 to 18 and 1 to 16 respectively.

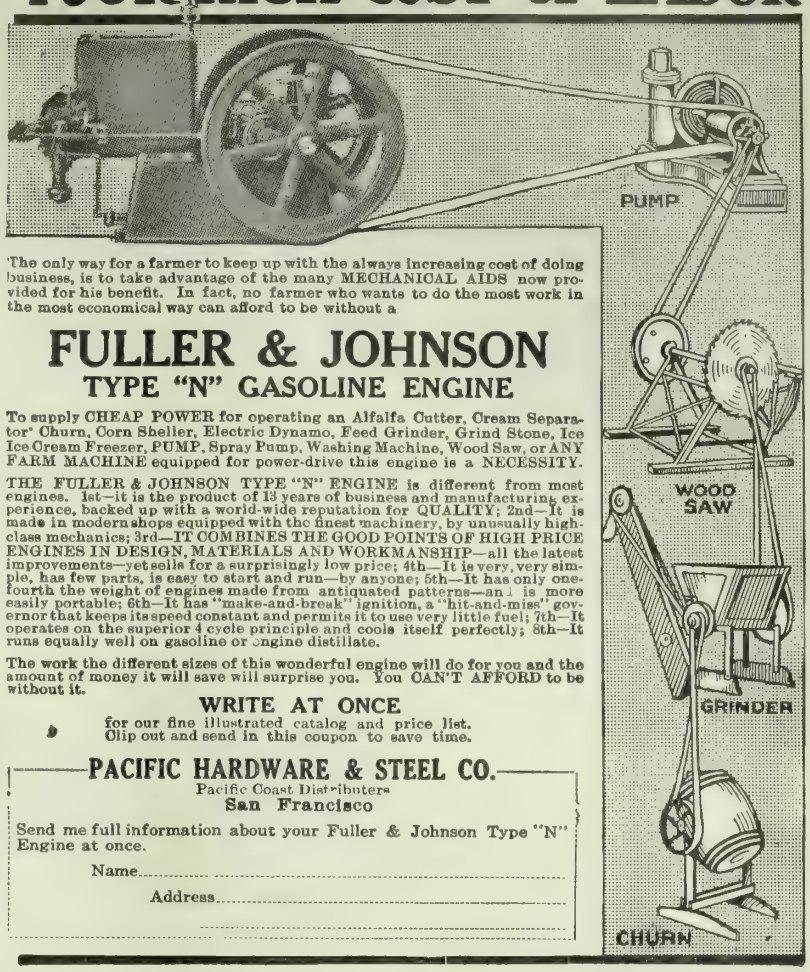
Three eight-hour shifts with a tractor breaking sod was the system last month of H. D. Lemans of Plumas county.

Benzol, of which two gallons can be obtained per ton of coal in burning it to coke, is being used satisfactorily in Europe for internal combustion engines.

Farm women are using many electric or engine driven washing machines in Mendocino county according to Mrs. J. F. Raber, and such machines are a great advantage in making farm life pleasant.

A Hudson Super-Six stock car chassis recently made 102.5 miles per hour under official supervision at the Daytona, Fla., beach course. Each of six one-mile runs was made in less than 36 seconds.

LET·THIS·ENGINE·REDUCE YOUR·HIGH·COST·OF·LABOR



The only way for a farmer to keep up with the always increasing cost of doing business, is to take advantage of the many MECHANICAL AIDS now provided for his benefit. In fact, no farmer who wants to do the most work in the most economical way can afford to be without a

FULLER & JOHNSON
TYPE "N" GASOLINE ENGINE

To supply CHEAP POWER for operating an Alfalfa Cutter, Cream Separator Churn, Corn Sheller, Electric Dynamo, Feed Grinder, Grind Stone, Ice Ice Cream Freezer, PUMP, Spray Pump, Washing Machine, Wood Saw, or ANY FARM MACHINE equipped for power-drive this engine is a NECESSITY.

THE FULLER & JOHNSON TYPE "N" ENGINE is different from most engines. 1st—it is the product of 13 years of business and manufacturing experience, backed up with a world-wide reputation for QUALITY; 2nd—It is made in modern shops equipped with the finest machinery, by unusually high-class mechanics; 3rd—IT COMBINES THE GOOD POINTS OF HIGH PRICE ENGINES IN DESIGN, MATERIALS AND WORKMANSHIP—all the latest improvements—yet sells for a surprisingly low price; 4th—It is very, very simple, has few parts, is easy to start and run—by anyone; 5th—It has only one-fourth the weight of engines made from antiquated patterns—an.. is more easily portable; 6th—It has "make-and-break" ignition, a "hit-and-miss" governor that keeps its speed constant and permits it to use very little fuel; 7th—It operates on the superior 4 cycle principle and cools itself perfectly; 8th—It runs equally well on gasoline or engine distillate.

The work the different sizes of this wonderful engine will do for you and the amount of money it will save will surprise you. You CAN'T AFFORD to be without it.

WRITE AT ONCE
for our fine illustrated catalog and price list.
Clip out and send in this coupon to save time.

PACIFIC HARDWARE & STEEL CO.
Pacific Coast Distributers
San Francisco

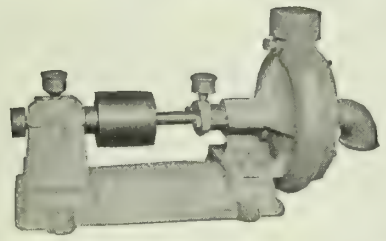
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Address.....

THE WINSBY PUMP

Our New 1916 Type Pump



Best Model for Low Lift Pumping

Size	1 in.	1¼ in.	1½ in.	2 in.	
Price	$16.00	$20.00	$25.00	$30.00	F. O. B. CARS OAKLAND

Larger Sizes at Proportionate Prices.
Complete Pumping Plants of Any Size or Type Furnished and Installed.

WE MANUFACTURE
Pumping Machinery of All Kinds for All Purposes.
Mining, Milling, Concentrating and Rock Crushing Machinery.
Ice Refrigerating Machinery, Cold Storage, Rooms and Counters.
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WE CARRY IN STOCK

Pipe	Belting	Pulleys	Shafting	Boilers
Casing	Leather	Wood	Hangers	Steam
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GENERAL OFFICES AND WORKS: OAKLAND, CALIFORNIA.
We are the largest manufacturers of pumping machinery on the Pacific Coast.



Smooth Lock Seam Sleeve

Here is an exclusive Madewell feature that appeals to every user of Surface Pipe. Seamed inside with perfectly smooth surface. Much stronger than the old-fashioned lapped and riveted seam used by others.

Madewell Surface Pipe

is recognized in established surface pipe districts as having the strongest, smoothest, and most practical construction.

Our Long Lock Seam is the best seam possible to make—and in addition is carefully soldered the entire length so that it stays water-tight. **Strength and Smooth Finish** are the big things to consider when you invest in surface pipe.

Send for Free Booklet—which tells just how Madewell Pipe is constructed

Robinson Hardware Co. **Box B** **Gilroy, Cal.**

General Agricultural Review.

CITRUS AND SEMI-TROPICAL.

Valencias around Dinuba are mostly picked.

The Whittier Extension Co. scrapes the scale from their three-year lemon trees, having found this cheaper than fumigating and spraying.

Lindsay Valencia picking has been 470 carloads to May 12, rather slow on account of Southern navel competition. Navel prospects are good so far.

About 500 attended the recent meeting of the Cal. Avocado Growers' Ass'n. in Los Angeles. Dr. H. J. Webber was elected president and T. U. Barber vice-president.

The Hart and Barber Avocado Co. expect to set out 30 or 40 acres of hill land near Puente with avocados. Most of their sales this year have been in Los Angeles county, though they shipped some to Sacramento county and a carload to San Diego county.

DECIDUOUS FRUITS.

Vacaville is shipping apricots.

Hunt Bros.' Exeter cannery will not run this year.

Apricot pits are being bought in Santa Clara Valley at $45.

All varieties of peaches are reported fine crops in Kings county with 7,000 acres bearing.

Refrigerator car shipments of cherries to Los Angeles from Stockton were made beginning May 14.

An association of fruit shipping companies called the Pacific Fruit Distributors was recently incorporated at Fresno.

A heavy crop of apricots is maturing on the H. S. Reed orchard near El Centro, described in Pacific Rural Press this spring.

Several North Yakima (Wash.) fruit sections were badly frosted both May 7 and 11, destroying most of the crop of some orchards.

Such a heavy drop of Oregon pears and prunes has occurred that according to Prof. C. I. Lewis, a commercial crop can scarcely be expected.

San Joaquin valley orchards are in good condition with regard to insect pests according to R. L. Nougaret of the U. S. Dept. Agr.

Apples in cold storage were 92 per cent more on May 1, 1916. than May 1, 1915, according to U. S. Dept. Agr. Boxed apples were 31.1 per cent in excess of a year ago.

For Visalia Orange Cling peaches $15 a ton was offered two months ago, $22.50 two weeks ago, and $25 a week ago. The Ass'n is holding for $32.50.

The first peaches to San Francisco left Visalia May 10, being shipped by the Redbanks Orchard Co. Many apricots were included. In 1915 the first shipment was May 16; in 1914, May 12.

Col. J. J. Borree planted 35 acres, mostly apricots, near Hayward three years ago, blasting the soil, though there is no hardpan; and he is convinced that much better growth resulted than if he had not blasted.

Buyers have been offering Ventura apricot growers $42.50 for pits; and the Ventura County Cured Fruit Ass'n is said to have refused $40 per ton for canning apricots, believing they can do better than that by drying them.

NUTS AND OLIVES.

The Cal. Almond Growers' Exchange has made a net gain of 201 members this season, totaling well over 1,000 growers.

Trueman Cole of Montebello has a good stand of grafted walnut trees getting ready for next planting season.

There has been no loss of membership from the California Almond Growers' Exchange in Butte or Sutter counties.

Officers of the California Almond Growers' Exchange are looking into the possibilties of having a national almond day in 1916.

J. W. Anderson of Davis claims a yield of 1 ton per acre of 100 almond trees six years old. They are a variety he has developed.

Carpinteria walnut setting was very much lighter this year than last. The larger nuts that will result will bring higher prices per pound.

Of the 201 new members of the California Almond Growers' Exchange, two alone produce as much as was lost when a few Guinda growers withdrew.

The Solano County Almond Growers' Ass'n was organized at Suisun May 13 to market through the Cal. Almond Growers' Exchange. T. H. Loney is president, W. L. Clayton vice-president, and A. L. Scarlett secretary.

The Live Oak and Pennington Almond Growers' Association on April 29 elected E. A. Boynton president and delegate to the State Exchange and C. P. Henry Secretary. The members emphatically condemned the guarantee made by speculators to cut any price that may be named by the Exchange in Eastern markets, with withdrawal strings of course.

GRAPES AND SMALL FRUITS.

The alarming reports of frost damage to grapes last week seem to have been overdrawn.

Cut off the frosted parts of grapevines, advises Sonoma county horticultural commissioner O. E. Bremner.

Concord grapes grafted into a fig tree and producing fruit this season are reported as the work of H. R. Hobson, Long Beach.

Watsonville strawberry growers who do not sell to the combine alleged to have been formed in San Francisco are complaining of the price-breaking tactics of the latter.

Three Klondike strawberry plants a year old, containing 587 berries and some blossoms, are located in the garden of C. A. S. Higley, Long Beach. The largest plant is over 6 feet in circumference.

GRAINS AND FIELD CROPS.

Delta potatoes were considerably frosted.

Sugar cane growing in Tulare county is being widely experimented.

Jute for eleven million grain bags reached San Francisco from India this week. Two more cargos are en route.

The U. S. Dept. Agr. is warning growers against "miraculous" varieties of wheat.

A short potato crop is predicted by E. H. Grubb of Colorado. Neither Col., Cal., nor Ida. will have as large a crop as usual.

Dry weather in Antelope valley is causing grain to be cut for hay. More non-saccharine sorghums than usual are being planted.

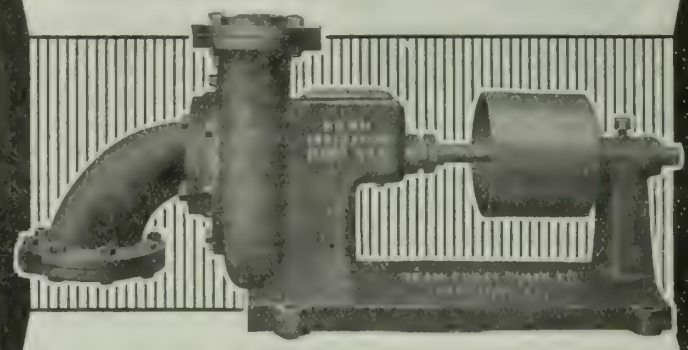
There were 53,000 tons of barley in warehouses of central Cal. in early

Get All the Water

Lack of water is not always the fault of the well—it is often the fault of the pump. No matter how good a well you have, if your pump is not right, if air leaks in around the shaft or if you have to tighten up the stuffing box till there's excessive friction, or if for any other reason your pump does not do efficient work—you cannot get the quantity of water your well should yield.

BEAN CENTRIFUGAL PUMPS

are built to get **ALL** the water.



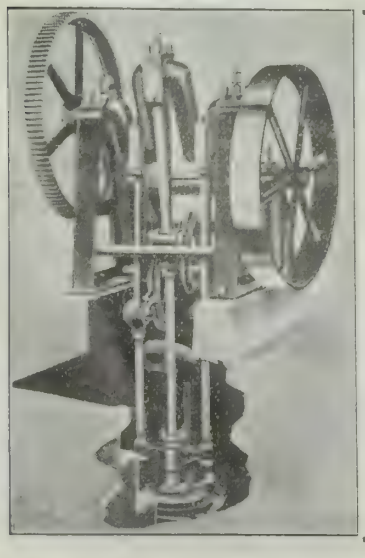
The water-sealed stuffing-box prevents leakage of air and practically eliminates friction at this point. The automatic water-balance prevents end-thrust and does away with a lot more friction. And in many other ways Bean Centrifugal Pumps are built for downright efficient service.

WRITE FOR CATALOG 28-B AND OUR NEW LOW PRICES

It describes the entire Bean line of Horizontal, Vertical, and Deep Well Turbine pumps and direct-connected irrigation outfits. In writing, tell us your particular problems and our pump experts will help you solve them. For Hand and Power Sprayers, get Catalog 28-A; for Bean Opposed Engines, Catalog 28-C; for Hand, Windmill, and other Pumps, Catalog 28-D.

BEAN SPRAY PUMP CO.

211 West Julian Street SAN JOSE, CAL.



Wilson Uniflow

(DEEP WELL)

PUMP

Constant Discharge

Simple Design

Strength to Spare

Catalog at

Wilson & Willard Mfg. Co.

15th and Santa Fe Ave.,

Los Angeles, California.

Feathers in Our Bonnet

Supplied by satisfied users of Savage Tires.

16,000 miles over bad roads.

I have, to this date, gotten almost 16,000 miles, and taking into consideration the bad roads I travel, and using chains, I do not think that I will ever be able to better myself.

RUSSELL KENT.

20,000 miles—will use no others.

Having used two Savage Tires on my car, each of which tires have given me a mileage of better than 20,000 miles, I have decided to use nothing else. W. B. MARTIN.

They will likely give you the same or better service.

Ask for the name of a distributor near you.

SAVAGE TIRES

BRANCH STORES:

San Francisco, 1125-27-29 Van Ness Ave.

Los Angeles, 700 W. 7th St.

San Diego, 936 2nd St.



May as against 40,000 tons at this time last year and 20,000 in 1914.

For corn ear worms, dust the silks with a mixture of arsenate of lead and air-slaked lime half and half, from a porous bag, but don't breathe the dust.

Shipment of green cantaloupes from Brawley was checked by horticultural commissioner F. W. Waite seizing a few en route to the East this week.

The Utah-Idaho Sugar Co. holds a controlling interest in the new Nevada Sugar Co. which will probably operate a factory on the Truckee-Carson project.

Kings county grain acreage is less by 20,000 than last year according to L. P. Denney, but a smaller per centage will be cut for hay "because hay does not pay."

MISCELLANEOUS.

The Imperial Irrigation district resolved to build a canal to bring water to the West Side from Volcano lake, provided the mutual companies would loan the funds on the security of 1917 water rentals.

Pollard and Martin of North Whittier Heights have sold all their Valencia nursery stock. They shipped one carload of trees to Santa Barbara, and 5,000 grapefruit trees to Dana, Texas.

"Demonstration, County Farm Bureau" is a sign which greets Stanislaus county travelers. Definite half-acre experiments are being worked with alfalfa under various treatments on the various soils of the county. Untreated half acres are left alongside the treated ones.

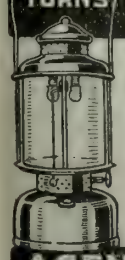
Prizes up to $2600 are offered by the Nat'l Highways Ass'n, Washington, D. C., for photographs of roads showing good or bad conditions, pictorial interest, and photographic excellence. Anyone can compete and Theodore Roosevelt will be one of the judges.

The regents of the University of Cal., on May 9th, appointed Frank Adams professor of irrigation investigation and will pay half his salary while the U. S. Dept. Agr. will pay the other half. W. C. Roberts was appointed assistant in soil chemistry; F. W. Albro assistant in nutrition; and W. T. Pope instructor in botany at Davis. Plans for the citrus experiment station buildings, to cost $125,000, were approved and bids will be asked at once.

CURED FRUIT EXCHANGE QUITS.

The California Cured Fruit Exchange directors on May 9 instructed its Secretary-Cashier to notify the trade that it will not handle the 1916 crop. The local associations of which it was composed will continue as such for the present, hoping that before long a new co-operative Statewide dried fruit marketing concern may be formed by representatives from all of them, eliminating the weaknesses and embodying the strong points. The criminal case against the former cashier, who is awaiting trial for the alleged defalcations which have wrecked the Exchange, will be pressed to the end. The civil action will also be carried through and all accounts closed as soon as possible.

TURNS NIGHT INTO DAY FOR ⅓¢ AN HOUR



Banish the common, dirty lantern and use this bright, brilliant, penetrating 300-candle power light. Can't explode. Wind and bug-proof. Clean, odorless, noiseless. Easily lit. Fine for ranchers, night irrigators, etc. Nickel finish. Used as lamp also. Write for Circular "P." Star Oil Gas Burner Co., Box 296, Sta. C., Los Angeles.

AGENTS WANTED

Sudan Grass Seed

Imported from Texas.
Send for samples and prices.
MILLER & LUX, Incorporated.
Room 1308,
Merchants' Exchange Bldg.,
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THE BOSS TREE PROTECTOR



Made of Yucca Palm. Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frosts, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

Prices:

	Per 1000
10 in. long, 7 in. wide	$10.00
12 in. long, 7 in. wide	11.00
14 in. long, 7 in. wide	12.00
16 in. long, 7 in. wide	13.50
18 in. long, 7 in. wide	15.00
24 in. long, 7 in. wide	18.00
30 in. long, 7 in. wide	21.00

YUCCA MANUFACTURING CO.,
1880 Willow St., Los Angeles, Cal.

PLANT NOW

CARNATIONS from 2½ inch pots, 12 for $1.00.
ASTERS—in 3 colors, 35c per doz.
CHRYSANTHEMUMS—my selection, 12 for $1.00.
PELARGONIUMS—40 varieties, 4-inch pots in bloom, 25c each.
Send for price list.
GEO. N. TYLER,
Brookdale Nursery. Los Gatos, Cal.

Studebaker

HAS BEEN CONTINUOUSLY MAKING
WAGONS—BUGGIES—HARNESS
FOR EVERY FARM USE SINCE 1852

SEE THE STUDEBAKER DEALER

RHUBARB - CACTUS - HOGS

Wagner's Giant Rhubarb Plants less than half price.
If planted this May or June should yield 15 tons the first year.
Spineless Cactus, the best known dairy and hog feed. $10 per 1000 slabs.
Mulefoot hogs, choice pedigree breeding stock, both sexes, 140 head ready for delivery.
Bankable notes or mortgages accepted as payment.

J. B. WAGNER,
Pasadena, Calif.

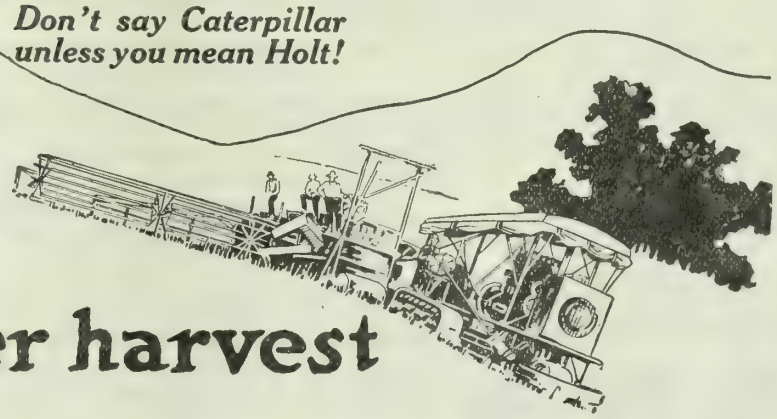
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AIR-SLAKED
HYDRATED LIME.

One Ton Hydrated Lime Equals 2 Tons Gr. Carbonate.
BOOKLET FREE.
Pacific Lime & Plaster Co.
Monadnock Bldg., San Francisco.

CATERPILLAR
Reg. U.S. Pat. Off.

Don't say Caterpillar unless you mean Holt!



for a cheaper harvest

For harvesting as well as for plowing, hauling, and other tractive work, the Caterpillar proves itself more profitable than any other tractive power. It gives steady service under the most severe conditions. It works without delays—saves trouble, saves labor, saves expense in your harvest. You can't work horses or mules as cheaply; other tractors won't give as carefree efficient service.

You needn't mind the grades nor the condition of the soil—the Caterpillar has plenty of surplus power for the hills and its track prevents slippage or loss of power in soft or ashy ground. After harvest, it's ready for other work—plowing, hauling or clearing.

If you want to get maximum profits, buy an outfit that will earn them—a Caterpillar Tractor, and a Holt Combined Harvester. Investigate these machines now—ask for our new 1916 Harvester Catalog, or Folder C 337 on our Caterpillar line. A postal request brings them.

The Holt Mfg. Company
Incorporated
STOCKTON, CALIFORNIA
SAN FRANCISCO, CALIF. LOS ANGELES, CALIF.
SPOKANE, WASH. PORTLAND, ORE.

The Caterpillar Tractor and Holt Harvesters were awarded the Grand Prize —highest possible award —at the San Francisco Exposition.

Why Not Buy the Proven Sire?

[Written for Pacific Rural Press.]

We recently saw a purebred dairy bull sold at public auction for less than the price that dairymen have been paying for his sons. He was a striking individual only six years old and with a world of service in front of him. His worth as a sire was demonstrated in the same ring by his heifers who had every indication of being heavy producers and who sold for good prices. Surely he was worth many times what a younger bull was, for he was tested and the youngster was not.

Previous to that we met a dairyman who sold a four-year dairy bull for the same price that he paid for it and he was congratulating himself that he had not lost any money. The man who bought that bull was fortunate, for the bull's heifers were outstanding producers.

We know a hog breeder that purchased one of the best herd boars in the State for his breed from another prominent breeder who could not use him longer. "I couldn't afford to buy such a boar if he was young," he explains, and yet he was sensible enough to pay a fair price for him and is rapidly establishing a high reputation for his herd on the strength of the old boar.

It is no unusual thing for a breeder to tell you that he sold the best sire he ever owned, before he realized his real worth. Why not pay more for the proven sire and less for the ordinary kind, is a question that every breeder might well ask himself.

STOCK BEETS FOR SILAGE.

To the Editor: Is there any reason why corn and stock beets would not make good silage put intogether? My cows will not eat it. I cannot locate the trouble. I wish you might outline the different mixtures one should make in filling the silo.—W. F. R., Bishop.

[Answered by Professor F. W. Woll, University Farm, Davis.]

[There would be nothing gained by placing stock beets in a silo, as they can be readily kept until needed, with very little loss of feed materials. There would also be practical difficulties in the way of siloing corn and stock beets together. Stock beets alone contain too much water to be made into silage, even if it were possible to preserve them this way. Root crops are, therefore, either left in the ground in most parts of California until wanted, or, especially in cold climates, are placed in shallow piles in the field or in root cellars, to be kept for winter feeding.

If the corn is cut when nearly mature, and is placed in an air-tight silo and carefully packed, the silage will be of a pleasant aromatic, acid flavor, and will be very palatable to farm animals. If cows have never eaten silage before, or have been fed good green feed, they may not take to it readily at first, but will soon learn to eat it, and after a while will prefer it to any feed, except perhaps pasture. Cows will, however, as a rule eat silage placed before them even when they have excellent pasture or green feed. If they do not seem disposed to eat the silage, omit green feed for a couple of days.

The common silage crops in this State are Indian corn, sweet sorghum, milo, Egyptian corn, kafir, feterita, volunteer grains, and alfalfa (mainly first crops); see Circular 138 of this College, a copy of which may be secured, so long as the supply on hand lasts, by addressing Director of Experiment Station, Berkeley, California.]

CONCENTRATES WITH ALFALFA FOR DAIRY COWS.

[Written for Pacific Rural Press.]

Among the dairymen in Butte county who have experimented with rice bran and polish as a dairy cow feed is S. A. Mealey of Gridley, who fed both the bran and polish in connection with beet pulp and alfalfa hay last winter.

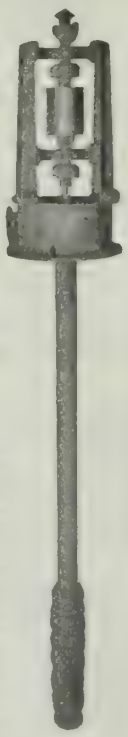
While feeding one of his cows 10 pounds a day of equal parts bran, polish, and beet pulp, she gave 70 pounds a day for a considerable period. Later the beet pulp was omitted and her production immediately fell off to 54 pounds daily.

Mr. Mealey's herd is entered in the local cow-testing association and is one of the few herds in Butte county that contains any purebreds. For some time he has been using a registered Holstein bull on his grade herd and during the winter has purchased 10 registered Holstein heifers that will freshen this spring.

To head this herd, he has purchased a bull calf sired by Colantha Sir Pontiac Aaggie; and he intends to purchase 15 more registered heifers this year.

Soak the new horse collar in water for a day before using it. The collar will then adjust itself to the horse's shoulders.

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is required with the
Krogh Deep Well Turbine Pumps



For bored or drilled wells from 10 inch inside diameter up; and for capacities of 250 to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.

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THE difference between a modern De Laval and any other cream separator is apparent at first sight. And if you will take five minutes to compare the separating bowl construction, the size, material and finish of the working parts, particularly those subject to wear, the manner of oiling, and everything which enters into the design and construction of a separator as a simple durable machine, you will still further *see the difference.*

Then if you go a step farther and turn the cranks of the two machines side by side for fifteen minutes, running milk or water through the bowl, you will see still more difference.

And if you will run the two machines side by side in practical use, as any De Laval agent will be glad to have you do, the De Laval one day and the other machine the next, for a couple of weeks, you will see still greater difference in the work of the two machines.

Every De Laval agent considers it a privilege to show the difference between the De Laval and other separators and to afford every prospective buyer the opportunity to try out and prove the difference to his own satisfaction, if on first examination he feels the slightest doubt about it. If you don't know the nearest De Laval agent write to the nearest office as below.

DE LAVAL DAIRY SUPPLY CO.
SAN FRANCISCO SEATTLE
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

GRANDSONS OF TILLY ALCARTRA
At Prices within Reach of Every Breeder and Dairyman.



A Grandson of Tilly Alcartra.

We have several splendid grandsons of this now famous cow, which we can deliver to you at prices which will suit the pocketbooks of every dairyman wishing to improve the quality of his herd, whether it be a grade or pure-bred herd. These bulls are sired by our herd bull, Prince Alcartra Korndyke and out of A. R. O. cows, and are the only living grandsons of a cow having a record of over 30,000 pounds of milk in a year. Such an opportunity for increasing production has never been offered **DAIRYMEN AND BREEDERS** in California, price and quality considered. Buy one of these bulls and solve your low production problem. Write

J. S. GIBSON CO., Box 97, Williams, Cal.
"THE NAME GIBSON INSURES QUALITY."

Digester Tankage
Send for sensible folder on feeding hogs
Western Meat Company
Animal Food Dept. 704 Townsend St., San Francisco

Marketing Grain as Pork.

To the Editor: In regard to conerting 20 acres of feterita and five f barley into pork at a profit: if the orn goes two tons per acre and the arley 15 sacks, how many hogs 80 100 pounds will eat the crop in 0 days? Would you advise threshng or hogging down the barley? By elling the corn at $28 to $30, I gure a net profit of $20 per ton.—. F. C., Lemoore.

Answered by Prof. J. I. Thompson, University Farm, Davis.]

[This amount of feed should arry about 175 pigs 90 days, proided they weigh approximately 100 os. to begin with. However, if the orn yields about a ton and the barey fifteen sacks, 100 pigs of the ame weight would be sufficient. his would depend, however, on the ge of the pigs. If they are a year ld or older and weigh only 100 lbs. hey can consume more than 500 os. in this time. If they are young igs and weigh about the same, they ould consume a little less than 500 os. during the 90 days. In the ame proportion the older hogs that re thin and weigh only 100 lbs. ould gain more rapidly when laced on abundant feed such as his, than would young pigs that had een grown along regularly up to his time. Taking average gains for verage amounts of feed, you would eed to get 7c to 7½c for these hogs o return you $28.00 to $30.00 for he grain. At the time these hogs ould be ready the market is liable to be lower than at most any other time of the year, and it is doubtful if they would net you as much as 7½c. Of course if you can buy them for quite a low price, your chances for some profit on the original weights would be that much in favor of the feeding proposition.

While it hardly seems practical to attempt to thresh so small an amount of barley, unless the cost would be unusual it would probably pay because of the extra feeding value that can be obtained.

It is also a question whether you can hog-down the feterita as economically as you can harvest and feed it. The cost of harvesting is relatively high, but it is not well digested unless ground.

MARES WITH COLTS.

[Written for Pacific Rural Press.]

Feed mares bran and oats before and after foaling and two or three times a week while working, to keep their bowels loose, is the advice of F. L. Dickman, who has charge of the Santa Anita ranch draft Percherons in Los Angeles county. Let the mares rest two weeks after foaling; then they can work until a week before foaling again.

The main mistake of farmers is that they don't feed enough the first year. Colts never make it up if starved then. Better keep them in while the mares work; for the travel tires them, the milk is hot, and makes them feverish. Let the colts eat with their mothers as soon as they will, and wean them at 6 months, or sooner if the mares are in poor condition. Nursing is harder on the mares than carrying foal, and should not be prolonged far into the period while the next colt is developing.

A filly should not be bred under two years old and not then if undersized. The strain of reproduction and nursing will permanently stop her growth and reduce not only her value but also the selling price of her offspring.

FEEDING SWEET CLOVER.

To the Editor: I would like to know the feeding value of sweet clover, when it should be planted, how much seed per acre, how to feed it; can it be siloed.—Mrs. K. P. O., Turlock.

[Answered by Professor F. W. Woll, University Farm, Davis, Cal.]

[Sweet clover is nearly equal to alfalfa in feeding value when cut early, before the blooming period. Cattle do not care for sweet clover at first as it contains a bitter principle, but they soon grow fond of it, if cut at an early stage, before it is coarse and woody. Its culture is not to be recommended, however, in regions where alfalfa can be successfully grown. Copies of Farmers' Bulletin 485 on Sweet Clover, can probably be obtained on application to the Secretary of Agriculture, Washington, D. C. This bulletin contains full information as to methods of growing and feeding sweet clover. I do not know of anybody who has made silage of this crop, but it will very likely make at least a fair quality of silage if cut before bloom or at beginning bloom, when it will not contain an excessive proportion of water or woody fiber.]



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The Sale You Have Been Waiting For

The Dispersal Sale

Of the Charles Jay Welch Herd

On the COPA DE ORO FARM, 3 miles from

LOS BANOS

Wednesday, June 28

105 Registered Holsteins *105*

85 FEMALES 20 MALES

Including a son of King Segis Pontiac (a son of Pontiac Clothilde De Kol 2nd, 37.41) and Elsie Veeman Wayne, a 30.92 four-year-old daughter of Sir Veeman Hengerveld. More than twenty females will be in calf to this great young sire.

WATCH FOR FUTURE ANNOUNCEMENTS.

Jas. W. McAlister, Chino, Sales Manager.

Col. B. A. Rhoades, Los Angeles, Auctioneer.

HILLCREST STOCK FARM

Thornton S. Glide, Prop.

Davis, Cal.

SHORTHORN CATTLE

Shropshire and Merino Sheep



KING LANCASTER,
Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

FOR SALE SINGLE OR CARLOAD LOTS

My range-raised bulls this year are the finest lot I have ever had.

THEY HAVE GRAND CHAMPIONS BEHIND THEM.

With the Live Stock Men.

DAIRYING AND DAIRYMEN.

B. F. Anderson of Stanislaus county recently shipped a purebred Holstein bull calf to Elko, Nev.

Alba Sadie Cornucopia Creetia, owned by Mrs. Anita Baldwin, made 101.333 pounds fat in 30 days.

Flax for winter cow feed is said to have given good results two years for A. J. Vierra of Kings county.

Geo. Kounias of Modesto has a Holstein heifer that gave 1½ pounds fat daily six months after freshening.

The Moss Rose Creamery of Salinas has just installed what is said to be the first market-milk pasteurizer in Monterey county.

Wisconsin is following California in establishment of a system whereby the State tests herds with tuberculin if reactors will be segregated.

E. S. Sattison of the Lindsay Guernsey Farm recently bought four cows from I. J. Scott of Pomona. All were sired by Mr. Scott's imported Glenwood bull.

President M. D. Munn was recently re-elected by the A. J. C. C.; J. P. Hutchinson, of New Jersey, treasurer; M. W. Potter vice-president, and R. M. Gow secretary.

A Humboldt dairyman recently found he was losing money feeding clover, alfalfa, bran, and cocoanut meal—all high protein feeds—without giving other carbohydrate feeds.

The A. J. C. C. which met in New York May 3, claims that more Jerseys qualified in the past year on annual tests for the Register of Merit, than have the cows of any other breed.

At the picnic May 13, of the members and patrons of the Dairymen's Co-operative Creamery of Tulare, Prof. Elwood Mead spoke on the Australian government control of the butter market.

A 24-year cow owned by Henry Baty of Tulare, now with her tenth consecutive heifer calf two months old, is giving three gallons of milk per day, according to the Visalia Delta. She is a high grade Jersey.

From April 6 to 12 reports of 556 Holsteins were accepted to entry in Advanced Register. Over half were with first or second calves. They averaged for 7 days 14.551 pounds fat from 400.1 pounds milk.

During the past two months, official tests have been conducted by University representatives for 32 California Holstein breeders, 11 Jersey breeders, 7 Guernsey breeders, and one of Dairy Shorthorns.

Two living calves and 2,005 lbs. of 85 per cent butter from 33,292.5 lbs. of milk between Jan. 7, 1914, and March 4, 1916, is the contribution from the Jersey cow Temisia's Owl's Rose 215973 owned by R. A. Sibley of Mass.

At the dispersal sale June 28 of the Chas. Jay Welch Holstein herd near Los Banos, a number of females bred to a son of King Segis Pontiac will be sold. King Segis Pontiac was out of the first "37-pound" cow, Pontiac Clothilde De Kol 2nd.

The 31st annual meeting of the Holstein-Friesian Ass'n of America will be held in Detroit, Mich., June 7. The question of providing 305 and 270 day classes in the Advanced Register and apportioning part of prize money to such classes will be decided.

The Milk Producers' Ass'n of San Francisco is the first co-operative ass'n to have the State appoint a member of its board of directors. Dr. Elwood Mead is the man, nominated by the Market Director as suggested by the association; and appointed by the Governor.

At the convention of milk producers in Washington, D. C., May 5 and 6, all the great dairy states were represented. They passed resolutions calling on the U. S. Dept. Agr. to detail men to exclusive study of abortion. They urged breeders to weed out tuberculin reactors, and that State and Federal authorities allow reasonable compensation for all reactors slaughtered.

SWINE BREEDERS AND STOCK.

The American Berkshire Ass'n will add $300 to Cal. State Fair premiums.

The American Berkshire Congress will be held at Sacramento during the State Fair.

Duroc breeders of Stanislaus county will meet May 20 to organize a purebred breed association.

The State Fair futurities for both Poland-Chinas and Durocs have more than the required number of entries.

The Cal. Swine Breeders' Ass'n has asked the State Fair officials to be ready to handle 1000 hogs at this next Fair.

Cattle Eat up Salty Forage Clean

Salting Hay When Stacking, an Excellent Plan.

(From Pacific Rural Press)

Two crops of fodder per year, which the stock eat up clean, are grown by a settler on the Natomas Consolidated project in Sacramento county. He grows purebred Duroc hogs and Shetland ponies, and claims that his oat hay cut early in May yields 3½ tons per acre. Immediately after it is cut, corn is planted; and if this doesn't mature it is cut as fodder when the kernels have dented. The ears are taken off and the stalks stacked in the yard with a large amount of salt which induces the stock to eat it more completely than otherwise. His neighbor, Mr. Jensen, salts his threshed wheat straw, which the cattle eat clean.

"An ounce of salt a day in the rations is all right for cows," says G. L. Stearns, formerly of the Vina Ranch. This is probably not enough, so there ought to be some stock salt in the yards for cows to eat at pleasure. Sometimes in feeding cows for official test, as much as 3 ounces per day is mixed in the feed. This makes the cows thirsty and they drink more water and produce more milk. But it is necessary to be very careful in feeding salt in the rations, for it is apt to give them the scours and is also likely to cloy their appetite so that they will not eat enough to make a record yield of milk.

The amount put into hay in stacking depends on the amount of hay each animal is expected to eat. Twenty pounds per ton in general may be all right if the stock has plenty of other food. But a cow which has nothing but hay will eat 5 tons per year if she weighs 1200 pounds, according to Mr. Stearns. At the rate of 20 pounds per ton, this would force the cow to eat a trifle over 4 ounces per day, which is altogether too much.

When it seems that there is danger of too much salt in the feed, a satisfactory test may be made by offering salt separately; and if the cow doesn't eat it, less of the salty feed may be given until she will.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—The Money Makers. Everything registered and cholera immune. Nothing to offer for immediate delivery. Sows now farrowing. The pigs from these sows will be ready to ship during late May and June. Am booking orders now for these. The offering represents the very best and most popular blue lines the breed produces. Sires and dams by Champions and Grand Champions. Let me have your orders early. C. B. Cunningham, Mills, Sacramento County, California.

REGISTERED DUROC-JERSEYS—Fall boars and gilts. Weanlings sired by an excellent son of the 1020-pound Royal Muncie. We have pigs sired by this boar weighing 240 pounds at 7 months, and out of line bred Golden Model, Crimson Wonder, Orion, Chief, and Colonel sows. For information write Haden Smith, R. 1, Box 84D, Woodland, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IRA Wonder won first and Reserve Championship P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

LARGE YORKSHIRE SWINE—50 choice gilts, open or bred. 20 yearling and Fall boars at attractive prices. You are at liberty to return what we ship you at our expense if price and quality are not satisfactory. Riverina Farms, Paradise Road, Modesto, or Box 2250, San Francisco, Cal.

WANTED—Young married man to raise, keep records and fit for show Pure-bred Poland China Hogs. Salary and length of time engaged will depend entirely on the results you are able to show. Do not apply unless you are a good man with practical, successful experience and have a strong appetite for plenty of work and long hours. Geo. A. Smith, Corcoran, Cal.

REGISTERED DUROC-JERSEY — Weanlings, shoats, gilts and boars Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES — World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

RANCHO RUBIUS DUROCS according to winnings at last State and World's Fairs, are best sows in the State. Weaned pigs, large litters, now ready. $15, either sex. Elmer Lamb, Ceres, Cal.

DUROC-JERSEYS—Some great weanlings of both sexes by "RIVER BEND HIGH MODEL." Improve your herd by introducing this blood. RIVER BEND FARM, St. Helena, Cal.

REGISTERED DUROC JERSEYS from Daggs, Ross and Fraser stock. Ten sows, one boar, 25 young pigs. Sows all bred or have pigs. Bargain. G. B. Millen, Galt.

BLATCHFORD'S PIG MEAL weans easily and safely, no trouble; no milk. Write for free folder. "The Safety Route from Pighood to Porkage," Coulson Co., Petaluma

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H Croley Co., Inc., 631-637 Brannan St., San Francisco

LARGE, QUICK MATURING registered Berkshires—Both sexes, $10 each for weanlings. Older ones at farmer's prices. J. M. Bomberger, Modesto, Cal.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen S. Day, Box 1140, Sacramento.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo V. Beckman & Sons, Lodi, Cal.

REGISTERED DUROCS from Eastern sows One yearling and several Fall gilts. No culls. S. S. Southworth Napa, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H Thompson, Novato, Cal.

FOR SALE—600 hogs, all ages. Registered Duroc-Jersey stock. Address C. H. Minto, 357 Van Ness Ave., San Francisco.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

FOR SALE—Fancy belted Hampshire hogs. Well belted young sows and boars, registered. Prices reasonable. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonsall, California.

REGISTERED POLAND CHINA SWINE — Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

POLAND CHINAS—250 lbs. in six months our aim. Imported sows. None better. Linn & Porter, Route A., Modesto, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

REGISTERED BERKSHIRES—BOARS—5 and 6 months old, $15 and $20 each. Also a few year-old ones. All pure-bred animals. G. A. Casey, San Jose, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, $10. H. E. Boudier & Son, Napa.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSRIRE PIGS — Write or call Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

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REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

CHAS. GOODMAN — Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

READAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Ripon, Cal.

REGISTERED DUROCS—All ages. One yearling boar. Satisfaction guaranteed. Frederick M. Johnson, Napa.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

SHEEP AND GOATS.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

THE BULLARD FLOCK RAMBOUILLETS—Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

FOR SALE Shropshire bucks, yearlings and lambs. Individuals to car lots. Purebred but not registered. J. R. Bloom, Dixon.

WANTED from 50 to 100 head of young Angora goats. A. Gaul, R. 5, Box 71, Stockton, Cal.

KAUPKE BROS., WOODLAND, CAL.—Breeders and importers of Hampshire sheep

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets, Hanford, Cal.

BEEF CATTLE.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Palcines Ranch Co., 320 Sharon Bldg., San Francisco, or H. J. Macomber, Palcines, Cal.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

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DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenso, Cal.

VANDERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller and Lux, Colony Farm, Dos Palos, Cal.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

DAIRY CATTLE.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke Co., Lockeford, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

FOR SALE—30 head of large dairy cows, mostly Durhams; young and good milkers; healthy condition. For prices address L. Camenzini, Mt. Eden, Cal.

FOR SALE—Four full blood Holstein cows, 4 to 6 years old. One fresh, others freshen this month. R. S. Burrough, Cloverdale, Sonoma Co., Cal.

FRANK MEACHAM, Petaluma, California — Breeder Red Polled Cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

LINDSAY GUERNSEY FARM—I am offering for sale calves of both sexes; well bred. For particulars write or call. E. S. Sattison, Lindsay, Cal.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

BREEDERS OF REGISTERED SHORTHORNS — Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

BULL CALVES from a grandson of Colantha Johanna Lad and from a son of King of the Pontiacs. J. W. Benoit, Route C, Modesto, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

HOLSTEIN BULLS out of A. R. O. cows, sired by a son of King of the Pontiacs. Prices reasonable. J. H. Harlan Co., Woodland, Cal.

REGISTERED HOLSTEINS—32 high-grade Holstein heifers coming fresh this Fall for sale. E. E. Freeman, Route B, Modesto, Cal.

TWENTY-EIGHT high grade yearling and two-year-old Holstein heifers for sale; some bred. K. W. Abbott, Milpitas, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs butter as two-year-olds. A. A. Jenkins, Tulare.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young Stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

TWENTY HIGH GRADE YEARLING HOLSTEIN heifers for sale J. S. Moore, Manteca, Cal.

REGISTERED JERSEY BULLS from Register of Merit cows. D. F. Conant, R. "B," Modesto.

AYRSHIRES—Registered: all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BREEDERS OF A. R. O. Holstein-Friesian cattle exclusively. Dirk Dairy Farm, Lemoore.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEYS — Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal

REGISTERED HOLSTEIN CATTLE and Duroc-Jersey Hogs. Prices always reasonable. W. H. Ginn and Son, Corcoran, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

BREEDER of Registered Holstein Cattle. Ernest Otto McClure, R. 2, Modesto, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse. Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED HOLSTEINS—Golden West Herd, D. & H. Rowles, Modesto.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Coley Co., Inc., 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells live stock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

H. Marsh, Poland-China breeder near Modesto, had four sows farrow last week with 8, 9, 10, and 12 strong pigs respectively. He accounts for the large strong litters by the care and feeding of the sows before and during farrowing.

The River Bend Farm futurity litter for the State Fair next September is attracting much attention. The Farm is finding good demand for pigs from their herd boar, River Bend High Model, which weighed 475 pounds at one year old.

Haden Smith, Duroc breeder of Woodland, reports the following sales: 3 bred sows to Jack London, Sonoma; 1 bred sow and 1 service boar to J. H. White, Sacramento; and service boars to J. J. Morris, Colusa; Baird Bros., Woodland; Louis Farnsworth, Colusa; Mrs. W. L. Hale, Davis; J. T. Donaldson, Modesto.

Geo. A. Smith of Corcoran has recently sold purebred Poland-China boars to Mrs. Maggie McDermott, Maxwell; S. V. Hawley, Hanford; Mrs. G. Muscio, Santa Maria; R. L. Vorhies, Holtville; W. K. Tucker, Coalinga; T. H. Jack, Parlier; Brown Bros., Paso Robles; Joseph Hill, Lovelock, Nevada; and Edward Haven, San Jose.

E. F. Curtis of Napa reports the following spring Duroc sales: One boar and 2 gilts to R. A. Holdridge, Dixon; 1 bred sow to E. Puigh, Eureka; 2 gilts to G. D. Walton, Red Bluff; 10 head to H. J. Middletown, Napa; 18 head to L. Cullen, Yountville; 18 head to C. E. Durrell, Napa; 1 gilt to D. McNair, Napa; 1 boar to Mrs. Hall, Napa; and one gilt to A. B. Johnson, Newport Beach, Los Angeles.

BEEF CATTLE AND BREEDERS.

The Howard ranch near Biggs has been sold to become a stock ranch.

S. J. Vincent of Porterville bought a purebred Durham bull from J. E. Ball of Woodland.

The University Farm at Davis recently secured two very choice registered Shorthorn heifers from the Paicines Ranch at Hollister.

Porterville district has beaten its high record for beef cattle shipments. This season it was already over $500,000 worth May 6.

Wm. Bemmerly of Woodland recently sold 21 registered Hereford heifers and bulls to J. A. Niles and Vincent Bros. of Porterville.

The Central Stockmen's Ass'n will meet in Salinas July 12 and 13. All cattlemen's organizations in the State are invited to send delegates.

R. R. Cartwright has moved his purebred herd of Red Polled cattle from Calaveras county onto his newly acquired ranch near Peters, San Joaquin county.

W. S. Guilford of Willows states that he soon expects to import a herd of registered Shorthorns from Illinois for foundation purposes on the Butte City Ranch in Glenn county.

Straight horse bits in cattle's mouths to prevent their bloating on alfalfa pasture, are said to be very successful with P. J. Conway, Harry Warren, and other Lyon county (Nev.) ranchers. The cattle can't eat so fast.

Thornton S. Glide shipped two purebred Shorthorn bulls from his ranch at Davis to the Hawaiian Islands during the past week. Mr. Glide now has his cattle off the mountain range, on the tule pastures. He still has a small bunch of fine yearling bulls.

HORSES AND SHEEP.

Salinas valley lambs have sold as high as $5.65 this season.

Herman Skow, a Percheron stallion owner near Roseville, is using a Caterpillar to handle his 3,200-acre grain crop.

A bulletin on Sheep Scab may be obtained free by addressing Editor of Publications, U. S. Dept. Agr., Washington, D. C.

The University Farm at Davis has purchased three registered Percheron mares and a registered stallion from the Paicines Ranch at Hollister.

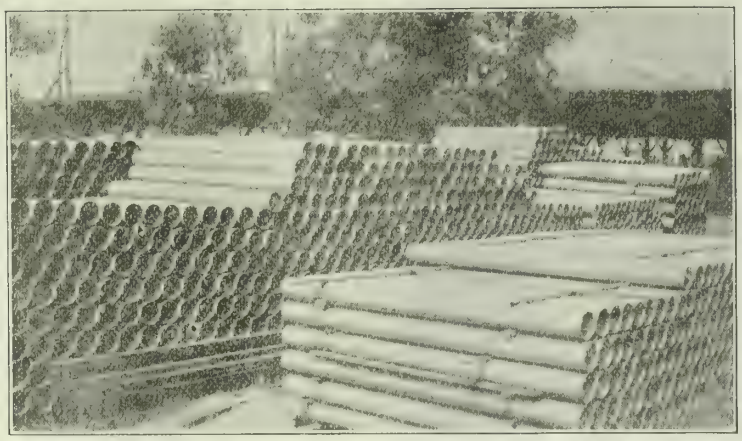
Ed. Bourdieu of Stone Canyon, Monterey county, reports having recently sheared over 32,000 pounds of wool from 4,000 sheep, having sold 2000 lambs this spring.

About 100 cars of sheep and 65 cars of cattle are being moved from Rocklin and White Rock districts by rail to the forest reserve ranges around Truckee.

MISCELLANEOUS.

The Napa County Livestock Ass'n on May 12 elected Homer Hewins of Calistoga president, W. L. Mitchell of Napa vice-president, and W. W. Everett of Rutherford secretary.

SAVE THAT CROP!



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"WESTERN"

Surface Irrigation Pipe

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Best for Strength and Durability.

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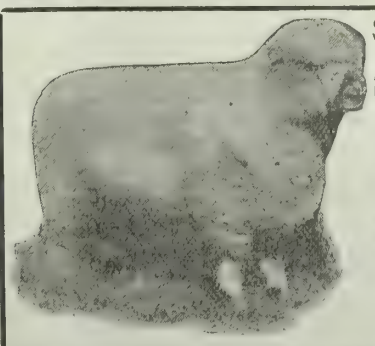
18 HEAD BULLS, HEIFERS AND COWS

will be exhibited and sold at auction at Butte County Exposition.

Chico, May 26

LINES—Gertie's Son—Gertie's Lad—
Melias Fox—Gertie of Glynllyn—
Anna Burner, etc.

Owner and Breeder CHAS. L. LEONARD



San Ramon Shropshires

WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second. Yearing Ram, First. Ram Lamb, First, Second and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total including American Shropshire Specials of 15 Firsts, 9 Seconds, and 6 Championships.

PUREBRED REGISTERED RAMS AND EWES.

Individuals or Carload Lots.

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DUROC JERSEYS

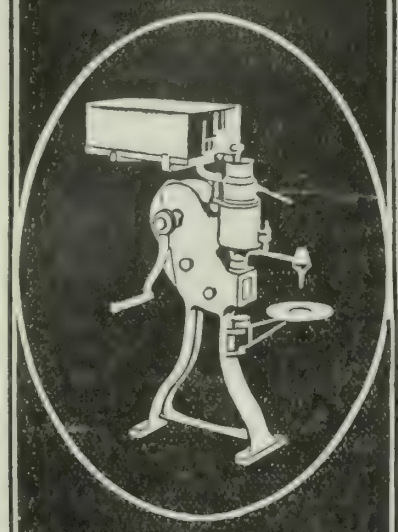
WE OFFER EIGHTY HEAD OF NINE TO ELEVEN MONTHS OLD REGISTERED GILTS, OPEN OR BRED TO OUR NOTED HERD BOARS. A UNIFORM BUNCH THAT WILL PRODUCE YOU THE BIG EASY-FEEDING KIND OF PIGS. Ranches Holtville and Devore, San Bernardino Co.

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GOMBAULT'S
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A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniaments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish* Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

Tagus Ranch

BREEDERS OF PUREBRED
Holstein Cattle
Polled Angus Cattle
Duroc Jersey Hogs

Tagus Switch, Tulare Co., Cal.

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SCIENTIFIC PRESS PATENTS PATENT AGENCY
911 Crocker Bldg., S. F.
Circular containing 100 mechanical movements mailed free.

Livestock in the Sacramento Valley.

(Continued from page 609.)

cost money, and not only show a disposition to pursue better methods, but confidence as well.

Further north on the east side of the river, one finds renewed confidence in the purebred industry manifested at the great Vina ranch of the Stanford University. Here one of the oldest and largest herds of Holstein cattle in the West is maintained. For the first time authenticated testing is being done in this herd and the policy from now on will be to test every cow. A story of progress could be based on this great ranch alone, if space permitted.

Dairy and Hogs. — Swinging around the northern end of the valley into the west side, and not including Tehama county where sheep and hogs are commanding unusual attention, one finds the government's irrigation project at Orland; a natural location for alfalfa and rapidly assuming permanent aspects in dairy cows and hogs.

A cow testing association has recently been formed; and by the importation of well-bred Jersey cows and purebred bulls the average profit per cow is attaining heights which makes hay-selling look very unattractive.

In the lower end of Glenn county conditions are mending rapidly, the livestock interest here being chiefly manifested in purebred hogs at the present time. During the past year the Berkshire has made great strides in the district, and in a remarkably short time the district has jumped from seclusion in hogs to a top place in the ranks of leading Berkshire counties of the State.

Holstein Development. — Perhaps the most hopeful sign of the times in Colusa county is the development of a great Holstein herd on the former grain ranch of the J. S. Gibson Co. at Williams.

Here also, one finds material for an entire story on development, for it is a story of transformation of the grain ranch into diversified endeavor.

Started five years ago, this herd has been constructively handled; and during the past year authenticated testing has been started with surprisingly good results. Not only is the herd worthy of respect on account of the herd sire being a son of the world famous cow Tilly Alcartra, but also because of the high producing individuals to be found on the ranch. Its result will be far-reaching in Colusa county as in other counties of the State.

The permanence of livestock in Yolo county is too well established to require tabulation here. Many of the greatest herds and flocks in the West have been and still are maintained there, and their owners are equally alive to the future opportunities as they have been in the past.

No effort has been made to completely describe the entire livestock industry in Sacramento Valley. Space forbids that. But what is found in the districts mentioned is being reflected in all other parts as well. It is not so much an awakening to livestock in most cases as it is a settling down to constructive methods.

ARE LIVESTOCK LOANS SAFE?

To the Editor: In your issue of Feb. 12 you have an article headed "The Law Does Not Favor Bank Loans." As we are handling cows and selling largely on time and taking mortgage for the same, we would like more definite information on live stock mortgages in California and would deem it an accommodation if you would tell us where to get the law from which your item is taken.—F. B., Lakeside.

[As long as you are selling stock which is your own, and taking a mortgage on it for the balance, you are perfectly safe with the present laws.

If, on the other hand, you were to loan money to a buyer who in turn purchased stock with that money, and gave you a chattel mortgage as security, such a mortgage would not allow you to take possession of the stock if they were moved from the ranch they were on at the time of making the loan.

This is not so clearly stated in the Bank Act of the State of California, copy of which may be had by application to the State Banking Department at either Sacramento or San Francisco, but it is the way the law has been interpreted by several leading attorneys in this State, whose opinions have been secured by men who were anxious to make loans on

Importation of Eastern Stock

I will make a trip East in the month of **June** to purchase several carloads of **Live Stock** for California breeders.
My large acquaintance with Eastern breeders enables me to buy high-class animals at moderate prices.
This is an excellent opportunity for those desirous of either improving or adding to their herds. **Orders solicited.**
Address W. M. CARRUTHERS,
CARRUTHERS FARMS, Mayfield, Cal.. or 513 HEARST BLDG., San Francisco.

HOPLAND STOCK FARM
REGISTERED SHORTHORN BULLS
REGISTERED BERKSHIRES (Boars, Bred Sows and Gilts)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize
Senior Yearling, P. P. I. E.
3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
SAN FRANCISCO OFFICE, 1210 FLOOD BLDG.

BIG TYPE POLAND CHINAS
Gilts from Weanlings to one year old. Bred or open. Boars from weanlings to 8 months.
THE BROWNING STOCK FARM.
W. H. BROWNING, PROP. WOODLAND, CAL.

Holstein Bull



Peterje Cornucopia Creamelle.

The Dam of this bull is almost a 25-lb. cow; her average fat testing, 4.74%. This high percentage in fat of the dam shows that this bull would be an **excellent buy** for any dairyman who aims to improve the butter-fat output of his herd.

Write or come and see him.
F. STENZEL,
San Lorenzo, Calif.

C & S



C. & S. Clean & Slippery Grease makes the wheels go 'round four at a time and no stalling.

In 1-lb. tins at your dealer

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Stanford Holsteins

HERD SIRES:
King of the Pontiacs 14th.
Dutchland Col. Sir Ormsby.

High class young bulls of serviceable age for sale, sired by one of our great bulls and out of A. R. O. cows. Prices right.

STANFORD VINA RANCH
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GET STARTED RIGHT
Registered Duroc Jerseys.
$10 each PIGS $10 each
are money makers.
What's the use of raising "Scrub Hogs" when purebreds may be had at this price! They grow faster. Send today.
NEW ENGLAND CALIFORNIA CORPORATION
RIPON, CALIF.

Shorthorn Bulls
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: : Heifers : :
On April 21st we arrived from Missouri with a carload of choice registered Bulls and Heifers.
INSPECTION INVITED.
H. L. & E. H. MURPHY,
Perkins, Sacramento Co., Cal.

Tamworths and Duroc-Jerseys
We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.
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W. O. PEARSON, Prop.
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Model Herd of
BERKSHIRES
Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 180837 and Breed's Model 165859, both winners of blue ribbons at State Fair.
Descriptive catalog upon request.
J. L. GISH, Laws, Inyo County, Calif.

U. S. Gov. experts report that oils correctly refined from asphalt-base crude "distill without decomposition" (do not break up and lose their lubricating value under cylinder heat) and "are much better adapted to motor cylinders, as far as their carbon-forming proclivities are concerned, than are paraffine-base Pennsylvania oils."

Motorists who use Zerolene, an oil scientifically refined from asphalt-base crude, back up the experts with reports such as these: "Covered over 16,000 miles without adjusting valves or cleaning out carbon."—"The carbon taken out of this car in 50,000 miles amounted to less than an ounce." Zerolene is for sale at dealers everywhere and at service stations and agencies of the Standard Oil Company

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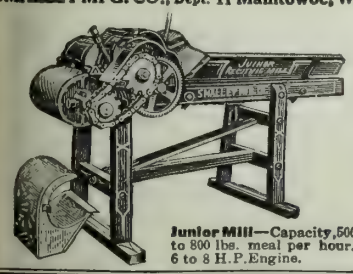
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Patented re-cutting attachment makes dandy Alfalfa Chop for fattening cattle, sheep, hogs and poultry. *Handles leaves, stems and all without waste or injuring color of the hay.* Sell your No. 1 hay and mill the *off-grades* for feeding. Make combination feeds from clover, rice straw, bean straw, pea vines, oats and rye, or dried cornstalks. Capacities 1200 to 2700 lbs. per hour. Re-cutting attachment on Junior Mill makes 500 to 800 pounds of meal per hour with 6 to 8 H. P. engines.

Powerful, whirling, bevel-edge blades slice like a lawn mower, fine even and uniform. Better silage and greater tonnage in the silo. Grip Hook Feed Table feeds automatically, saving expense of two or three men depending on size. Blower built independent of cutter so you increase or decrease fan speed without changing speed of knife shaft. Patented low-speed, one-pulley, chain drive saves 1-5 to 1-4 power cost, cuts out unnecessary wear on belt. Extension table on hopper makes faster, cleaner job.

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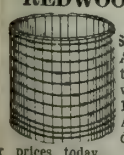
SMALLEY MFG. CO., Dept. 11 Manitowoc, Wis.



Junior Mill—Capacity, 500 to 800 lbs. meal per hour. 6 to 8 H.P. Engine.

Smalley Silo Fillers Sold by Pacific Implement Co., San Francisco, Cal.

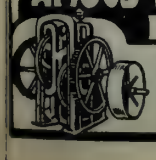
REDWOOD TANKS—SILOS.



Thirty-five years in this Business in Stockton.—A 500-gallon tank, $8.00. A tank 6 ft.x2½ ft., $7.50. Other tanks equally cheap. I deal direct with the consumer. You will save 10% to 25% by dealing with me. All sizes in stock. Clear dry redwood direct from the mill by vessel. Write for prices today. Latest improved machinery. Doors, Windows, Frames, Mouldings.

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livestock, but who do not want to go into the livestock brokerage business.—Editors.]

VETERINARY QUERIES.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

VACCINE FOR CALF SCOURS. SEPTICEMIA IS BLOOD POISON.

To the Editor: Where can I get vaccine to give young calves for scours? Three promising calves have taken scours within 12 hours after birth and died in two or three days. They have had only their mothers' milk. Has this new disease septicemia anything to do with it?—T. T., Yuba Co.

[The Cutter Laboratory, Berkeley, supplies this vaccine. Septicemia is no new disease, but a name applied to blood poison.]

CALVES DIE SUDDENLY.

To the Editor: My calves are dying when six weeks to two months old. They show no signs of sickness, die suddenly. By examining their stomachs I find a half pound of clabber milk. It resembles a piece of bread, only it is rubberlike. I have been feeding them fresh milk from the separator.—Subscriber, Arcata.

[This is acute indigestion. It is probably caused by overfeeding. Feed oftener in smaller quantities.]

VACCINE FOR INFLUENZA.

To the Editor: An eight-year-old mare has been fed dry alfalfa hay all winter, then turned onto green alfalfa; about two weeks developed trouble located in the throat—she is unable to swallow any food, but can take a small amount of water; also, she froths quite freely at the mouth and occasionally has a thick yellow-colored discharge from the nose. Is it contagious?—G. P. A., Colusa.

[This is influenza and a highly contagious disease. Call in your veterinarian and have him give the vaccine treatment.]

COW MOANS WHILE EATING.

To the Editor: A cow came fresh a month ago. She is very thin, eats for a while, stops, chews awhile, and eats again. Sometimes she moans as if in pain when she starts to chew.—M. C., Walnut Creek.

[This cow probably retained part of her afterbirth. Douche the womb with a 1-1000 solution potassium permanganate.]

COWS AND HOGS ON GRANGE FARM.

[Written for Pacific Rural Press by Susan Swaysgood.]

"Doing things" appears to me the right words to use in connection with the Grange Stock and Poultry Farm. This farm is situated in the beautiful Napa Valley east of Yountville and has nearly six hundred acres of hill and valley land in which to "do things." The stock, consisting of about thirty or more good grade cows, is being bred to a very fine pedigreed bull.

The Duroc swine herd is sired by Monarch of the Nook, a splendid animal weighing seven hundred pounds in medium flesh. He is out of Golden Rod and Pacific Queen. Monarch of the Nook sired the first prize boar under one year at the Oregon state fair in 1914, the second prize gilt under six months at Oregon state fair in 1913, and the reserve champion of the P. P. I. E., 1915. This boar recently sired a litter of nineteen pigs, eighteen of which lived. Among the many sows are Perfect Princess and Red Perfection, who was bred to I Am A Colonel.

In starting this farm, Mr. Grange's idea is to have the best money will buy, then breed scientifically and progress along the road to success.



Get all your Cows Earn

Every milch cow in your herd earned a nice profit for you that your separator *failed to deliver.* Where did the money go? Let us show you.

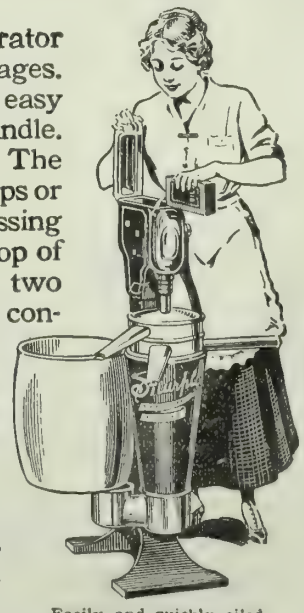
Every separator (except the New Sharples) loses cream if not turned at the exact speed marked on its crank. Experiment Stations and independent researches have brought out the surprising fact that 19 out of every 20 separator users turn their machines under speed and thus lose $2.40 to $12 per cow per year. (See Purdue Bulletin No. 116).

The New Sharples skims clean whether turned *fast* or *slow.* It will get you this extra profit your cows make for you, but which your fixed-feed Separator throws away.

THE NEW SHARPLES SUCTION-FEED

Separator feeds the milk into the bowl in exact proportion to the separating force. At 45 revolutions it skims clean; at 55 revolutions it skims clean; and at 35 revolutions it skims equally clean and always with *even quality cream.* No other separator has these two valuable features—*clean skimming* and *unchanging density of cream at varying speeds.*

The Suction-feed Separator has other important advantages. The hollow tubular bowl is easy to clean and easy to handle. There are no discs to wash. The oiling is automatic; no oil-caps or oil-holes; no dripping or mussing of oil; no oil waste. The top of the large supply-can is only two feet from the floor—a great convenience in filling.



Easily and quickly oiled. Once a month is sufficient.

These are some of the reasons why you should have a New Sharples and *get all the cream money all the time.*

Read the full story in our new book, ***"Velvet" for Dairymen*** which also explains our free trial plan. We will gladly send you a copy. Ask for it—*now.* Address Dept. **31.**

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Farm Poultry for Profit.

WHILE CHICKS AND TURKS ARE GROWING.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Last year and again this season I have had enquiries as to "what ails young turks?" The feet and legs dry and toes turn up making it difficult for the turks to walk.

Now unless a full description of feeding and brooding is given it is very hard to advise in these cases, and it involves more writing than can be allowed in a short letter.

I find, however, that most heated brooders have a tendency to dry up the tissues of a turk's legs and feet quicker than is the case with chicks, though it will sometimes do this with chicks. But aside from the heated brooders there is a tendency to cramps, rheumatism, and fish-skin disease in both turkey poults and chicks. In the latter case the skin resembles a chicken with scaly leg except that there is no insect at work and the trouble comes from some functional disturbance.

For this trouble a daily rubbing, or rather painting the surface with an ointment of five parts plain vaseline to one part "oleate of zinc" will soften the skin and take away the tendency to curl up. Another remedy is to dip the legs in sheep dip made rather strong, of course keeping the feathers out of it, and feed more green feed; if the birds do not eat it readily chop fine and mix with the dry mash, when they will usually pick out the little pieces of greens and eat readily. But the local application is most to be depended on and should not be neglected. For cramps or rheumatism make a good bed of fine cut hay or straw on top of the sand or board floors. You will find this will prevent and cure, too.

Leg weakness that sometimes attacks chicks of the large breeds is quite distinct from these things, and must not be mixed up with them. Leg weakness is usually caused by too heavy feeding of starchy foods, so that the body grows too heavy for the strength of the bone. The thing to do is to cut out some of the carbonaceous food and feed more bone and green feed until one part of the chick's anatomy is as strong as the other and rub the legs with tincture of arnica. I have seen odd cockerels that grew so fast the legs got weak and they spraddled all over. For these there is nothing but the hatchet before they get poor, as they would never make breeders. Plenty of ground bone or meat meal in the feed will adjust matters if corn and corn meal is kept away from the chicks. But the feeding of these chicks requires care, as they never can stand fat-forming foods like the smaller breeds.

And there is trouble that attacks small breed chicks, mostly Leghorns, through a too starchy diet; that is, the wing feathers grow too rapidly for all around development. When this occurs, cut off some of the cornmeal and feed a little more meat and bone; also cut the tips off the wing feathers and they will stop growing for a while. If the feed is well balanced the feathers grow evenly all over the body just as nature intended them to. Too much mash is answerable for a lot of things that chicks are troubled with; there must be a certain amount of whole or hard grain to keep things balanced. Then the mineral that comes from the green feed is a great help in keeping chicks healthy and their growth all around instead of being too much in one way. Too much growth in feathers is always at a loss of growth in some other way, either in bone or muscle.

SALT FOR CHICKS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

A young man told me his chicks were toe picking and I told him to give them a dose of salt and water, a teaspoonful of salt to a quart of water. Instead of a dose, he gave continued treatment all day and killed quite a number of chicks besides making others very sick.

If anyone told me to "take a pill" it strikes me forcibly that I would just take "a pill"—not keep taking pills all day.

The Oregon Agricultural College has a White Leghorn that is supposed to have b[roke] the world's record for the numbe[r] of eggs produced during a 5-year period. This hen, named "Oregona," recently completed her fifth year, with a record of 987 eggs, and during the first 13 days of her sixth year, she brought the record up to 1000 eggs.

The addition of ground or broken shell to the poultry ration has been known to increase the egg production nearly tenfold.

RAISING AND FEEDING WINTER EGG-LAYERS.

[Written for Pacific Rural Press by W. M. Baker, Grimes.]

For the lady from Exeter who wants to know how to make hens lay in winter I will tell you how my wife and I did it. Our 160 hens cleared us $30 per month the year through and our heaviest egg checks were in December, January, and February.

The first essential, according to our experience, is to have the chicks hatched during the first half of March, as that will bring them to a laying age in September or October, after the hot weather of summer is past and before the cold weather of fall starts. Our breed, White Leghorns, will lay at six months if forced, but it does not pay, as they are too young to keep it up. If you hatch them so as to come to maturity after cold weather starts, they will not begin to lay until the following spring, but if they start laying before the cold weather starts they will keep it up all winter if properly handled.

The First Mistake That Was Ever Made



EVE made the first mistake when she plucked the forbidden fruit and from that time till now, mistakes, big and little, have occurred.

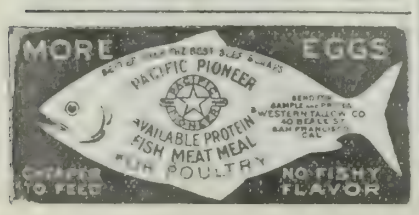
One of the mistakes that countless ranchers are guilty of is the selection of poor pumps and gas engines.

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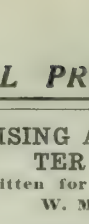
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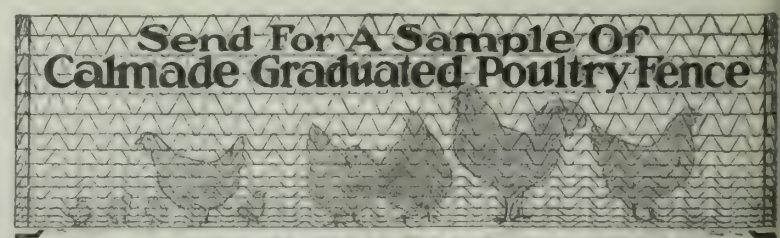
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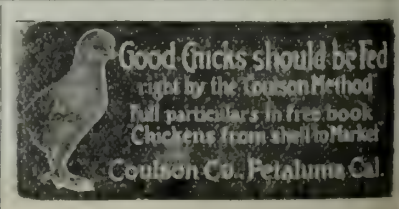
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BABY CHICKS—Strong and healthy, from high-bred free-range White Leghorn stock. Prices on application. Western Hatchery, W. S. Waldorf, Petaluma, Cal

NOT TOO LATE for chicks if you get our White Orpingtons, trapnested and bred for early maturity as well as heavy laying. Begin laying at five months, just when eggs are highest. Baby chicks and hatching eggs for sale from 1000 grand range-raised birds known throughout the West as big money-makers. Prices reasonable. Catalog free. WHITTEN RANCH, R. D. 5, Box 647, Los Angeles.

WYANDOTTES—Beautiful, useful and profitable. Best for showing; best for egg-laying; best for table. Largest Wyandotte Farm in the Southwest and the only complete family of Wyandottes known. Eleven varieties and each from the finest strain bred in the United States. Hatching eggs and baby chicks reasonable. Write us for full particulars. VILLA WYANDOTTE FARM, Villa Road, Lamanda Park, Cal.

ALL OUR PURE-BRED CHICKS from Hoganized, trapnested flocks, have been reduced in price. Barred Rocks, Rhode Island Reds, Black and White Minorcas and Anconas, 12½c each, 1 or 1000; Brown Leghorn, 10c each, $9 for 100; White Leghorns, 9c each, $7.50 for 100. Brown's Poultry Yards, 2550 San Pablo Ave. Phone Oak 2183, Oakland.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired Heavy Winter Layers. W. C. Smith, Prop., Corning, Cal.

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STIRLING FARM—Place your order now for eggs and chicks from Stirling Layers. Utility Leghorns exclusively. Our pure-bred tested layers are bred for size, vigor, quality and heavy-egg production. Send for descriptive circular and prices. Route 2, Box 1416, Sacramento, Cal.

BABY CHICKS—We will hatch during May and June, so order now and get them when you want them. All good strong youngsters from good layers. White and Brown Leghorns, Barred Rocks, R. I. Reds and Black Minorcas. Campbell Poultry Ranch, Campbell, Cal.

PLACE YOUR ORDER NOW for May, delivery of White Leghorn Chix from Jackman's purebred, heavy egg-producers. You get the best at lowest price. $8 per hundred, $75 per thousand. Sunnyside Poultry Farm, R. 2, 1610 Vine St., Sacramento, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., INC., Poultry Supplies, San Francisco.

INCUBATOR CHICKS—White Plymouth Rock, White and Brown Leghorn. Highest class of stock bred to standard and to lay. If you are interested in the best send for catalogue. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

THOROUGHBRED HATCHING EGGS—Barred Rock, R. I. Reds, Buff Minorcas, White Rocks, Blue Andalusians, India Runner Ducks. Ducklings and breeders on sale. Cedarhurst Ranches, R. D. 2, Sacramento.

CHICKS!! Day-old chicks from my healthy vigorous, heavy-laying, free-range stock of Hoganized S. C. White Leghorns. Price, $7 per 100. H. P. Hansen, Route 4, Box 177, Petaluma, Cal.

BUFF ORPINGTONS—Eggs from high-class matings that have correct color, shape and large size. Choice exhibition and utility stock for sale. No chicks. E. TALBOTT, San Mateo.

PLACE YOUR ORDERS with the SANTA CLARA HATCHERY for the different breeds of baby chicks and baby ducks. Joseph A. Bihn, Prop., San Jose, Cal., Route 6, Box 336C.

ORPINGTONS—BUFF AND WHITE—Black Minorcas and Carneaux pigeons. Breeding stock at half price as I am selling out. Mrs. Susan Swaysgood, Route 2, Pomona, Cal.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized, heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorcas, White Leghorn, stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

HERE IT IS—White Rock baby chicks. $15 per 100. Hatching eggs, $1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ceres, Cal.

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CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

They should have roosting houses as tight as possible on three sides and as open as possible on the other, so as to have plenty of fresh air and no drafts. Needless to say these houses should be kept clean and free from lice, and the hens should have a box of dry dust to wallow in to keep the body lice off. Unless you provide it in winter, they will find none. The run should be well drained and the hens have cover to go under in stormy weather. A hen with wet, cold feet will not lay eggs. Green feed must be provided, or the hens will not lay. We bought cabbage and fed two heads a day to 160 hens. This cost us at that time 50c per dozen and it was a good investment. In the morning we fed in winter, yellow corn, wheat, rolled oats, and rolled barley mixed dry; at noon yellow corn and at night a mash which we make by soaking rolled oats or rolled barley 24 hours, quite sloppy but mixed with shorts until it was quite dry and crumbly. In this mash we put a quart of meat scraps and a handful of granulated charcoal. For our 160 hens this mash just filled a 5 gallon coal oil can. We fed it hot in winter and cold in summer and at night for two reasons. Fed hot at night it sent the hen to the roost with a well-filled crop of hot feed and we imagined it kept them warm at night. Then, too, mash is more or less loosening to the bowels and it is better to have the droppings on the dropping boards than in the nest.

Telling Their Age. — When your chicks are hatched take a sharp knife and slit one certain web in their feet so you can look at your hen and tell how old she is. Do this before they eat for the first time, and it will not bleed. Never keep a hen through her second molt. Individual hens will sometimes lay when they are two years or older, but as a flock they will not lay much.

We kept shells, grit, fresh water and hopper feeders filled with bran before our hens at all times. Our March hatched chicks did not molt the first year and molted early the second year. They never got a chance to molt the third year.

POULTRY NOTES.

A very little salt in dry or moist mash is absolutely necessary, but fowls are injured by an excess of salt.

Fowls sleeping in draughty roosting quarters are certain to take cold, and colds lead to many other troubles.

RHODE ISLAND REDS — Blue Ribbon winners. Hatching eggs and baby chicks. Breeding stock at reduced prices. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

BARRED ROCK AND R. I. RED CHICKS—$11 per 100. Good chicks. Safe delivery. G. L. Hawley Madera, Cal.

TURKEYS, DUCKS AND GEESE.

HART'S BRONZE TURKEYS AND EGGS—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

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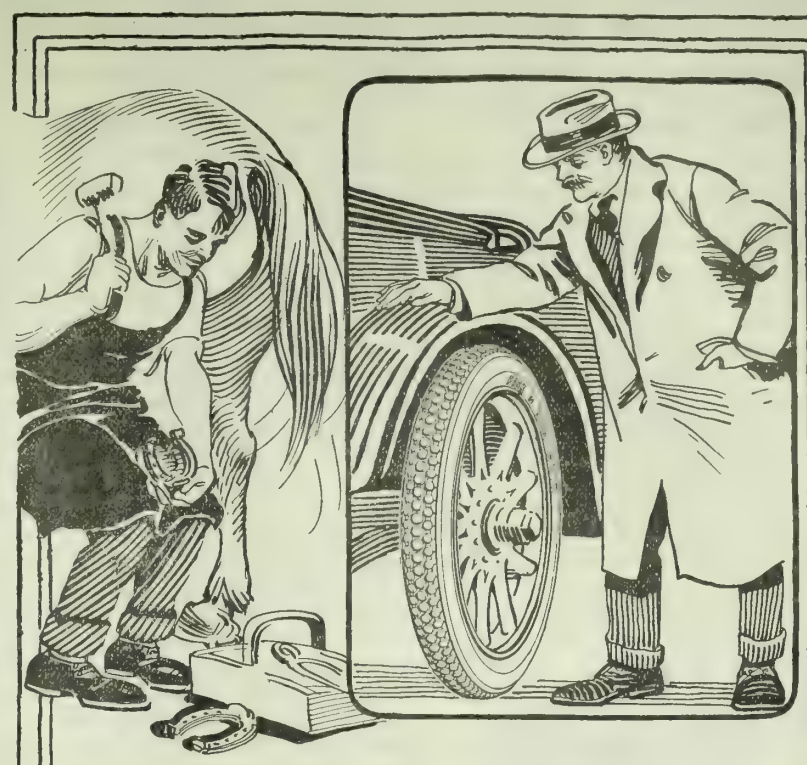
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D

The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends:

I wonder how many of you have boys or girls graduating this spring from either the grades or from high school! Those of you who have are no doubt in the midst of much conversation as to suitable clothes. The boys are easily taken care of—a good looking suit of dark blue will be exactly what the graduating calls for and it will be the finest kind of a suit to use later for dress.

But with the girl it is not so easy to decide, as there are such wealths of materials and so many different styles in which the dress might be made.

I am so glad to see the schools of the cities taking a stand on simple dresses for graduation. One of the high schools around the bay has limited the members of the graduating class to five dollars expense on the dress. Of course that means for material, for the making is supposed to be done either in the sewing department of the school or at home.

The materials used range from linen or cotton weaves that closely resemble linen at about one-third the price, to swisses and nets and laces. One of the stores is showing a big line of wide embroidery flouncing that makes very pretty dresses for slender girls, but would not be so good for girls of heavier build. Most of the skirts are made very full and trimmed with ruchings or large tucks and they need tolerably full petticoats under them.

A pretty girdle adds greatly to the appearance, and while you will want white for the great event, an extra one of a favorite color helps make a variety in one's dressing. Low shoes are usually worn and can be either white or black. There are some very good-looking white canvas pumps in the stores at very reasonable prices. For other occasions, colored stockings with white pumps are considered very smart and the color should harmonize with the belt or tie.

There are some very good silk hose on the market now, with cotton or lisle feet, that are guaranteed for a definite length of time.

Graduation is such an important event in a child's life that it seems worth while to make an effort to give them what will make them happy, and suitable clothes certainly help to that end. Yours devotedly,

Rosabella Best.

ELIMINATION DAY.

A new holiday on the calendar, to come the first of February, May, August and November, is proposed for women and is to be known as Elimination Day.

On the first days of these months, go through the entire house, with a critical eye, looking at all ornaments, pictures, calendars, etc., and at the contents of bureau drawers. Let all things that are not necessary for either use or beauty, be discarded. You will be surprised how many useless articles we all have and what a lot of extra work they cause us.

What is your preparedness against fire?

FLORAL DEPARTMENT.

[By Geo. N. Tyler.]

You can still put in cuttings of chrysanthemums as described in a former article. Fall growing varieties can be put in as late as middle of June and still get large and single stem flowers.

Watering the Garden.—Do all your watering in the forenoon if possible. My reasons are these: In the morning the air, soil and water are nearly of the same temperature, and the plants do not receive any check. If you water in the late afternoon the soil and air are from ten to twenty degrees warmer than the water, consequently you chill your plants. This is one of the main causes of mildew on roses. I do not believe in this daily sprinkling with the hose, for the water does not penetrate the soil for more than an inch or two, and the hot sun draws out all the moisture and makes a hard crust on the top of the soil. When watering let the sprinkler run for an hour in a place, and keep moving it around till you have watered your whole garden, then as soon as the soil is dry enough to work, cultivate and rake fine; this coatin of dry soil acts as a mulch, and you do not have to use near as much water. By surface watering you draw the roots to the top, and as soon as the soil dries out or bakes the plants wilt, while cultivation means deep root action and your plants will stand a dry spell without any ill effects.

Sweet Peas.—Keep the sweet peas picked off and do not let them go to seed, for one seed pod formed has more ill effect than bearing one hundred flowers. Now is a good time to give them a mulch of stable litter or leaves. It tends to keep the roots cool and conserves moisture. Spray the foliage from both sides, as it keeps down red spider, and you will be surprised at the amount of moisture the foliage will absorb. Clippings from the lawn also make a good mulch.

Violets.—Keep the violet runners picked off and give them a weekly watering, so they will be in a growing condition all the time. It does not do to let them dry out during the summer, or you will not have much bloom till way along in the winter. By keeping them growing you will begin picking by October. Never under any consideration use lime around violets or strawberries. The home course of floriculture of the U. C. advocates the use of lime to make the soil friable, which is all right for most plants, but not for violets or strawberries. Try it on a part of a bed and you will soon see the ill effects. The main thing in violets is to keep the roots cool. You can do this with a mulch of cow manure or leaves.

Bulbs.—All bulbous stock, where the foliage has turned yellow, should be cut off close to the ground and the soil kept dry. If not, take them up and let them ripen in the sun for a few hours, and then spread them out in the shade for a day or two. They can then be packed in dry earth or sand and put down cellar till planting time in the fall.

WALNUT HULL KETCHUP.

Miss M. Girling, an English lady, says that the hulls of husks of walnuts make much better ketchup than mushrooms. They should be placed in tubs, sprinkled with salt, and frequently stirred. The liquor that comes from them must then be strained and boiled with spices. When put into bottles it will keep for years.

An old cook book gives a recipe for "Ketchup of the finest sort," made from the "expressed juice of walnuts"; and afterwards refers to that from the outside shell as not equal as regards color or flavor. The flavorings to be used are 2 lbs. shallots, 1 oz. cloves, 1 oz. mace, 1 oz. pepper, one clove of garlic to a gallon of juice. These to be added when the liquor is boiling, and "then simmered till the shallots sink." The ketchup is said to keep twenty years, but is not fit for use till the end of the first year.

Do not repair another's fence till you have seen your own.

FRENCH MUSTARD.

Will you give me a recipe for French mustard?—Mrs. F. M. V.

Stir a tablespoon of salad oil into four tablespoonfuls of English mustard. When well rubbed in, add a teaspoonful each of sugar, paprika and onion juice, then add enough scalding vinegar to make a smooth paste. Beat till very smooth, put in a double boiler and cook 15 minutes, closely covered. Put away in corked bottles.

STOVE BLACKING MIXTURE.

Mix half a cake of stove blacking with an equal quantity of alcohol turpentine and benzine, a small glassful of each. When the stove is cool, apply this mixture with a woolen cloth and when dry, use the brush freely. A higher and more lasting shine can be given, if rubbed again with a dry woolen rag.

A sticking cake may be quickly removed from the baking pan by placing it for a moment on a wet cloth.



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WHO'S AFRAID IN THE DARK?

"Not I," said the owl,
And he gave a great scowl
And wiped his eye
And fluffed his jowl,
"To whoo."
Said the dog, "I bark
Out loud in the dark,
Bow wow."
Said the cat, "Miaow;
I'll scratch and who
Dare say that I do
Feel afraid?
Miaow."

"Afraid," said the mouse,
"Of the dark in a house?
Hear me scatter
Whatever's the matter.
Squeak."
Then the toad in his hole
And the mole in the ground,
They both shook their heads
And passed the word round.
And the bird in the tree,
And the fish and the bee,
They declared, all three,
That you never did see
One of them afraid
In the dark.
ut the little girl who had gone to bed
ust raised the bedclothes and covered her head.

KEEPING HIS PROMISE.

It was a beautiful Saturday afternoon in spring. Harry was playing in the yard with his new express wagon when mamma called him.

"I want you to take this parcel to Aunt Kate," she said.

"I'll put it in my wagon and take it," answered Harry, and started off.

On his way down the road he passed the house where Jamie Lane lived. And there was Jamie sitting on the front steps with his gray kitten in his arms. He was a very small, thin little boy, and lame.

"O Harry," he called out, "Have you a new wagon?"

"Yes, isn't it a beauty?" said Harry, coming to Jamie's gate.

"I wish you would stay and play with me," and Jamie looked wistfully at the new wagon.

"Why, yes; I will. I have to take this parcel to Aunt Kate; then I'll hurry back."

Harry soon reached his aunt's house. He gave her the note, and was going away when she said: "Your uncle is getting the carriage ready to drive me to town. Don't you want to go with us?"

"Oh, I guess I do!" exclaimed Harry, eagerly.

"Well, then, run home and tell your mother, because we won't be back until late."

"I'll go as quickly as I can, so you won't have to wait for me," and Harry was off like a flash.

He was quite excited, for going to town with Uncle and Aunt meant ice-cream and cake, and lots of nice things.

He was so busy thinking of them that he would have gone past Jamie on the steps if the little fellow had not called out, "Oh, I'm so glad you are back!"

Harry suddenly stood still. He had forgotten all about Jamie. But of course he couldn't play with him now!

Jamie had gently put down his kitty and was hobbling out to the gate.

"My, that's a splendid wagon!" he said.

"Say—I"—began Harry, but the words he wanted to say wouldn't come. As he looked at Jamie's poor little thin face, he felt suddenly ashamed. How could he have been so mean as to forget his promise to play with him.

He swallowed hard. It wasn't easy to give up that trip to town.

"Say, Jamie, I've got to go back and tell Aunt Kate something I ought to have told her when I was there. I'll not be long, and I'll leave my wagon here till I come back."

"Of course," said Aunt Kate, after Harry had explained about Jamie. "You must keep your promise to play with him. I would take him with us, too, but he is not strong enough to stand such a long drive."

Harry tried not to mind very much when, a half-hour later, he saw his uncle and aunt drive down the road. His aunt waved her hand to them.

But he did not think of them very long, for he got so interested in making his friend have a good time. And when it was time for him to go home, he was very happy when Jamie's mamma said: "My! You must be a good playfellow. I haven't seen Jamie look so bright for a long time."

"I'm coming to play with him often. You see, I can easily wheel him about in this wagon."

When Mamma asked him where he had been all afternoon, he told her that he had been playing with Jamie, but he did not say anything about Aunt Kate having invited him to drive to town. — Western Advocate.

GOOD SENSE.

Among some skaters was a boy so small and so evidently a beginner that his frequent mishaps awakened the pity of a tender-hearted, if not wise spectator.

"Why, sonny, you are getting all bumped up," she said. "I wouldn't stay on the ice and keep falling down so. I'd just come off and watch the others."

The tears of the last downfall were still rolling over the rosy cheeks, but the child looked from his adviser to the shining steel on his feet, and answered,—

"I didn't get some new skates to give up with; I got 'em to learn how with."—The Presbyterian.

Use good screens all over the house, especially at the tops of windows.



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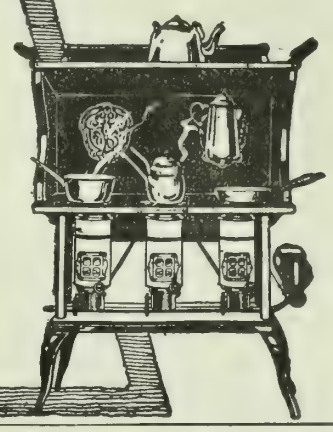
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MARTINEZ, CAL.

FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS.

San Francisco, May 17, 1916.

WHEAT.

The Eastern market shows constant fluctuations, on varying advices as to crop prospects and export conditions, but values on the Coast show little change. Holdings in the north are still rather large, owing to scarcity of ships for export business. This market is very quiet.

Cal. Club, ctl.	$1.60 @1.65
Northern Bluestem	1.87½ @1.90
Northern Red	1.85 @1.95

BARLEY.

The new crop is still very uncertain, but the local trade is holding values on about the same basis as before, future business being very quiet. There is a fair spot demand for feed, and a cargo has just left for export.

Shipping, ctl.	$1.37½ @1.40
Choice Feed, ctl.	1.32½ @1.35

OATS.

Supplies are light, especially of white oats, and some good-sized purchases have caused a further advance in this variety. The demand in this market is light, but there has been more inquiry in the north, where most of the stock is held.

Red Feed	$1.35@1.37½
White	1.55@1.60

CORN.

The movement of Eastern yellow in this market is of small consequence, except on orders for milling concerns. Egyptian is a little lower, with a great deal of inferior stock offered, and prices on Milo and Kaffir in various quarters show a much wider range than is quoted here. Any large shipments here would probably break the market, as the demand is limited.

Eastern Yellow, ctl.	$1.80@1.85
Milo Maize	1.40@1.45
Kaffir	1.60@1.65
Egyptian	1.45@1.50

BEANS.

Beans continue to advance, small whites being again higher, while bayos, pinks, limas and reds have all been marked up a little. Blackeyes are the only variety that has not responded to the increasing demand. The Eastern trade has been getting actively in the market in the last few weeks, and stocks of most varieties are moving off rapidly, though dealers still have fair supplies in several lines. They expect a close cleanup, however, in everything else on the list.

(On wharf, San Francisco.)

Bayos, per ctl.	$4.90@5.00
Blackeyes	2.90@3.00
Cranberry Beans	4.75@4.85
Horse Beans	3.00@3.25
Small Whites (south)	6.50@6.60
Large Whites	6.20@6.30
Pinks	5.00@5.10
Limas (south)	4.60@4.70
Red Kidney	6.50@6.75
Mexican Reds	4.75@4.90
Tepary Beans	4.00

SEEDS.

Melilotus Alba, lb	23 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	5 c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Alfalfa, per lb.	22 @24 c
Sudan Grass	35 @40 c

HAY.

Arrivals are lighter than for several weeks, but still excessive for this season, causing a great deal of weakness in values. This movement is rapidly cleaning up the remaining old-crop stocks in the country. Prices are maintained only on fancy wheat and red oat hay, and a sharp drop is noted for new crop wild oat and barley hay, a good deal of which is arriving. Much of the new volunteer hay shows signs of heating in the bales, being imperfectly cured, and accordingly does not bring as good prices as it should. Offerings of new alfalfa also are heavy, and as there is now little demand from outside points they move slowly. New oat hay is quoted in some sections at $9 to $10 per ton, but local values are not yet established. Dealers say many growers are cutting grain for hay, and until the extent of the crop is better known it will be impossible to make very definite prices for the new crop.

No. 1 Wheat	$13.00@16.50
No. 2	12.00@14.50
Tame Oats	12.00@18.00
Wild Oats, new	8.00@11.00
Barley, new	9.00@12.00
Alfalfa, new crop	8.00@12.00
Stock Hay	6.50@ 8.50
Straw, per bale	.25@ .40

FEEDSTUFFS.

Bran and middlings are a little higher, as the mills have been running on a rather small scale of late, and stocks are getting low. Some red bran, however, is offered at concessions. Other lines of feed are quiet and unchanged.

(Wholesale prices, per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$22.50@23.50
Alfalfa Meal, per ton.	20.00@21.00
Alfalfa Molasses Meal per ton	21.00@22.00
Bran, per ton	26.00@27.00
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00@25.00
Cracked Corn	40.50@41.50
Middlings	34.00@35.00
Rolled Barley	29.00@30.00
Tankage	45.00
Rolled Oats	29.50@31.00

VEGETABLES.

Many items on the vegetable list are easing off now, with more liberal offerings, though values are still rather high. String beans are in good supply and lower, while good peas are very scarce, and fancy stock from the Ocean Shore district brings up to 5c. Summer squash is much easier, and bell peppers are dropping, while eggplant remains fairly steady. Rhubarb is easy, while asparagus is inclined to firmness, with fancy lots held higher. Lettuce also is firm. Good tomatoes are now appearing from several sections, and bring better values than last week; and green corn also shows some firmness.

Cabbage, ctl.	$1.75@2.00
String Beans, lb.	4 @8 c
Summer Squash, box	75 @90 c
Peppers, bell, lb.	20 @25 c
Rhubarb, box, Bay	40 @75 c
Asparagus, box	1.00@2.25
Artichokes, doz.	40 @50 c
Lettuce, small, crate	.75@1.00
Eggplant, lb.	15 @17½c
Peas, sack	2.00@2.50
Tomatoes, lugs	2.00@2.25
Green Corn, doz.	35 @40 c

POTATOES AND ONIONS.

Old Delta stock in both lines is about cleaned up. New potatoes are sharply advanced, as the frost is said to have done a lot of damage, and good stock is decidedly scarce. Oregons are easier. Australian onions continue to weaken. Bermudas are cleaning up, and new reds are offered at lower prices than have lately prevailed.

New Potatoes, ctl.	$2.50@3.00
Oregon Burbanks	1.55@2.00
Onions, red	1.60@1.65
Australian	2.50
Garlic, per lb.	5 @ 9 c

POULTRY.

Supplies of chickens are coming in freely from nearby points, and while shipments from the East are limited, there is not enough demand to keep the market cleaned up, and prices continue easy. Large broilers have declined a little, all other chickens standing about as before. No young ducks are appearing, and old stock is quite easy. Belgian hares find slightly better demand but are not especially strong.

Broilers, 15 lbs. to doz and less, lb.	22@23
do, over 15 lbs. to doz.	25@28
Fryers	25@30
Hens, extra, per lb.	19
Small	17@18
Smooth Young Roosters, per lb.	25@28
Squabs, per doz.	2.00@3.5
Geese, per pair	2.25@3.0
Ducks, young	Nomina
Old	15
Belgian Hares	10@11

BUTTER.

Butter is still being shipped out of the state in large quantities, three cars having been made up for the East a few days ago, and another since, while about two carloads are being sent to Manila. Local dealers have been predicting a cessation of shipments for some time, but the movement seems no nearer an end than it was several weeks ago. Prices are a little firmer than last week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	24½	25	24½	24½	25	25
Prime Firsts	24	24	24	24	24	24
Firsts	23½	23½	23½	23½	23½	23½

EGGS.

Prices have advanced slightly, and the present tendency is upward, as stock is arriving rather slowly and is readily disposed of. The first lot of Chinese eggs for the season arrived a few days ago, but has had no noticeable influence on the market.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22½	22½	22	22½	22½	22
Sel. Pullets	19½	20	19½	19½	20	20½

CHEESE.

Fancy flats are quoted slightly higher, as arrivals have been moving off well. Monterey cheese also is firm, but few sales are made above the appearing quotations.

Y. A.'s, fancy	17½
Fancy Calif. Flats, per lb	13
Monterey Cheese	16@17

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu
Butter	26	26	26	25	25	25
Eggs	21	21	21	20	21	21

DECIDUOUS FRUITS.

Black and red loganberries, as well as currants, have been added to the berry list, and all are easing off a little in price, with a rather light demand, though offerings are by no means heavy. Gooseberries are much easier, while blackberries are higher. Apples are moving off well, and dealers still hope for a cleanup, though stocks are much larger than last year. Cherries in general are lower, though the drop is mostly on the better class of fruit. Apricots are firmly held at the old level, and a few crates of peaches have been sold at higher prices, but larger offerings in the next few days will surely cause a drop. A few cherry plums have appeared, but find little sale. A good many figs are offered, and move readily at satisfactory values. Melons are already coming in in considerable quantity, and nutmegs are held at stiff prices, watermelons also being rather high with little demand.

Currants, drawer	75c@$1.00
Loganberries, red, drawer	30@40c
Black	20@25c
Gooseberries, lb.	4@ 5c
Blackberries, crate	1.50@1.75
Raspberries, crate	$1.25@1.50
Strawberries, chest	3.00@4.00
fancy, chest	4.00@5.00
Apples	.75@1.00
Loquats, crate	.75@1.00
Cherries, Black, 10-lb. bx.	65@80c
White, do	40@85c
Per lb., black	6@ 8c
White	3@ 6c
Apricots, crate	1.00@1.50
Peaches, crate	$1.75@2.00
Figs, box, black	2.00@3.50

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, Cal., May 15, 1916.

For your information, have to advise that the Malaga crop in the Fresno district, where most of the tonnage comes from, is not in excess of 85 per cent of normal. California, and especially the lower San Joaquin Valley, has experienced continuous north winds during the past two months that have prevented in a great measure the proper pollenization of the Malaga and Muscat grapes.

Up until Sunday morning, May 7th, a full crop of Tokays was predicted, but early on the above morning the Sacramento Valley and the district around Lodi, Woodbridge, Acampo and Florin were visited by the most severe frost in the history of this section of the country, with the result that the American River district, Mayhews, Mills and Routiers have been damaged about 90 per cent, Folsom Orangevale and Fair Oaks about 50 per cent, Florin 50 to 60 per cent, Acampo 50 to 60 per cent, Woodbridge about 40 per cent and Lodi in some sections 25 per cent, in others 75 per cent. As near as can be estimated at this writing it would appear that the Tokay crop has been cut down about 50 per cent, but as the vines had set considerably heavier than last season we do not think that the shipments will be 50 per cent less than last year—probably 25 per cent.

Nearly all varieties of peaches are normal, and plums, especially the blue varieties, are about 75 to 85 per cent. Early cherries have all been shipped and Black Oregons are normal.

The apricot crop is lighter than last season and of much better quality, but if market conditions justify we look for as heavy a tonnage East as last season, with a less amount dried.

Pears set heavy, but experienced an unusual drop last month. On the Sacramento River about 20 per cent are scabby; in other districts the fruit is clean, but the crop is not over 75 per cent.

This is as close an estimate of the deciduous crop as I am able to give you at this writing.

It may be of further interest for you to know that the crop in general is about two weeks in advance of last season and on account of the long dry spell the quality is exceptionally fine and we look for average sized fruit.

The following prices have ruled for the week:

New York — Tartarians averaged $2.32; Chapman, $1.57; Rockports $1.30; Purple Guigne $1.45; Royal Annes $2.36; Knights Early $1.20; Burbanks $2.10.

Chicago—Tartarian $2.26; Rockports $1.30; Chapmans $1.78; Royal Annes $1.80; Knights Early $1.52.

Special Livestock Market Report.

Cattle are weaker both here and at Portland. The heaviest supply is of the heavyweights, so they do not get the premium due their superior quality. Baby beef is not enough known to command the premium likely when it is more generally grown. They make cheaper gains than older stock. Pulp and grain-fed steers at Portland sold May 15 at $8.85 to $9. California grass cattle now coming to market are of poorer quality on account of drying feed.

Hogs are marked up, and selling strong.

Sheep are scarce here and will continue so all the rest of the season. Early lambs are most all sold. The rest are going to the mountains with their mothers. Buyers still want sheep, but growers may well keep all breeding ewes.

Wool continues very strong the world over, at the same prices as last week, with a tendency to higher prices for long staple free wools. California country stocks pretty well cleaned up.

White ..... 2.00@2.50
ntaloupes, crate ..... 2.00@3.00
atermelons, lb ..... 8@10c

DRIED FRUITS.

A local packer sums up the situa-n by saying, "The growers don't nt to sell, and the jobbers don't nt to buy, so we are taking it sy." There has, as far as can be rned, been very little done in this rket for the last fortnight, and ile there are many indications that tter values may be realized later than can be obtained now, packers ve covered their early needs and e content to await further develop-nts, as are also the growers, as nditions are so uncertain that ither feel warranted in making any finite move. The fact that stock practically all varieties is going to very light, however, is now well tablished, and a renewed buying vement is expected before long. significant fact is the upward vement of peach prices for can-ng. Spot stock is well out of grow-s' hands and moving rapidly into nsumption.

ples, old crop .....5 @5¼c
pricots, per lb., 1916 ...9 @11 c
gs, white, 1916 .....6½@6¾c
Black, 1916 .....4¾@5 c
Calimyrna, 1916 .....9 @10 c
unes, 4-size basis, 1915. 4½c
1916 .....5 @5¼c
aches, 1915 .....4 @4½c
1916 .....5 @5½c
ars .....5½@7½c
(Associated Raisin Co. Prices.)
ncy Seeded, 16 oz. .....7 c
oice Seeded, 16 oz. 6¾c
ndon Layers, 3-crown,
20-lb. box, 1916 .....$1.30
Imperial Clusters, 6-crown,
20-lb. box, 1916 ..... 2.75
Bulk, layers, 50-lb. box, 1916. 2.75

CITRUS FRUITS.

Citrus fruits are still commanding good pices on the Eastern auctions. At New York on Monday, May 15th, navels averaged from $1.80 to $3.15 per box; valencias from $2 to $3.25; bloods from $2.20 to $2.65; seedlings from $1.85 to $2.75; sweets $1.85 to $2.75; St. Mikes $2.70 to $2.85; lemons $2.30 to $2.80. Other auction points showed about the same prices. Shipments of navels from California will soon close for the season. Already central California is sending large shipments of valencias and heavy shipping of this variety from the south will commence in a couple of weeks.

Most citrus goods have found a very fair demand in the San Francisco market for the last week, but with plenty of stock values are unchanged.

Oranges, Navels .....$1.50@2.75
Tangerines ..... 1.25@1.75
Grapefruit ..... 1.50@2.50
Lemons, box .....1.75@3.50
Lemonettes, box ..... 1.25@1.75

HONEY.

Water White, comb .....10@12½c
Amber ..... 8 c
Water White, extracted .. 8@ 9 c
Light Amber, new ..... 4@ 6 c
Dark ..... 2@ 2½c

HORSES.

(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs. and up $ 250
Drafters, 1550 to 1650 .. 150@200
Chunks, 1350 to 1500 lbs. 150@175
Wagon horses, 1050 to 1350 lbs. ..... 110@150
Green Mountain range horses, 950 to 1200 lbs. 20@ 75
Farm Workers ..... 50@100

LIVE STOCK.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)

Steers, No. 1 .....7¼@7½c
No. 2 .....6¾@7 c
Cows and Heifers, No. 1 6 @6¼c
No. 2 .....5½@5¾c
Bulls and stags .....4 @5 c
Calves, light .....7½@8 c
Medium .....7 @7½c
Heavy .....6 @6½c
Hogs, grain-fed:
100 to 160 lbs. ..... 8 c
160 to 175 lbs. 8½c
175 to 250 lbs. 8¾c
250 to 325 lbs. 8¼c
Prime Wethers .....7 @7¼c
Spring Lambs, f. o. b. country points .....$5.00@5.25

WOOL.

(Prices paid in the country.)

Red Bluff, year's .....25@27 c
Sacramento Valley, y's...19@35 c
Mendocino, year's .....30@31 c
Mendocino, 7 months ...25@26 c
Southern, year's .....18@21 c
Southern, 7 months .....15@18 c
Imperial Valley, year's ..17@19 c
Imperial Valley, 7 mos. ..14@15 c
Nevada .....21@23 c

GROWERS' INFORMATION BUREAU BULLETIN.

San Jose, May 15, 1916.

Prunes: Reported improved prune crops Santa Clara nullified by frost. Crop in California 65 per cent of last year; in France, not heavy. Northwestern prunes severely frosted. Prices lowered, probably by artificial manipulation. Large short interests not yet covered. Growers still holding; and should.

Apricots: Same estimate—60 per cent last year's 18,000 ton crop. $45 to $50 offered Santa Clara fruit on trees for green shipment. Hemet sold $40 green—not much will be dried. 11 cents offered Santa Clara dried—very few sales. Pits, $47.50 to $50.

Contract forms for selling Ass'n ready for signatures.

Publisher's Department

George W. Herbert, the Chicago representative of this paper, also secretary of the Standard Farm Papers, of which organization the Rural Press is a member, was a welcome visitor during the past week. The Standard Farm Papers as an organization is working for quality and known circulation. All the papers of the association are members of the Audit Bureau of Circulation. The Rural Press has good company in its effort in building a clean, strong journal to ably represent agriculture in all its branches.

In renewing her subscription, Mrs. Lizzie Armstrong Jones of Cloverdale mentions that the Rural Press has been coming into her family for forty years.

THE NET INCREASE IN MEMBERSHIP OF THE EXCHANGE SINCE THE 1915 CROP TO MAY 15TH IS 201 PRODUCING MEMBERS.

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311 California Street. San Francisco.

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Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

FOR SALE—One 25 H. P., 220 volt, 3 phase, 900 R. P. M. Fairbanks-Morse Motor. One Byron Jackson 7-in. Vertical Pump. 8-in., suction pipes for two wells. 10-in. discharge pipe, 30 feet, frame shafting complete, in first-class condition and a bargain. J. B. Anderson, Wasco, Cal.

REBUILT GAS ENGINES from 3 to 50 h. p. Thoroughly overhauled and guaranteed. We only handle high grade engines. Write us your requirements. Motors, Gas Engines bought, sold and exchanged. Mechanical Installation Company, 181-89 Second St., San Francisco.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

GAS ENGINES—I can furnish rebuilt Fairbanks, Morse, Otto, Peerless, Samson, Union and other good makes in all sizes. All investigators buy and all buyers are delighted. Pay when satisfied. J. J. Pottinger, 189 2nd St., San Francisco.

IRRIGATION EQUIPMENT—For pumps, oil engines, gas engines, friction clutch pulleys, etc., write us. We can save you money. Commercial Iron Works, 481-497 Fifth St., San Francisco.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

NEW, SIMPLE PROCESS for crystallizing figs and other fruits. Instructions, terms, samples, on application. Correspondence with fig growers solicited. Mrs. H. B. Monteith, Santa Rosa, Cal.

FOR SALE—Used Ranch Tools, Windmills, pumps, engines, new galvanized tanks; 1000, $22.50; 2000, $32.50; guaranteed. Save half. Demmitt Company, 120 North Main, Los Angeles.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

OFFICE STATIONERY—Catalogues, general commercial printing. Good work, low prices, prompt service. Mail orders. G. C. Gallagher, 436 Sacramento St., S. F.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds, $3.00 delivered. Order with remittance. WM. J. SCHROTH CO., 112-B Market St., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

CONCRETE MIXERS—2 brand-new mixers at manufacturer's prices. Write at once. Commercial Iron Works, 481-497 Fifth St., San Francisco.

WANTED.

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education is the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. K. Humphrey, Principal, Stockton, Cal., Box 704.

WANTED—A foreman's position, preferably in young orchard, by absolutely reliable, well educated orchardist. I can highly recommend the applicant. He worked in my orchards for two years, also attended horticultural course at Davis University Farm. G. H. Hecke, Woodland, Yolo Co.

SEEDS AND BULBS.

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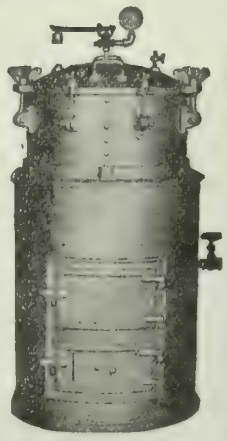
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WANTED to hear from owner of good farm for sale. Send description and cash price. R. G. List, Minneapolis, Minn.

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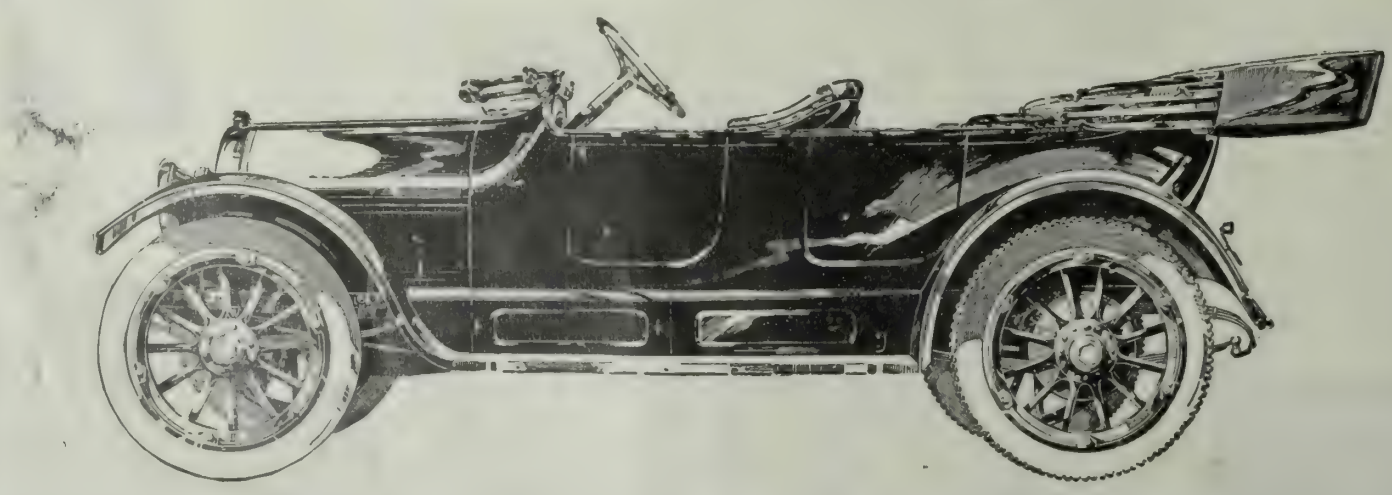
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Vol. XCI—No. 22 Forty-sixth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO MAY 27, 1916. LOS ANGELES

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California's Duty to the Peach.

Eighth of a series of sketches in which the Editor presents suggestions drawn from long experience, of what Californians should think and do for the advancement of California Agriculture.

IN VIEW of the uniqueness and picturesqueness of their notable achievements with some other fruits, Californians of this generation are apt to forget that it was chiefly the behavior of the peach which suggested to the pioneers the superlative suitability of California for fruit-growing; that it was the early-bearing, great size and rare beauty of the peach which sustained the loud cry which the pioneers made to the world of the wonderful fruit-resources of their new country, and that it was the money from the peach which financed many of the pioneer undertakings with other fruits. For its brilliant demonstration of distinctive State value for fruit in those early days of doubt, as well as for its continued contribution to the building of a State fruit industry, which now tops the United States and every country of the world save France, it is the primal duty of Californians to hold the peach in appreciation and grateful remembrance.

Beginnings with the Peach.—The peach was brought to California by the founders of the missions, and flourishing trees were found by visitors in 1792, and the peach was early taken to outside plantations—for it is recorded that in 1805 "the individual Manuel Higuera has permission to make as much as one barrel of peach brandy." Peaches continued at the missions until the coming of Americans, for the traveler Bryant found peach trees in 1846, but he says the fruit was indifferent, and General Bidwell, who wrote later of what fruits he saw at the missions in the '40's, does not consider the peach worth mentioning. It seems clear, then, that the new era of the peach in California inherited practically nothing from the old regime.

The American pioneers had early thoughts of the peach. Many of them came from states where the peach had previously done well, but, according to the common belief of the time, the climate had been changed by the removal of forests in clearing for farms. Whatever may be thought now of that theory, the fact was that the peach was too often losing its fruit in the old homes, through bud-freezing; and the reports of the salubrity of California suggested reveling again in the deliciousness of the peach, and the few pioneers who crossed the plains to California homes before the gold discovery planted peach pits.

The same is true in much greater degree of the argonauts of '49 and '50. Hundreds of them came hunting gold, but bringing peach pits in their kits, and hundreds more had peach pits sent to them by overland and steamer mails. Other fruit seeds came also, but none in such abundance as the peach, and no seedlings showed such joy of growth as the peach, as it embowered the cabins in foothill mining camps, and bore glorious fruit abundantly, with incredible precocity. In many cases, as gold failed in the soil and the diggings were abandoned, the gold of the peach gleamed above the deserted cabins and was gathered by chirping squirrels and screaming blue jays. Some of these trees, which happened to possess soil into which subterranean water moved in the right amount, survived neglect, assumed rough bark and other aspects of forest growth, and some of them stand, even to this day, as demonstration of the longevity of the peach in California when it finds favorable soil and moisture supply.



Though this does not illustrate commercial peach drying, its symbolism is sweet even to the business men who are handling peaches in the large way characteristic of the present-day industry.

The Peach as a Business Basis.—But delightful as it would be to picture the lusciousness of the California peach to those fresh from continent-crossing, or to those who had undergone months of mining-camp fare of bacon, beans and flapjacks, and sweet as it would be to the emotions to recall the symbolry of the peach in its full meaning to the heart-sick throng in this woman-less paradise in those early days, we can tarry for no such dalliance, either romantic or gastronomic. Our present business with the peach is its business with us in the upbuilding of California. And even in this line we hold ourselves resolutely in check, for the pioneer tales of early peach sales, the price paid for single fruits and the gold product of single trees are very tempting to the pen. However, as showing even in the enjoyment of the peach the ever-present impulse to grow peaches, it is well to state that in the early time there was an agreed price of one dollar for a peach with a rebate of twenty-five cents for the return of the pit. But this was after the market had steadied a little. Single peaches were sold at Coloma in 1854 for $3 each and a tree-full brought $1,350. This, however, was partly due to distance from valley points where larger plantings had been made, so that in the same year G. G. Briggs sold, from his orchard near Marysville, $2,800 worth of peaches from fifty trees brought from New York State in 1852—the rate being $1.50 per dozen on the trees. This was perhaps one of the earliest instances of wholesaling fruit, the buyer doing the picking. In 1855 Mr. Briggs imported 7,000 peach trees, and planted also other fruits for several years until he had a thousand acres in fruit in 1858, of which the peach was chief. By that time there were many other orchards scattered from the regions around the Bay of San Francisco to the foothills.

To establish the supremacy of the peach it is not necessary to rummage the reminiscences of those early days. The report of the State Surveyor General for the year 1856 gives data from which the following list of fruit trees growing in California at that date is compiled:

Peach	574,652	Orange	4,351
Apple	263,872	Fig	3,971
Pear	26,146	Nectarine	1,367
Cherry	14,413	Pomegranate	1,354
Apricot	11,044	Walnut	957
Plum	9,235	Olive	567
Quince	4,278	Lemon	60

There were also recorded in that year 1,311,356 grape vines. As

(Continued on page 636.)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., May 23, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	.45	38.98	44.35	56	42
Red Bluff	.18	20.11	24.33	80	48
Sacramento	.04	18.23	19.79	78	78
San Francisco	0	27.12	21.94	66	48
San Jose	.01	16.31	16.55	72	40
Fresno	0	11.72	9.45	82	48
Independence	—	———	8.32	82	—
San Luis Obispo	0	26.85	20.14	78	40
Los Angeles	.02	19.91	15.49	72	52
San Diego	.01	12.55	9.90	66	56

THE WEEK

ALTHOUGH we have had too much frost and wind and too little rain during the calendar spring time which is now closing, there is a gratifying amount of bouyancy and activity in California affairs. The season after the Exposition has not brought the degree of reaction and weariness in enterprise which world-pessimists preached to us. In fact recent visitors profess surprise that we could build so well along the ridge of optimism which that world-event rolled up in California and her future. A breezy expert and commentator from the Atlantic coast, where they hold a sort of world-court of exuberation in continuous session, blew into San Francisco the other day, and is reported as saying: "San Francisco is the only exposition city on record that has not suffered a period of severe depression after the close of its display," and credits California with "marvellous growth" since his last visit twenty-five years ago.

It is true that there is considerable doing in plans for development. Quite a number of large transactions in unimproved farm lands are being recorded, and subdivision enterprises are intended, on a better basis of fairness and worth than has recently prevailed, we hope. There cannot be anything surer than good California land at a fair valuation, and nothing better than honest trade therein, in parcels reasonably prepared for wisely-planned production enterprises. Financial and commercial conditions east of the Rocky Mountains are qualifying many thousands, who have been waiting for a chance to break away for California, to come through and establish themselves in this favored land. To this end, all that California farmers are doing to get together on producing and marketing policies, and to build up live stock and general agricultural productions as well as fruit specialties, is having a marked influence not only in publicity, but in increased confidence in local conditions.

ACTIVITY IN FRUITS.

ALL reports from the producing districts indicate the activity of fruit buyers and a high range of values offered by them, as well as a fullness of confidence among growers who are organized for co-operative sale on their own account. The total production will be small as a rule, but there may be partial compensation in prices and reduced payrolls for those who have fruit to sell. It is sad to think of those who have lost by frost and possibly by too high winds which have prevailed here and there—but the fruit which is gathered promises to be of size and quality which will help to sell larger crops in later years. There is good confidence among canners, and embargos do not seem to frighten them. We read of one concern which intends to "put up the biggest peach, pear and tomato pack in its history"; and of one group of canneries which promises a record-breaking run on peaches, pears, plums and other fruit and tomatoes. This is the proper spirit, and things seem to warrant it. As for wine grapes, which coast valley buyers are searching the interior valleys for, Andrea Sbarboro says: "There is a market for three times as much wine as is being produced in California now, and that there are more orders in California for wine to be exported to Europe than can be filled."

RALLYING FRUIT GROWERS.

THOSE of our readers who are so sad for fear that public help to farmers will "crick" their backs and spring their knees, have some more sorrow coming. The fruit growers of Idaho and Washington decided some time ago to train under the guidance of the Washington Division of Markets, and now they are being followed by the Oregon growers. It is announced that the extension division of the Oregon Agricultural College are preparing to carry on a vigorous organization campaign among the fruit growers of Oregon to improve marketing methods. C. E. Bassett of the Federal office of markets, one of the originators of the plan, will spend some time in the State working with the college staff, and meetings will be held in various fruit districts of the State.

Even if it should give more sadness to our friends who grieve lest our farmers be no longer valiant and independent as they have always been (in 4th of July orations), we have to cite the case of an apricot grower who has become so weak that he has offered to donate his time, energy and machine to sign up apricot growers to the Prune and Apricot Association, about which we have had so much to say recently, and which is being promoted by our State Market Director; and it is expected that other growers will volunteer similar services.

Meantime, there is being held in San Jose, as we go to press with this issue, a meeting of apricot growers of the San Francisco Bay region called by the Growers' Information Bureau at the request of apricot growers, who expect to sell their fruit to canners and green fruit shippers this year. They understand that certain elements have united in an attempt to purchase their share of the 1916 apricot crop at low prices. How sad all this is! It would be so much more valiant for these growers to stand apart independently, and be picked off singly by a lot of sniping buyers!

ANTICIPATING PEACE.

THE dove of peace (not of the Bryan type) seems surely to be preening herself for European flight. The world at large has been disgusted with war since the present most unreasonable conflict broke out, and Europe is heart-sick over it. So far as it was undertaken to demonstrate the world-beating power of any belligerent, it has already fully and righteously failed—so why kill a million more men over that dead issue? It is not in the right of things that one nation should rule the world, and even belligerents are seeing now what other nations have seen from the beginning. The world sky is full of tokens that the war will cease before this year's California fruit crop is fully gathered in. Therefore, there is good reason to expect to get full value for every pound of it that America can spare for Europe. And this is not a California notion. A report of one of our great national staples, just at hand, says this: "Already cotton is discounting peace, for the trade firmly believes that peace is in prospect; and some expect that it may come before the new crop is on the market. There is likely to be a very strong and active cotton market. Many expect cotton will reach the neighborhood of twenty cents a pound when the powers' representatives finally sit at the peace table." It will be a glad day, and it is coming soon, when Europe calls for something better from us than munitions, and we have accumulated a producing force which will compass many better things. On all accounts, peace will be fine. As we go to press the cable says that Woodrow Wilson of the United States and Alfonso of Spain are now getting ready to pacify Europe. As we believe that will now be easy, we suggest that they include Mexico so that they may have a job worth their while.

STATE DAIRY ASSOCIATION.

WE ARE very glad to talk of the project suggested in the following communication:

To the Editor: The Humboldt County Dairymen's Association would like to have your views upon a State organization of dairymen. The Humboldt Association desire to have the opinion of the dairy interest concerning such a movement, and would like to secure a representative gathering of dairymen at Ferndale during the convention of California Creamery Operators' Association in September. The Humboldt County Dairymen's Association has been organized for several years, and has been a success from the beginning.—R. H. Flowers, Secretary, Ferndale.

This is a good proposition, and it starts in a good way from a good source. A successful local association calls for affiliation with other local associations now existing, and with other dairy farmers generally, who desire to come together for mutual benefit and for the advantage of the farm end of the great dairy-producing industry of the State. It is a proper and timely thing for Humboldt dairy farmers to take such an initiative, and everything we can do to assist in such a movement will be actively undertaken. Meeting at the same time and place chosen by the Operators for their convention is also a good thing, for the Operators' proceedings are interesting and edifying, and to see Humboldt dairying should warrant every cow-owner, who can, to invest the time and outlay. There will surely be a widely representative group of dairy farmers present to take the first steps in organization in September, and to call a State Convention at some more central point later in the autumn and preferably before the November election. October is perhaps as near a slack month as California dairymen experience, and a late October date would give time enough to have the call for the convention fully understood and to do some effective talking to the intending statesmen whose names will be used at the November elections. There have been a lot of things done at recent legislatures which affect the dairy farmer, and about the only party in interest which has had nothing to say about it has been the man who owns the cow. Unless the dairy farmers take up the Humboldt proposition and come together in some effective form, their interests will be the football for the Legislature of 1917—just as they have served in the recent past. We count it the duty of all local dairy associations to advise Mr. Flowers that they will be represented at the September meeting, to set up such an organization as he proposes and to stay with it for the sake of the land and the cow and the owners thereof. Recent legislation on dairy lines has probably been all intended to serve the public interest through the consumer, but if all the pressure on any subject is on one side some one may unjustly get pushed over by the bulge on the other side. It is for the dairymen in the broadest public interest to make their claims heard, and if they do not do it themselves, there is apt to be scant vocalization on the subject.

WHAT DAIRY ASSOCIATIONS HAVE DONE

WE HAVE personally participated in the organization and activity of two State Dairymen's Associations in California, and have thus grown into confidence in their desirability and efficiency. The first was organized in 1876 because of the menace of locally-made bogus butter. The inventors of beef-fat-butter-milk butter made an early stand in San Francisco. If we remember correctly they struck out for California about 1875, after they had cleaned up enough royalties, etc., in Chicago—partly because of the salubrious climate, partly because they thought there was plenty of pure gold to be had here, in exchange for bogus gold. A most energetic drive was made

n them at once by the dairy merchants of San rancisco of that day and those who were disposed o invest in rights to manufacture were frightened ut of the enterprise. However, the menace contin- ed, both in the form of prospects of local manu- acture and shipments from Chicago, and a gen- ral convention of dairy farmers was called. here was a large attendance of them from along he coast and coast valleys, from Del Norte to San uis Obispo county, as we remember, but possibly rom beyond; also from beside the rivers in the elta region. This was practically the exclusive rea doing commercial dairying in that day—ex- ept a few mountain valleys which shipped largely o interior points of sale. It was for this conven- on that the late Judge John A. Stanly, himself dairyman in the Napa valley, drafted the first alifornia law against bogus butter, which re- uired branding of packages "Oleomargarine," nd required all dealers and public feeders to dis- lay signs: "Oleomargarine sold here," and to in- orm all purchasers that they were not being sold enuine butter. This law was passed, if we re- ember correctly, by the Legislature of 1877, nd it protected California well until national egislation began to take effect. This first Cali- ornia State Dairymen's Association continued to old conventions for several years, discussing gen- ral dairy resources, practices and policies, but s great work was the protective achievement entioned.

The second State dairy effort realized an active nd effective existence in the '90's. Its chief pur- oses were to improve the California product, and o exploit new markets for the greatly increased utput which the newly-opened alfalfa districts ere seen to be capable of. The population of alifornia was then much smaller than now, and uch demand as there was had to be divided with he imported creamery product which had the ad- antage of higher average quality and uniformity. t was seen that regular systematic work had to e done for the improvement of the California roduct, that dairy instruction was required and hat other essentials of safe expansion be pro- ided. The association successfully insisted that his should be done by the State; the Legislature stablished the California State Dairy Bureau; he University began its series of annual State Dairy Schools, and the association which secured hem, resting from its labors, fell into the tomb which already enclosed the remains of its prede- essor which flourished twenty years before. The California Creamery Operators' Association then ame into existence and lives lustily to this day, nd renders good public service, but it has never ndertaken to be a dairy farmers' organization.

The third attempt at State organization in the nterest of dairy farmers was undertaken three r four years ago, but it never attained much sup- ort, and passed away through taking its tubercu- osis too acutely. The field is now clear for a roadly planned and stalwart association, State- wide and influential, such as our Humboldt county riends call for, and we hope the dairy farmers will give heed to their cry. The subject is open or discussion.

Chestnut Growing.

To the Editor: I am anxious to get information about the growing of chestnuts in this country. I have been recommended to plant an orchard of Paragon chestnuts, and I would be very much obliged to you if you can furnish me with any in- formation in this line.—A. L., Weaverville.

The Paragon chestnut is reported to be satis- factory in the northwest quarter of California, and presumably would succeed in your district. Chestnut growing is, however, sometimes disap- pointing because, although the trees grow very well, they sometimes defer bearing until they at- tain considerable age. This is not always the case, but, considering the disappointments which have been experienced, the planting must be con- sidered to some extent experimental unless you can find trees in your immediate vicinity which are behaving themselves properly. There is very little information available on this subject, as chestnut growing has never reached much com- mercial standing in California, though good sam- ples have been produced in many districts, both in the hills and valleys.

Queries and Replies---by the Editor.

Querists Must Give Name and Address

Leaf-Edge Failure of Almonds.

To the Editor: We have planted this winter almonds on bitter seedling roots, and now some trees are showing yellowing and browning of the tips and edges of the leaves on the small twigs which have just put out. I send you samples of these. In some cases the new growth has all turned brown and died. The man who is doing the cultivating says there is also a spider web on these same trees and thinks that possibly there is red spider on the trees.—B. S., Snelling.

There is no definite indication of the presence of any pest or disease. The yellowing of the edges of the little leaves is probably due to in- sufficient root action. You should ascertain by digging whether the soil in which the tree is try- ing to establish itself is amply moist but not wet. If the soil has only "color of moisture," some irri- gation should be given at once. Owing to the absence of spring rains many young trees will probably be lost through too dry soil in which they cannot root well. Common "spider-web" is not a sign of red spider. It is a very small mite and does not make such a web. It is too early for noticeable injury by this mite. Sulphur the foliage about twice a month and it can never get a start.

Grafting Old Olives.

To the Editor: A California friend of mine writes that I can buy a place with old trees of a very small olive, not valuable in itself but good for grafting over to larger varieties, and soon get fruit. Is that reasonable?—T. A., Chicago.

The olive to which your California correspond- ent refers is undoubtedly the Redding Picholine, which is commercially of little account, and the only value in the trees must be through their grafting over to satisfactory commercial variety. How valuable they are for this purpose depends upon how thrifty the growth is, whether the soil on which they stand is suitable and the water supply assured and not too expensive. Grafting over large trees is perfectly practicable, but some- times disappointing in the failure of the grafts. unless set by an experienced grafter. The olive is rather more difficult to graft than ordinary de- ciduous fruit trees. There will, therefore, be some irregularity in the stand probably. If things go right, some fruit might come in the second year after grafting, and quite a crop the third year. But the proposition is like buying into trouble, especially while you are absent from the State and not able to keep a watchful eye upon things.

Cutworms or Army Worms?

To the Editor: Has anything been found which will destroy the army worm? This worm is doing much damage to grape vines. I have sprayed with arsenate of lead and Paris green without beneficial results.—P. F., Cloverdale.

You probably have to deal with the "climbing cut worm," which is often called the "army worm." They go to the ground in the day time, and it is better to give them poison on the ground than to try to poison the whole foliage. This is done with poisoned bran, as has often been de- scribed on these pages, as follows:

Take bran, 10 lbs.; white arsenic, ½ lb.; mo- lasses, ½ gal.; water, 2 gals.

Mix arsenic and bran dry. Stir molasses and water together and then mix into brain, making a moist paste. For cutworms and grasshoppers, dis- tribute a handful near the base of each vine or tree. Insects will only eat it when moist. When distributed by handfuls it may be gathered up and moistened again.

It should not be used too freely, especially on young vines. It will, of course, endanger poultry and animals. As late as this, with the vine growth spreading to the ground, it is not so easy to poison them this way as when the growth is starting and there is only the old stump to crawl up on. Then, too, the injury to the vine is less now, for it can usually spare some foliage without noticeable injury. Unless you have an abnormal number of these worms at work it hardly seems necessary to fight them so late as this.

"Mexican Dahlia."

To the Editor; I have in my garden a giant dahlia, given me by a friend who calls it a Mexi- can dahlia. It grows 25 feet in height, has large lavender flowers with yellow center, blooming in November. Can you tell me its proper name, and where it originates?—J. F. S., Martinez.

Inasmuch as there are about a dozen species of dahlias indigenous in Mexico, and as the florists' varieties have been developed from these, the name "Mexican dahlia" does not mean much in a definite way—though there is a dahlia Mexicana, a botanical species, but it does not meet your specifications. If your flowers are flat and erect your species is probably excelsa; if they are nod- ding and bell-shaped it may be imperialis. The colors you mention belong properly to excelsa. Both the species are arborescent and tree-like; and reach a height of 20 feet or more in the open air in California.

Manure: Wet or Dry?

To the Editor: Some time ago there appeared an article on preserving manure, and two ways were suggested. One was to sprinkle occasionally and turn it over, keeping it in a sheltered bin. Another way was to dry it while fresh and stack it up, thus preventing fermentation. In your last issue there is an article in which it is stated that manure being dried out in the sun is spoiled for a fertilizer. I had settled down to drying mine as I shall not be able to provide a covered bin. Which of these theories is right?—Subscriber.

Manure, which is quickly dried, or quickly put under water, is preserved from fermentation, and therefore does not change in composition. It does not matter whether it is dried in the shade or in the sun. During its dry condition it does not lose any fertilizing value and does not gain any, through change in condition which may render its substances more available to plants. As soon as it becomes moist, fermentation begins, and this may be cool and slow, or it may be hot and rapid. The former improves the manure; the latter may be active enough to practically destroy it. This depends on the amount of moisture added. Roughly, it may be said that the more water and the less air admitted to the mass, the slower and better is the decaying process, so long as there is no leaching; the less water and more air, the more destructive the process. Theoretically it is possible to make the manure so dry, and then compact it so thoroughly by treading or tamping, that no notable change would take place until it is covered into the soil where its decay would take place. But, practically, it would be dan- gerous to make it ordinarily dry and then put it in a loose stack, because there would probably be air and moisture enough to favor rapid and destructive fermentation. Therefore, your plan of drying and then stacking is but doubtfully good. It would be safer to spread it and let it keep dry in the yard or corral, or to spread on the soil surface, and cover it into the soil, after rain or irrigation. Dur- ing the rainy season it is better to spread currently and not let it accumulate in piles, because the rains would cause rapid fer- mentation or leach out the soluble matters, or both. Piles are, therefore, bad, both for the manure and for people also, because they are the breeding-place for disease-distributing flies. Fly- tight bins may be necessary in villages and sub- urban places, but on farms preventing accumula- tion by frequent spreading is best—remembering that it loses practically nothing so long as it re- mains dry, as it will during the dry season in California; and when it rains it is leached into the soil which is to be enriched by it.

Composting is a process of alternately watering and shoveling-over, which promotes quicker fer- mentation without allowing too much heat to gen- erate, and in this way destructive processes are checked. It is a rational process, but it costs too much except for garden use, on which the cost may be a good investment, either for profit or satisfaction, as the case may be.

California's Duty to the Peach.

(Continued from page 633.)

grape vines were planted exceedingly close in those days it is evident that grapes occupied but a small fraction of the acreage of land given to the peach.

The pioneers used the peach to win money with which to plant other fruits, not only because the fruit sold so well, but because of its early bearing and its ease of propagation. Thus the peach is shown to be the basis upon which the first California business of fruit growing was established.

Enduring Popularity of the Peach.—But the peach was not alone the foundation; it rose aloft in the superstructure. Only once during the last 66 years has the peach been displaced from the apex of the deciduous fruit pyramid. In the early nineties, the idea gained ground that the prune was the easiest fruit-thing in the state; that all one had to do was to stick in the trees on any old grain land, let them grow at will and then go around in a few years and scoop up and sack the cured fruit from the ground! The nurseries scented the demand and propagated so many that, though high-priced at first, trees were finally sold almost at a nickel each. Grain farmers planted them all over their fields and corrals, and were peeved because they could not carry the rows right over the roofs of their old barns and warehouses. Real estaters ran their rows back and forth, through the tule ponds and over the alkali plains and pictured their subdivisions all green above and all purple below with the self-curing fruit. It was this crazy prune planting which gave the statisticians in 1895 figures for the prune which exceeded those of the peach. But this prune-bubble never scored in any other way. The boom-planted prune trees, never properly located, planted nor cultivated, largely were killed by the drouth of 1898, and by 1908 the peach had returned to its old deciduous-tree leadership and has not since yielded its place, to the present day. The figures by Mr. Weldon (printed in the Pacific Rural Press of May 6, 1916,) show that the peach has an acreage of 144,888, while all the prunes and plums combined reach an acreage of 138,385.

And yet the peach is not the leading fruit of California. The grape now has an acreage about twice that of the peach, and the orange acreage is 168,453—leading the peach by 23,565 acres and in value of acre-product far exceeding the peach. But we are only discussing the relations of deciduous fruits to each other. The orange is in another class, horticulturally, socially and financially , and yet it is interesting to remember that while the peach was working for the establishment of the fruit industries in the early days, the orange was little more than a curiosity and even less of that than was the pomegranate.

Why Has the Peach Maintained Supremacy?—The continued prominence of the peach is not alone due to early and free-bearing of the tree and to the size, beauty and deliciousness of the fruit, which were the chief factors in its early popularity. General recognition of its goodness and beauty started the peach on its career, but its continuance is due to the ideals of suitability of peach varieties for definite commercial uses. In California a peach is not only a peach; it is more. Discriminating knowledge of peach varieties from the points of view of peach products probably exists nowhere else in the world as it does in California. Elsewhere the chief point seems to be to get a peach. In California that is the very easiest thing and the chief point is to get a peacn with particular characters of ripening-date, form, internal colors, texture of flesh, etc., to serve some particular trade or manufacturing purpose.

This discriminating study of the peach began at quite an early day. We do not know when or by whom the first formal announcement was made, but these words written by W. Wadsworth in the California Culturist in June, 1860, will serve to establish the early dawning of the idea. He wrote: "There are peaches which possess the quality of a high peach flavor combined with dryness and toughness of the pulp—qualities not desirable when the fruit is eaten in a fresh state. The juicy, melting peach is not the peach for drying and it is the indiscriminating use for drying of any or all peaches that cannot be otherwise disposed of that often renders the process so difficult," etc.

One can read between these few lines three interesting facts, viz.: That California growers, even more than half a century ago, were learning some fine points from experience; that a particular kind of peach was necessary for a particular purpose; that the drying of fruit was not merely saving waste but that it should be making a primary product for which fruit, particularly suitable, should be especially grown, so that if one avenue of trade should be closed another type of product could be undertaken. This conception of the suitability of peach varieties is fundamental in California achievements with all this fruit, and though it was early discovered and acted upon, it required two or three decades to reach the breadth and definiteness which now enter into the plans of wise peach planters. And this was reached not by professional pomologists or plant breeders, but by alert and discriminating fruit growers, fruit canners and fruit shippers—always looking out for characters which determined suitability for particular uses. They had not only opportunities for selection from the scores of named varieties, with which our pioneer nurseries and orchards were planted, but there were everywhere chance seedlings, growing from pits planted by early settlers, as has already been described. And not only was there regard for the characters of the fruits; the thrift of the trees was seen to be essential. Early in the '50's resistance to "curl-leaf" was an accepted criterion in selection. At this time also there were "committees on seedling fruits" at the fruit fairs, and in one instance such a committee submitted descriptive outlines of more than twenty seedling peaches, but none of them are now grown. The law of the "survival of the fittest" has always inexorably prevailed.

Ideals of Form and Characters.—One might cite descriptions and account for the present prominence of all the peach varieties largely grown in California on the ground of specific commercial suitability, but it would be more intelligent perhaps to attempt a few definitions which will show concretely that California planting requires not only a good peach but a peach which shall be good for something. Eastern propagators, now and then, cause our planters to lose money by inducing them to invest in eastern standards of general peachiness. A few definitions of specific desirability, from a California point of view, will be such as these:

Size: Medium large, capable of regulation by thinning. Tendency to over-size or to under-size under good growing conditions are both defects.

Form: Globular; not oblong or swollen with unequal halves; suture absent or very shallow; apex rounded and free from pointed projections; stem cavity shallow.

Color: Skin colors preferably light; deep colors are apt to extend into flesh, which, for canning, should be solid yellow or white, untinged with red. Deep colors also darken on drying and make unpeeled dried peaches of mottled exterior aspect.

Skin: Not easily broken or torn; minimum fuzziness.

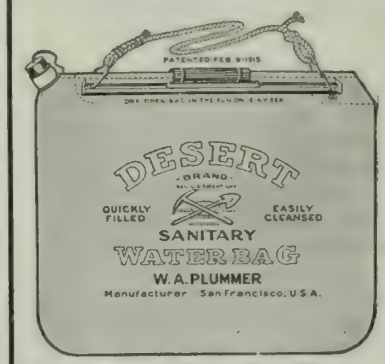
Flesh: Firm, fine-textured, not coarse or stringy; not over-juicy; processing without mushing or clouding syrup.

Flavor: Rich and free from bitterness or wildness; sound and true peachiness; mild rather than high.

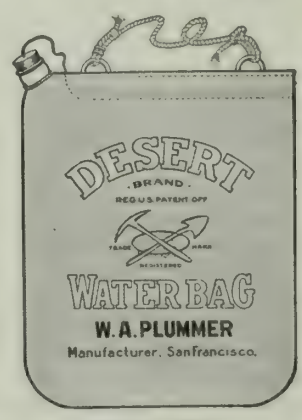
Pit: Small and not broadly flanged; close-knit, non-splitting.

Cavity: Small, enclosing pit tightly without vacant spaces; free from red or red with least extensions into adjacent flesh. Such color preferably absent for canning, but may be used to advantage in careful drying which does not induce blackening.

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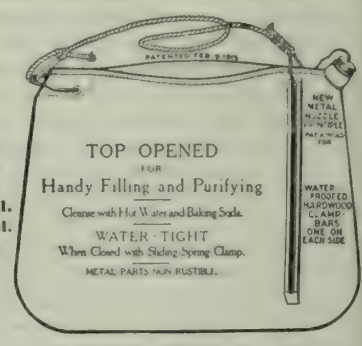


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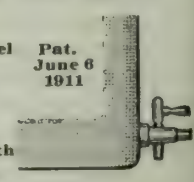
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These, then, are a few of the characters which constitute suitability in California mid-season peach. All popular varieties do not embody them all, but, to be profitable, a peach must not depart too far from them, and wide departure from any of them may make any new variety of doubtful value, except for local sale. Other important characters are habit and health of the tree, relative ripening season, etc., but we have no space for these. The point we wish to make is that it is not safe to plant a variety simply because it is a peach tree—nor because it may be counted a "glorious peach," artistically or gastronomically.

Commercial Achievements.—There are many results following the sixty years of definite study of the commercial suitability of peach varieties which California growers have pursued. Such study has educated the perceptions and reasoning powers of all who have taken part in it. It has developed an industry of distinctive character, capacity and endurance. The latter is easier to measure and measurements of the commercial product are therefore cited, the figures being taken from Howard C. Rowley, editor of the California Fruit News. Mr. Rowley is our leading authority on the amounts of fruit products, and the figures are for the crop of 1914:

Canned peaches.... 2,009,325 cases
Dried peaches .....74,000,000 lbs.
Fresh shipments... 2,144 carloads

The value of the peach crop which enters into such processes of manufacture and trade is placed by the U. S. Census of 1910 at $8,563,427. This is the "farm value"—that is, the value of the fruit as it leaves the orchard on its way to packing houses, canneries, or drying trays. This estimate is probably as nearly correct now as it was five years ago, for, though the product has gained in volume, it has lost in selling value during recent years.

The Great Advantage of the Peach.—Probably the greatest advantage which the California peach industry has, in its present fullness of knowledge and organization, lies in the superiority of the peach over all other deciduous fruits in beauty, fragrance and deliciousness. No fruit is so easy to glorify and promote for trade purposes as the peach, not only because its charms are so great, but because they are already universally known. No one has to be educated to the lusciousness and desirability of the peach. These ideas seem not only inborn to natives of the temperate zones, but their symbolry is employed to express emotions which are beyond words, and everyone understands the emotion which seeks such imagery. Have you not seen the flush of joy mantle the pale cheek of the proud mother as privileged visitors peep beneath the enveloping down and exclaim: "Oh, isn't he a peach!" And when this babe grows to early manhood and soulful ecstasy teaches him adoration beyond plain words, what token does he choose to most fitly convey his emotion to her waiting ear? Does he exclaim: My olive, fig, prune, pear, or lemon? Oh, no! Without suggestion, without experience perhaps (in some cases) does he not cry out: "Oh, my peach!"—and she knows the rest without a word, for, since creation, it has been the way of a man to desire a peach for his own. And thus our little life is rounded with a peach!

The Great Duty of the Peach-Grower.—Endowed by nature with conditions which make for superiority in size, beauty and suitability for imperishable products; capitalized by more than half a century's attainments in peach wisdom, in culture and manufacture and the organization of a peach industry which no country on earth can match; advantaged by world-wide knowledge and appreciation of the peach as the acme of deliciousness in food, what is the crowning duty of the California peach-grower at this moment? Is it not to protect his right in the peach and its products, and to secure his just return from peach production, that the industry may grow and prosper and give the world the joy of the peach all the year and in all regions where nature forbids the production of it? Is it not his duty also to conduct the industry with such wise and liberal promotion policies that people everywhere, who already know the peach, shall know also that they may enjoy it, at cost which they can afford, if proper distribution methods can be enforced? To these ends it is of incalculable importance that California peach-growers have organized a forceful and competent co-operation known as "California Peach Growers," of the progress of which we have kept our readers continually informed and which we shall continue to expound and exhort. It is now in active operation with headquarters in Fresno and opportunities are still open for pledges of acreage, funds and support from all peach-growers. In the success of this organization is vested the immediate prospect of increasing progress and prosperity to the peach-growers of California, and it is the personal and patriotic duty of every grower to advance its undertakings.

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Summer Pruning Apricots.

[Written for Pacific Rural Press.]

The present season's light apricot crop is due in many orchards to weakened fruit buds. The object of summer pruning is to increase fruit buds where they have been lacking, and to strengthen all of them so they will set and mature fruit.

A Hemet apricot grower said he did not like to summer prune even as early as August, because of the second growth which a professor had said was a favorable host to carry apricot rust over winter "where rust is prevalent." As rust is said not to be prevalent in his district, perhaps he did not need to worry.

This grower had read in Wickson's Fruits that summer pruning may promote bearing. He tried it on his Royals in August four years ago; but new growth put forth, so the past two or three years he pruned in Sept. and Oct. This, probably aided by irrigation into Nov., kept the leaves on until Christmas and prevented spraying for shot-hole until January, which is considered too late. But the trees haven't borne yet, though they have grown well and are over six years old.

Buds Formed Early.—Fall pruning to keep leaves on late is supposed to strengthen fruit buds, but does not help form more of them. They are formed from June on; but probably do not mature if formed after August. June or even July pruning will be followed by growth on which fruit buds will mature and bear the next season, especially if cultivation and irrigation are not neglected. It also helps set strong fruit buds on old spurs.

In June pruning, it will be desirable to thin out the branches, leaving only those which will be desirable next season and cut them back. The most vigorous ones may be cut least in order to avoid excessive new shoots and yet divert sap into fruit bud formation and development. When new shoots have started from the cut, they may be thinned to one or two and these cut back again, perhaps in Sept. This will give fruit bud development another boost.

J. B. Neff of Orange county suggests that the ground be somewhat dried out by lack of cultivation and irrigation to induce temporary partial dormancy during the June or July pruning. Then irrigation and cultivation directly afterward will promote the object sought.

To Strengthen Weak Buds.—In most cases, there are plenty of fruit buds on spurs of previous season's growth; but often their weakness is indicated by dropping before bloom or by dropping the newly formed fruit. These need strengthening, which may be obtained by late summer pruning.

Among the strong advocates of August-Sept. pruning are A. E. Goodrich and Son of Hemet Valley. Having had several years' experimenting with summer and fall pruning, they plan it for their entire 21 acres this season, except the trees under four years old, which are being pruned for wood-growth and structure. The method is about the same as for winter pruning.

They pruned three acres of young trees in late July last year. The results indicated that was three weeks too early. They will begin on the old trees (planted in 1893) about August this year and finish the younger ones within the month.

Young trees pruned in February, 1915, sent out strong shoots, which were cut back to a foot length in August. These were blooming near their tips in February, 1916.

They were expected to send out laterals in 1916 below the blooms, and along the larger limbs. The laterals are expected to fruit in 1917.

Don't Overdo It.—Care in summer pruning is necessary to avoid removal of so much leaf surface as to sunburn the bark or overbalance the good effect of the pruning. Some people have well nigh killed their orchards in this way.

H. S. Reed, one of the successful apricot growers of Imperial county, believes in topping the summer growth lightly six to ten inches with a pole pruner, a month or six weeks after picking the fruit in May. He says it forces fruit spurs from blind eyes on the body of the tree. Too heavy summer pruning would allow sun heat to cook the bark.

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TOP OF TRANSPLANTED WALNUT DIED BACK.

To the Editor: I set out a walnut tree in March—Placentia grafted on black. It was set 15 inches deep in a sandy loam. It grew at the botton, but the top died.—P. S. H., Los Angeles.

[If the bottom growth is of black walnut leaves, the graft was probably poorly made. If a Placentia bud is breaking out, the roots were probably badly dried before or after planting or they may have been in waterlogged soil until late spring.—Ed.]

MILO IN ORCHARD.

[Written for Pacific Rural Press.]

Milo maize can be planted any time after the middle of May and not later than July 1 in the Orland district of the Sacramento Valley, according to Mr. Kinkley, of Orland, who has been growing it between the rows of his young walnut orchard for several years.

May planting is preferable as the grain has a better chance to mature; but sometimes Mr. Kinkley has first grown a crop of oat hay on the ground; and this delayed planting till July. In that event he irrigates the land before planting and usually once afterward.

When possible he prefers a good seed bed to start with, as that saves later cultivation. Later planted milo does not need so much cultivation as the earlier sowed crops.

In 1915, on 25 acres intercropped in this manner he secured between two and a half and three tons of milo per acre. Four feet on each side of the tree rows is left unplanted. So far Mr. Kinkley has been unable to see any bad results to his trees on account of the intercropping. He uses a good deal of the milo in feeding hogs and the balance is sold.

Kings county horticultural commissioner F. K. Howard reports 100-per-cent grape crop, uninjured by frost.

Strawberries set out near Gilroy last December are bearing now.

WHICH?

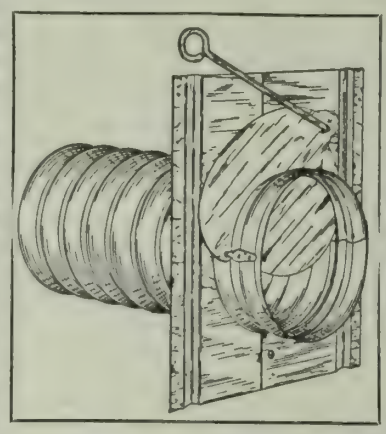
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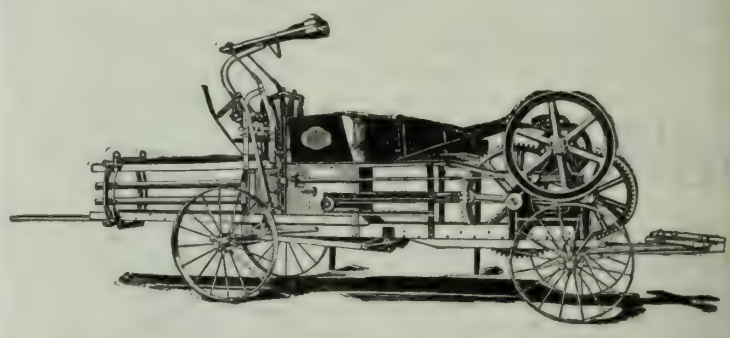
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International Hay Presses, with their powerful toggle-joint plungers, produce tight, solid bales. The roller tucker makes the bales smooth. The bale chamber tension produces bales of uniform size. The presses work fast, the different sizes and styles baling from 6 to 35 tons per day.

The line consists of one and two-horse presses, motor presses, belted jack presses and fast power presses. The one-horse press is made in 14 x 18 size only—all others in 14 x 18, 16 x 18, and 17 x 22 sizes, the accepted standard. The capacities vary from a small horse power press for the man who wishes to bale a little hay, to the largest, fastest custom power presses ever required.

An attractive mailing folder, in colors, shows **International Hay Presses** as they are, and gives complete specifications. Write for it.

International Harvester Company of America

(INCORPORATED)

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The Mid-Year Six
257 Cars in One

Mitchell

$1325 f. o. b. Racine
With 26 Extra Features

A Tribute to John W. Bate

The Efficiency Expert—Paid by 37 Noted Engineers



The New Mitchell car with its 26 extra features, is due to John W. Bate

He built this model five-million-dollar plant, and equipped it with thousands of cost-saving machines. He has cut our factory costs in two.

No other factory has ever been able to produce such a car at this price. No other car at any price offers a like equipment.

The Engineers' Car

Mr. Bate's efficiency, in a thousand ways, shows in the car itself.

He has stood for lighter, stronger parts. He has displaced heavy, brittle castings by the score. This New Mitchell contains 440 drop forgings and tough steel stampings.

He has made a light car supremely stanch. We know of six Mitchells which have averaged 164,372 miles each. That's over 30 years of ordinary service.

He has won the applause of great engineers, all the country over.

We have a list of 37 engineers—men of nation-wide fame—who selected the Mitchell for their personal car. These noted experts found nothing to compare with it. Ask us to mail you the list.

73 New Ideas

This year, for the first time, we bring out a Mid-Year Mitchell.

We designed the body and equipment after the New York Show. It is built to embody all the best features brought out in 257 Show models.

$1325 F. o. b. Racine
For 5-Passenger Touring Car or 3-Passenger Roadster
7-Passenger Body $35 Extra

High-speed, economical Six; 48-horsepower; 127-inch wheelbase; complete equipment, including 26 extra features.

This touring car design—at the New York show—was voted the handsomest ever created. And 73 new ideas—the very latest attractions—are embodied in it.

26 Unique Features

You will find in this New Mitchell 26 features which other cars don't have. That is, few cars have even two of them, and no car more than four.

These are extras, due to John W. Bate's efficiency. All are paid for out of factory savings.

By extras we mean a power tire pump, reversible headlights, Bate cantilever springs, etc. There are 26 such things—all costly and desired—which are almost exclusive to Mitchell.

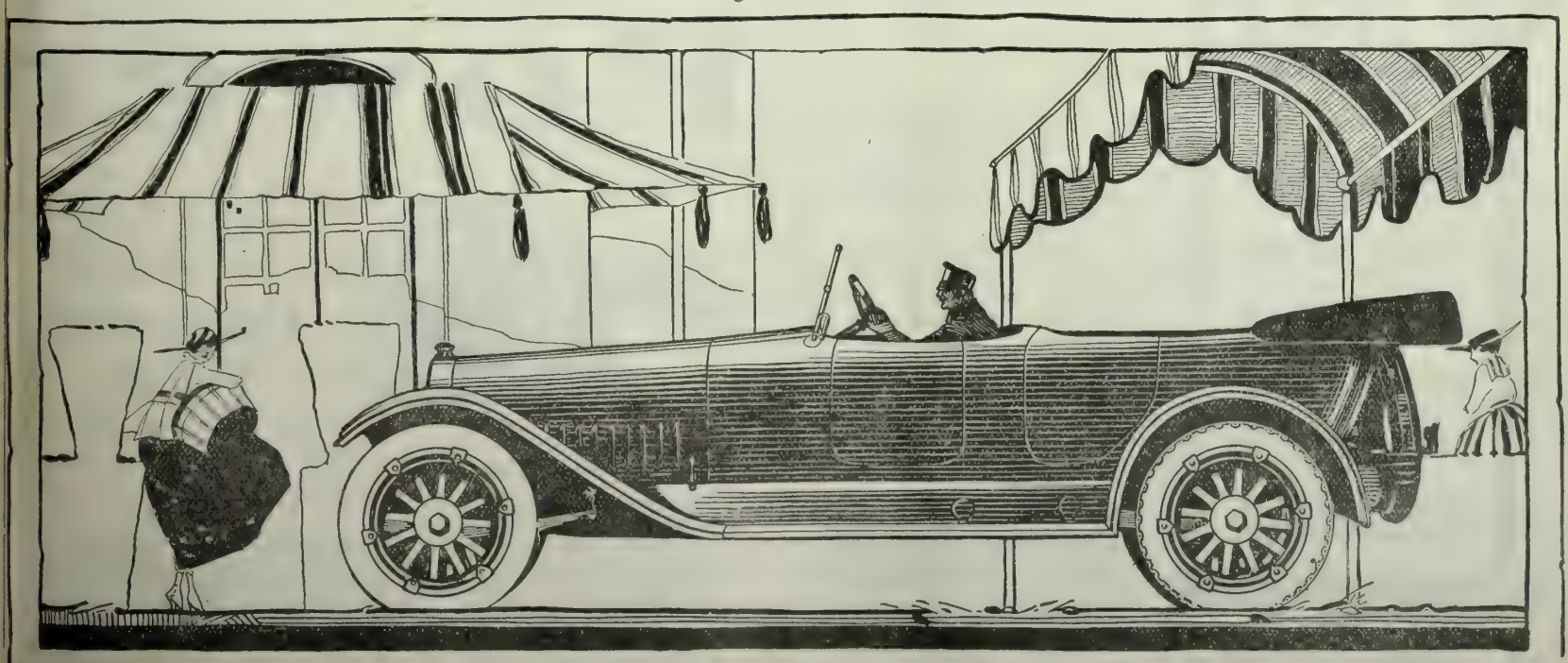
The Car to Keep

When you buy a fine car—a car to keep—it is bound to be a Mitchell. When you see this car, note its extras, read its records, you'll say, "That's what I've waited for."

The concern which builds it has been known to you all your life. It has spent 13 years, under John W. Bate, in developing this marvelous car.

If you don't know the nearest Mitchell dealer, ask us for his name.

MITCHELL-LEWIS MOTOR CO.
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Mechanical Power on the Farm.

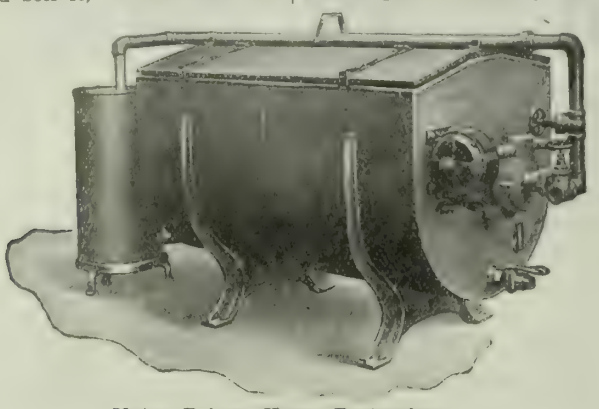
MOTOR-DRIVEN PASTEURIZER.

[Written for Pacific Rural Press.]

The new State Dairy law does not require dairymen to either pasteurize their milk or cream, or to tuberculin-test their cows if the product is sold in bulk to butter factories or to the wholesale trade, or if it is made into cheese.

But many will want to sell milk or cream at retail locally, or make butter and sell it, but will not test their cows with tuberculin. These must pasteurize their milk except where the cities require pasteurization, at a specified place. It must be held 25 minutes at not less than 140 degrees nor more than 145 degrees, if to be used as human food. It must be cooled rapidly to 50 degrees or lower. A self-registering thermometer must be used, and the records kept on file for inspection for two months. The milk must be marked with the day of the week when pasteurized and be delivered to consumers within 48 hours. It must not be repasteurized if for human consumption.

The illustration shows a Reid pasteurizer run by a ¾ h.p. Westinghouse single-phase induction motor direct connected to the worm drive of the spiral coil. It gives the constant speed necessary for efficient pasteurization.



Motor Driven Home Pasteurizer.

The pasteurizer consists of a vat containing a spiral coil of heavy copper tubing. Ends of coil revolve in gland type of stuffing boxes. Water is heated in a separate tank and piped through the coil while it revolves, and back through the heater. Then cold water is run through, and the milk is quickly cooled to 50 degrees or less.

TRACTOR WORKS 540 ACRES.

[Written for Pacific Rural Press.]

Using 18 to 20 gallons distillate per 8 hour day to plow 20 acres of walnut orchard near Los Angeles with a 30 h.p. Best tractor, C. C. Sidwell said last spring that the machine hadn't been laid up during work hours for six weeks of continuous use. He was plowing a strip about 7 feet wide with an eight-disk gang plow, about four inches deep in rather sandy land. "I could go a good bit deeper," said he "but don't want to injure the roots." It took about 6 minutes per round on the 500 foot rows.

A single furrow had been plowed on each side of the trees—then about 2½ rounds with the tractor would finish the row.

The machine turned beautifully at the ends, the track on one side being slowed up on the turn. On the last two times through, the turn would be too short for the plow; so he would run to the next row and finish the last on the return trips. On short turns the rear wheel of the plow was lifted by a lever so the disks would stay in the ground. Mr. Sidwell is working 540 acres, using the tractor for practically all the power work.

GRIND FEED FOR HOGS.

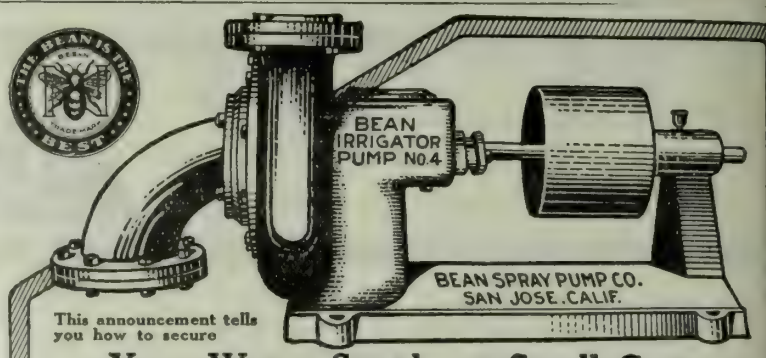
[Written for Pacific Rural Press.]

A feed grinder and self-feeder are both important to the man who would grow good hogs economically. Such is the belief of R. J. Miller, owner of the Llewellyn Ranch near Lathrop.

The feed grinder is placed where it can be run from the same engine that runs his water pump. All of the corn, barley, and non-saccharine sorghum that he feeds to his hogs is first ground.

In feeding his hogs, which are registered Poland-Chinas, he uses self-feeders, home-made but cheap and efficient. By having one of these in every lot, together with fresh drinking water and alfalfa pasture, his hogs keep in fine growing condition all of the time, with minimum labor.

Mr. Miller has 150 acres, only a small portion of which is now in alfalfa, the balance being planted to such crops as barley, sorghums, and this year a field planted to Indian corn. His intention is to feed everything grown on the place, believing that to be more profitable than selling the raw products.



This announcement tells you how to secure

Your Water Supply at Small Cost

At last—a high-grade, efficient, dependable centrifugal pump at a low price. The **Bean Irrigator** introduces a new standard of pump values. Though the price is as low as the lowest—the pump is "**Bean quality**" through and through. If you're interested in irrigation you should learn about

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The Bean Automatic Water Balance eliminates end-thrust, thus saving much trouble.

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Bean Runners are Enclosed, accurately machined and perfectly balanced. This means greatest possible efficiency.

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"Jackson MADE"

Write for Catalog No. 47 F

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Like all Jackson Made Pumps These Deep Well Turbine Pumps Are the Very Best Pumps Made for the Purpose—They are Dividend Earners, Not Expense Makers

Whatever your water problems may be our Expert Pumping Engineers will help you out free of charge—write

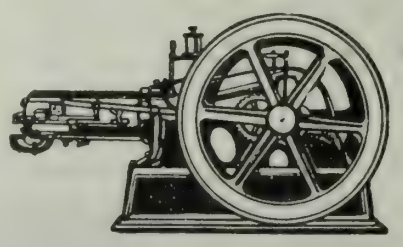
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When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a **free sample** of **Test Special** together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

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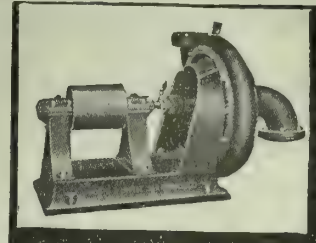
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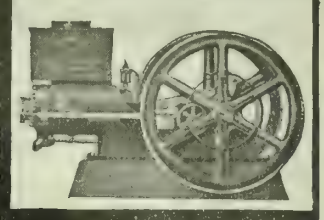
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W. & L. PNEUMATIC WATER SUPPLY SYSTEMS
Pipe, Pipe Fittings, Brass Goods, Tanks, Wind Mills.
Send for our large No. 34 Catalogue Mailed Free. GASOLINE ENGINES Inquire of your Local Dealer for full particulars.



He is particular to give the sows time to mature before breeding, never allowing one to farrow under one year. From the time the pigs are six weeks old, they are fed a grain ration with alfalfa pasture, insuring rapid growth.

BOY RUNS PUMPING PLANT.

[Written for Pacific Rural Press.]

A little pumping plant, forerunner of the thousands that may eventually water an estimated 600,000 acres now mostly covered with sagebrush and cactus, is that operated by Harold True, 15-year-son of T. J. True, a homesteader near Lancaster, Antelope Valley.

To save expense on the 4 h.p. Stover engine, he mixes "tops" and distillate equally for engine fuel. The tops cost 6¼ cents at the time the plant was seen, and the distillate $10 per 100 gallons. A larger engine would work tops alone, said Mr. True. The little engine uses about three gallons of the mixture per hour to pump three miner's inches from a 6½-inch well in which the water is 100 feet below the surface. A 2½ horsepower engine would do the work, but the larger one is considered more economical because it wears less. A Luitweiler double action plunger pump was throwing a steady stream without saying much about it. The well is 245 feet deep; water was first struck at 120 feet, but rose to the 100-foot level. The only trouble is that the small stream irrigates only five or six arces, so a larger pump will be installed, for the well can supply 15 or 20 inches. A reservoir, packed with adobe and tramped by horses, will permit continual running of the plant without irrigating night and day. The water, even in winter, is 68 to 70 degrees, an important advantage in favor of pumping.

POWER NOTES.

Total number of automobiles registered in U. S. in 1915 was 2,423,788.

The Government has bought the patent of Dr. Rittman by which as much as 45 per cent of crude oil may be made into gasoline. This means that everyone may use the process.

A little engine mounted on the side of the harvester produces constant power even in slippery places where a bull wheel would slide if geared to run the machine. Its location on the side rather than on top will avoid soaking the machine with oil which increases fire danger.

Five yards of wet sand and gravel were hauled from the river bottom and two miles along the road by Bruns Bros. of Contra Costa county with a 6-12 Sieve Grip tractor using two gallons distillate per round trip.

A Best's Tracklayer recently pulled a 50-ton electric transformer on broad-wheeled trucks two miles along the streets of Oakland, at one place up a 15 per cent grade.



The Kingdom of the Subscriber

In the development of the telephone system, the subscriber is the dominant factor. His ever-growing requirements inspire invention, lead to endless scientific research, and make necessary vast improvements and extensions.

Neither brains nor money are spared to build up the telephone plant, to amplify the subscriber's power to the limit.

In the Bell System you have the most complete mechanism in the world for communication. It is animated by the broadest spirit of service, and you dominate and control it in the double capacity of the caller and the called. The telephone cannot think and talk for you, but it carries your thought where you will. It is yours to use.

Without the co-operation of the subscriber, all that has been done to perfect the system is useless and proper service cannot be given. For example, even though tens of millions were spent to build the Transcontinental Line, it is silent if the man at the other end fails to answer.

The telephone is essentially democratic; it carries the voice of the child and the grown-up with equal speed and directness. And because each subscriber is a dominant factor in the Bell System, Bell Service is the most democratic that could be provided for the American people.

It is not only the implement of the individual, but it fulfills the needs of all the people.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
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One Policy *One System* *Universal Service*

The KROGH Vertical Pumps



New Type Vertical.

Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film; absolutely without the use of thrust bearings or adjustment of any kind.

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Get our Bulletin No. 78 before deciding on a pump.

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SAN FRANCISCO. LOS ANGELES.

California Garden Flowers, $1.50 Postaid Pacific Rural Press

General Agricultural Review.

GRAINS AND FIELD CROPS.

Colusa rice plantations are being flooded.

Lake county alfalfa growers are holding hay for $10.

Alfalfa near Elko Nev., was considerably frosted May 17.

There were 396,000 bags of limas in California warehouses May 1.

Santa Barbara and Ventura growers are rejoicing in the crop prospects.

Stockton markets have been paying $1 to $1.50 for new potatoes; 200 boxes arrived May 16.

Over 5000 acres of field corn, mostly flint varieties, are being planted in the Delta country.

An Oxnard firm last week contracted for 4,000,000 pounds of lima beans for shipment to Europe.

The frost damage to Delta potatoes will not affect next winter's supply as they are yet to be planted.

The California Lima Bean Growers' Association has 744,000 bags of limas signed up, out of the estimated crop of 1,200,000 bags.

This year 14 tons of bran-arsenic mash has been used in Imperial Valley, chiefly on ditch banks and alfalfa fields against grasshopers, spring and June hatches.

Bean shipments from California, the first six months of 1915 were 103,000,000 pounds; for the same period in 1916, 210,000,000 pounds.

Falker Bros. of Brawley have 1000 acres of barley from which they expect 25 sacks per acre. Much hay is being cut in California, because of the danger that grain will not mature.

Four hundred sacks per acre of Oregon silverskin onions are being harvested on the Tuxedo River farms and selling at $1.70 per sack. Pink beans will follow, says the Stockton Independent.

Imperial Valley cantaloupes are ripening fast. Carlots have been shipped every day lately and the season is in full swing. The first carload was shipped May 16. Two per day have followed.

The rhubarb season produced 114 cars, which sold at about $40 a ton net to growers according to Senator C. B. Bills. Much of it was shipped to the Atlantic seaboard and most of it came from Alameda county.

The U. S. Dept. Agr. estimate of the wheat crop prospects May 1 for California was 5,020,000 bushels against a final estimate for last year of 7,040,000 bushels; for U. S. 499,000,000 bushels and 655,045,000 respectively.

S. D. Sutliff of Escalon plants tomatoes just above water-level on the west banks of his irrigation ditches. They get the morning sun and are protected from the west side. Last season he had the earliest tomatoes in the community and kept weeds from the ditch bank.

During the north winds, which recently well nigh cooked the late grain in Sacramento Valley, Colusa countyites wished for cooler weather and got hail an inch in diameter. The rest of the eastern side got considerable rain. The rains till Feb. which prevented seeding were followed by dry weather and a north wind which has greatly reduced grain and grain hay in Sacramento Valley. Yolo and San Joaquin counties have good crops which are beginning to be harvested, as the dry weather everywhere has made grain early; and in most places north has shortened the straw and pinched the grain. Early sown barley further south in the San Joaquin Valley looks like a fair crop. Livermore's underground water helped save half the crop. Down the coast from San Francisco, the drouth has greatly reduced hay and grain. Hay was selling this week for $18 around Salinas. Southern California got good showers which were welcome, though much hay was down.

CITRUS AND SEMI-TROPICAL.

Navels from Corona were cleaned up last week.

The best 200-size oranges from Riverside sold May 18 at New York for $4.10.

The San Dimas Orange Growers' Association plans a $50,000 precooling plant.

Orange shipments decreased and lemons increased at Riverside markedly during last week.

The Walnut Fruit Growers' Association has shipped the last of their navels, seedlings, and St. Michaels, and is packing the 70-car Valencia crop.

Widening orange markets are indicated by the following exports by 8 month periods ending February, to foreign countries other than Canada and the United Kingdom; 27,684 boxes in 1914; 31,258 in 1915; and 43,790 in 1916.

Directors of the California Avocado Association recently chose Oct. 31 and San Diego for the next semi-annual meeting. They recommended that any one fruiting a new variety give 6 trees to the State, three of these to be planted at the Riverside Experiment Station and three at the Whittier Botanical Gardens. Dr. H. J. Webber of Riverside was elected president and C. D. Adams of Upland secretary.

Two carloads of honey shipped from Lindsay May 16 brought $3957 f. o. b. One carload had been shipped the day before at about $2000 f. o. b.

Sulphuring vines thoroughly with knapsack machines cost for labor and sulphur, 37 cents per acre on the University vineyard at Kearney Park.

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Mulefoot hogs, choice pedigree breeding stock, both sexes, 140 head ready for delivery.
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ASTERS—in 3 colors, 35c per doz.
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Where One Grew Before

The farmer who can make two ears of corn or two blades of wheat grow where but one grew before, is well on the way to prosperity for he is solving the problem of intensive farming.

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has made many a dry, unproductive district into profitable farming country—a garden spot of bountiful crops.

This is not empty boasting or mere theory—it is *fact.* Ask anyone who has used G-E motors on his farm—he will tell you that they save money every day in the year. The first cost is low, too. Write our nearest office—it costs nothing to find out and places you under no obligation.

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DECIDUOUS FRUITS.

Sonoma cherries are a fair crop.

Alameda cherries are a very light crop.

Deer are browsing young Butte county orchards.

San Joaquin Royal Annes are on the Stockton market.

Visalia canneries are empty and preparing for a big run.

Early cherry shipping from Vacaville is practically finished.

Some Tuscan peach growers at Yuba City are holding for $30.

The California Peach Growers had $747,500 capital subscribed May 15.

Would-be buyers are offering 10½ cents at Hanford for 1916 dried apricots.

The recent rains caused considerable split cherries in the Sacramento and tributary valleys.

Stanislaus county peach growers are making an effort to pool all clings and hold for a certain price.

The Sonoma Gravenstein crop promises to be a very good one and free from scab. Late varieties are lighter.

The first shipment of Tragedy plums from the State was made May 13 from the McMurtry orchard near Vacaville.

July 1, 1917, is the date by which 75 per cent of prunes grown in California must be contracted to the new association or it will be dropped.

Fresh peach buyers around Visalia have been saying they could buy frees and clings around Selma at $15 and $250, but this is said to be untrue.

The Golden State Canning Co. of Ontario is making an awful effort to get freestone peaches at $15 and clings at $20 in the Porterville district.

The California Cured Fruit Exchange has offered to sell its large Berkeley warehouse to the California Peach Growers.

Lake county horticultural commissioner F. G. Stokes is pleading for frequent cultivation of the 950 acres of young orchard which will need all the moisture that can be conserved.

Several hundred tons of dried peaches are said to have been contracted by independent packers around Fresno at whatever price the association may set. Look for the nigger.

Bay county apricot growers met May 24 at San Jose to get an understanding as to what they ought to sell canning apricots for. With the light crop, no holdover, an outlet to the green and dried fruit markets, the growers fixed a price of $60 per ton for canning and 15 cents per pound for dried.

Green apricot shipments from Sultana and neighboring districts are forecasted at about 10 cars. They are beginning; plums will soon be coming; peaches will follow by early July; then Malagas late that month.

That fruit canners are fearing the co-operative movement around Yuba City is evidenced by their anxiety to make long-term contracts for canning peaches at $20 to $26.50 per ton. It will be remembered that the best clings dragged at $7.50 at ripening season there last summer.

OLIVES AND NUTS.

Some Esparto almond growers expect a 75-per-cent crop.

Guinda expects to ship 25 tons almonds as against 200 last year.

The Oakdale Almond Growers plan a warehouse and sulphur-shed.

Almond and fruit growers of Capay Valley were seriously injured by the early May frost.

Butte county olive growers report better offers for their crops than at this time last year.

That walnut associations should offer part cash for culls and sell them under supervision instead of letting peddlers use them to break the market for good walnuts, is the proposition urged as the Santa Ana plan.

The walnut crop is said to be practically normal. About $85,000 worth are usually grown here.

GRAPES AND SMALL FRUITS.

Tokay buyers at Lodi are offering $25 per ton for August and September delivery.

The California Associated Raisin Co. is advising Thompson raisin growers not to sulphur their raisins.

Wild blackberries from the San Joaquin river have been selling in Stockton at 20 cents per pound.

The California Fruit Exchange estimates Malagas at 85 per cent in Fresno and Tokays 75 per cent at Lodi.

Great Western Machinery Company
INCORPORATED
MACHINERY OF EVERY DESCRIPTION.
GUARANTEED
LARGEST HOUSE WEST OF CHICAGO.

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FORGES BELTING SLIP JOINT PIPE
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THE BATES STEEL MULE does everything that horses do, and does it better, quicker and cheaper. Any implement that you have on your farm today can be hitched to and hauled by a BATES STEEL MULE. You can get twice the work in a day out of a BATES STEEL MULE hitched to any implement than you can get out of three span of big, strong horses hitched to the same machine.

ONLY one man is needed on any implement hitched to a BATES STEEL MULE. The operator sits on the implement and drives the machine as he would drive horses, except that it is much easier. Take harvesting for example; you only have to steer the BATES STEEL MULE with one hand while he is pulling you along as four horses would. The corners are cut as square as with horses, and you get double the acreage cut in a day.

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"*** There were three 35 h.p. tractors plowing where I was harrowing, but my BATES STEEL MULE was THE TRACTOR that toddled along all day. I like the machine very much: one of its features is that it does not eat a bunch of hay and feed when idle, * * *" — (Name on request.)

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of California
320 N. SAN PEDRO STREET,
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"***We had no repairs on your 30 h. p. BATES STEEL MULE during 120 acres of plowing, and we used 14 gallons of distillate per day. We plowed about an acre per hour. The machine was in as good condition when we were through as it was when we received same."--(Name on request.)

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is guaranteed to excel in workmanship, capacity and durability any baler made. Longest bridge. Easiest to feed. Requires least power. Makes most popular bale—any size desired. Horse or Belt Power. Awarded Gold Medal P. P. I. E.

Established 1862

Junior Monarch Hay Press Company.
San Leandro, Cal.



Testing Showed Value of Cows.

[Written for Pacific Rural Press.]

Probably the best way to learn the benefits of a cow-testing association is to spend a day on the ranches of its members, hearing stories of increased returns from their dairies after a few months of association testing.

Such was the experience of the writer during April in the district where the Gridley Cow Testing Ass'n has been operating since the fall of 1914.

Secretary S. F. Bonner of the association related how he purchased a cow for $92 from a dairyman who had been weighing his milk but not testing it. The former owner considered the price received a big one and all that she was worth, and yet during the first year in the association, she gave 506 pounds of butter fat and was dry two months. Now her heifer calf is worth as much as Mr. Bonner paid for the cow before freshening.

Knowing the best cows is not the only important consideration with Mr. Bonner. He also knows his poor cows. This spring with a shortage of feed he has materially reduced the size of his herd rather than buy high-priced hay for poor cows. In feeding he also finds the monthly tests a decided advantage, as his records show the most efficient feeds.

One cow was giving 34.3 pounds of milk in her third month after freshening. During the fourth month three dollars' worth of rolled barley was fed which was just about offset with the increase in fat. But when the cow was in the seventh month of her lactation period, after four months' barley feeding, she was giving as much fat as she was in the third month without barley. While the barley ration was discontinued after the seventh month, the previous feeding was shown in her milk flow up to the time she was dried up and she was in much better physical condition for the next lactation period.

Before this association started, the writer visited the ranch of L. Kaiser, whose cattle were considered the best in the Biggs or Gridley district. Mr. Kaiser had tested at irregular intervals and thought that he had his herd pretty well weeded out; but this year he said that during the first three months he was in the association he sold 15 head that proved unprofitable. Last year Mr. Kaiser had the highest average herd test of any member in the association with an average for 80 cows of 317 pounds of fat.

But it is not always practical to discard a cow because she does not do well one month. This was the experience of D. G. Beale, who purchased a new herd last year and entered them in the association. Among the lot was a small cow that Mr. Beale was advised to sell after the first testing. The fact that she was small and did not consume much feed led Mr. Beale to keep her, however, and after freshening this spring she has been giving 50 pounds butterfat per month.

Like other associations of this kind, it has taken some time to prove its worth to the dairymen, but the association now has 750 cows entered and is in better financial condition than ever before. The yearly charge per cow is one dollar in the Gridley and Biggs districts and $1.25 per cow in the Chico and Marysville districts, where the expense of the tester is greater.

It is noticeable that a very much larger percentage of the dairymen in the district are using purebred sires now than two years ago, and the number of silos have increased many times during the same period. Perhaps nothing improves dairying conditions in a district more rapidly than does the cow-testing association.

SUGAR BEET TOPS FOR BEEF AND DAIRY CATTLE.

[Written for Pacific Rural Press.]

Beet tops for beef cattle are recommended by H. J. Mayo of Los Angeles county. For six years he has been selling the tops in the field to a man who brings cattle down from Antelope valley, surrounds the fields with movable fences, and makes first-class meat. There is a large percentage of readily digestible sugar in the leaves.

For dairy cows, the tendency of beet tops fed dry or green is to turn their energies to fattening and to dry up their milk according to Mr. Mayo, who used to have a dairy. The cows would turn away from bran, alfalfa, etc., to get the leaves. It is claimed that the test always went up.

COW WON'T DRY UP.

To the Editor: I have been trying to dry up a cow since April 1. She gives 10 to 15 pounds per day. I have tried milking a little out each time, then let her go 3 or 4 milkings, but no use. She is due to calve June 10. Will it hurt to milk her regularly right up to the day of calving? I always had trouble drying her up. It usually took 4 to 5 weeks, but this time seems a failure. She gives about 4 gallons when fresh.—C. O. C., Ceres.

[Don't worry if she doesn't get too thin. Don't milk her entirely dry.—Editors.]

A stallion that is not fit to work is not fit to sire work horses.

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PIPE — For irrigation water, supply-power. Cheaper than any other pipe of equal size, capacity and endurance.

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Where you will secure good stock worth the money.
THE DISPERSAL SALE OF THE CHARLES JAY WELCH
HERD OF REGISTERED HOLSTEIN CATTLE.
105 Head-85 Females, 20 Males
AT LOS BANOS, WEDNESDAY, JUNE 28th, 1916.

This is a royal opportunity for you, Mr. Breeder, Mr. Beginner, or Mr. Dairyman, to secure your selection from a herd that has been kept intact for 14 years. An old-established herd and one of the best on the coast. Including King Segis Wayne Pontiac, a yearling son of the great King Segis Pontiac and Elsie Veeman Wayne, a 30.92 4-year-old daughter of Sir Veeman Hengerveide from a 26.-lb. dam. A good individual about 7/8 white. About 20 cows will be bred to him. A rare chance to head your herd with a brother to the $50,000 bull at your own price!

Catalogs ready about June 12, 1916. Write for one.

Jas. W. McAlister, Jr., Chino, Cal., Sales Manager.
Col. Ben. A. Rhoades, Los Angeles, Cal., Auctioneer.

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SOME TYPICAL KNOB HILL BROOD SOWS.
(Large type, combined with high quality.)

Our herd is nominated in the California Poland China Futurity to be held in connection with the State Fair this fall. We have just imported and added to the herd some of the best blood of the East, including boars from W. J. Hather, Ord, Neb., and Peter Mouw, Orange City, Iowa.
We are offering pigs of both sexes from prize-winning stock. Litters coming at all seasons and stock usually on hand to suit customers.

Come and see them, or write for what you want.
ALL STOCK REGISTERED. ALL BREEDING GUARANTEED.
A. M. HENRY, Prop. Farmington, Cal.

Thousands of Feet, New and Second - Hand
WATER PIPE

Positively lowest prices—all sizes. Finest water pipe, well and water casing, riveted and irrigation pipe, wrought iron fence posts, etc. Big stock. Prompt shipments anywhere. Write, phone or wire for quotations.

Adams Pipe Works
Under entirely new management.
2025-39 Bay St., Los Angeles.
Broadway 1264—F1917.

Alfalfa in Farrowing Pens.

[Written for Pacific Rural Press.]

Two acres of alfalfa furnish all the room necessary for 32 brood sows and their pigs on J. L. Mendenhall's ranch in Colusa county and at the same time supply all of the green alfalfa pasture that is required.

The land was especially prepared before seeding. Two checks were made 100 feet wide, separated by a driveway nine feet wide. The pens were fenced off, 40 feet wide and extending across the check, making the completed pen 40 by 100 feet. At the rear corner of each pen was scraped a mound large enough for an A shaped house.

With this arrangement the alfalfa can be irrigated, even when the pens are all occupied, as the water does not rise high enough in the check to reach the top of the mounds.

The alleyway between the checks is wide enough to allow driving through with a team and wagon. Barrels are set at regular intervals so that each one is accessible to four pens. Water is piped to each pen where an iron trough is used for watering.

The sows and pigs are kept in these lots six weeks to two months after farrowing, being fed ground barley soaked in water 48 hours, together with the alfalfa pasture. Mr. Mendenhall does not believe in feeding dry grain to young pigs as it has been his experience that they scour badly on it.

Until the pigs are six months old, they are fed a pound of barley a day and run on alfalfa pasture, later running on 1,000 acres of grain stubble about six months longer, when they are turned off to the butcher weighing about 200 pounds.

By feeding some barley 15 hogs per acre of alfalfa is the average on the Mendenhall farm the year round; and with the stubble as a finisher, the 300 brood sows show a substantial profit each year.

SALTED FIRST ALFALFA.

[Written for Pacific Rural Press.]

First cutting alfalfa is often considered poor feed by dairymen; but the experience of P. D. Bane of Orland, with a crop of first cutting in 1915, has led him to believe it better than other cuttings, if properly stacked.

His hay was poorly cured and he didn't expect it to make very good feed. However, in stacking, he salted it well. When he started to feed it to his dairy cows he found that they preferred it to either second or third cutting and that their milk flow was better also.

SELLING LAMBS FROM MERINO BASE.

[Written for Pacific Rural Press.]

One of the choice bands of lambs that buyers are always eager to secure is the annual crop raised by the Stanford University at their Vina ranch in Tehama county.

Like all sheep men, who operate under range conditions, the problem is to maintain the Merino base for their range flocks and at the same time have a crop of growthy early lambs.

This year they have 8,000 lambs, contracted for delivery in June at a very attractive figure. These lambs are sired by Shropshire bucks and out of Merino ewes. All but 1,800 to 2,000 ewes are bred in this manner each year in order to produce a better quality lamb.

To maintain their Merino base, Merino bucks are bred onto the balance of the flock, the ewe lambs being selected each year and turned with the range bands for future breeding purposes, while the ram lambs are marketed.

In 1914 and 1915 November and December lambing under shelter was practiced, lambs being sold at Easter. This has been discontinued for the time by Manager Houseman.

Unlike most other large sheep growers, the wool from this flock is not sold locally but is consigned to Boston wool dealers, having been shipped in car lots this spring as soon as sheared.

MILO AND SORGHUM SILAGE.

[Written for Pacific Rural Press.]

"Last October" (1915), said R. Breedlove of El Centro, Imperial Co., "I put in a 100-ton De Laval silo. I filled it with milo maize and sorghum and am very well pleased with the results; so much so that I will fill it just the same way this year.

"I planted 13 acres of milo and headed the first crop for dry feed. soon after a new crop grew on the old stalks and this second crop, stalks and all, I put in the silo, making about 70 tons of silage. With this I mixed in 30 tons of sorghum which I grew on an additional 3 acres. Also I blew in at the same time 3,500 gallons of water. When feeding time came I found that a little more water would probably have been a little better. One can't use too much water in siloing a milo crop in this valley.

"A silo seems the only solution in this valley for getting the whole good of a milo crop, as the stalks are too dry for feed purposes otherwise.

"During the time I was feeding silage I found that although I fed all the green feed my 70 head of dairy stock could eat, their consumption of it was only ½ what I had used in previous years. The total cost of putting up my silage was $1.50 per ton, figuring only the cutting, hauling, and filling operations."

WITTE



PRICES GO DOWN!

2 H-P, $29.95; 3 H-P, $47.85; 4 H-P, $64,75; 6 H-P, $89.90; 8 H-P, $129.80.
Write for prices on 12, 16 and 22 H-P.

You can't buy so *good* an engine at the same price. You can't buy a *better* engine at double the price. Lower fuel expense. Simple in construction. Easily started. 30 to 50 per cent surplus power. 90-Day Trial Offer. Sold direct, factory to user. Established 1870.

Write for free book, "How to Judge Engines" and for pricelist of all sizes and styles, Kerosene, Gasoline, Distillate, Naphtha and Gas.

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At Prices within Reach of Every Breeder and Dairyman.



A Grandson of Tilly Alcartra.

We have several splendid grandsons of this now famous cow, which we can deliver to you at prices which will suit the pocketbooks of every dairyman wishing to improve the quality of his herd, whether it be a grade or pure-bred herd. These bulls are sired by our herd bull, Prince Alcartra Korndyke and out of A. R. O. cows, and are the only living grandsons of a cow having a record of over 30,000 pounds of milk in a year. Such an opportunity for increasing production has never been offered DAIRYMEN AND BREEDERS in California, price and quality considered. Buy one of these bulls and solve your low production problem. Write

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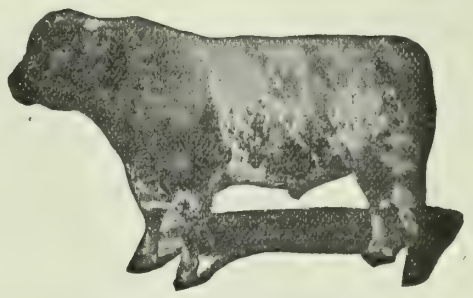
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KING LANCASTER,
Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.
THEY HAVE GRAND CHAMPIONS BEHIND THEM.

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For Fares, Sale Dates, Train Service, Etc., ask Southern Pacific Agent.

Importation of Eastern Stock

I will make a trip East in the month of June to purchase several carloads of Live Stock for California breeders.
My large acquaintance with Eastern breeders enables me to buy high-class animals at moderate prices.
This is an excellent opportunity for those desirous of either improving or adding to their herds. Orders solicited.
Address W. M. CARRUTHERS,
CARRUTHERS FARMS, Mayfield, Cal.. or 513 HEARST BLDG., San Francisco.

HOPLAND STOCK FARM
REGISTERED SHORTHORN BULLS
REGISTERED BERKSHIRES (Boars, Bred Sows and Gilts)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize Senior Yearling, P. P. I. E.
3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
SAN FRANCISCO OFFICE, 1210 FLOOD BLDG.

Digester Tankage
Send for sensible folder on feeding hogs
Western Meat Company
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With the Livestock Men.

DAIRYMEN AND DAIRYING.

Dairymen of Kings county received $150,000 for April butterfat.

Tulare creameries paid $77,000 for April butterfat at 29½ to 32½c.

The Napa State Hospital has a grade cow giving 72 pounds daily.

J. S. Moore of Manteca is gradually working into registered Holsteins.

Imperial Valley ships 400 gallons of cream each night to outside points.

All Jerseys eligible to the Register of Merit will hereafter be entered free.

A motor-driven pasteurizer has been installed by Miller Bros. of Hanford.

Wisconsin cheese factories pay for most of their milk on a butterfat basis.

John Linder of Gilroy expects to put up a ranch cheese factory next season.

The Bodega Co-operative Creamery is putting out about a ton of butter per day.

The Henderson Co. of Elliott exhibited 20 Holsteins at the Butte Co. Spring Festival.

O. P. Osborn of Success is trying chopped green oats in two silos and wheat in another.

Orland dairymen took 11 registered Jerseys from the Rancho Dos Rios sale and 14 grades.

The Central Creamery at Ferndale is putting up 700,000 pounds of butter in tin cans for the Navy.

A. M. Draper of Heber auctioned 33 dairy cows at an average of $114.50. Some went at $177.

A merry-go-round for bulls is used on the Napa State Hospital farm. Four bulls can exercise at once.

The Calla Grove Farm of Manteca shipped a 20-months Guernsey heifer to Dr. B. Bond of Hawaiian Islands.

Of American-bred Jersey bulls 9,555 were registered in the year ending March 31, 1916; 23,017 American bred Jersey cows were registered.

April butterfat purchased by the Danish Creamery of Fresno paid 31 cents to dairymen for 147,428 pounds.

The Visalia Co-operative Creamery made 109,400 pounds butter in April, for which dairymen received $28,550.

A. W. Morris & Sons of Woodland, recently sold $40,000 worth of Holsteins to Mrs. Anita Baldwin of Los Angeles. Prince Gelsche Walker is one of them.

The American Guernsey Cattle Club registered 333 bulls and 155 cows more in the year just past than in the previous year. The club has 64 more members.

The Lewis Co. and H. L. Hill have recently brought in a shipment of registered Holsteins mostly from N. J. and have placed them on the Hill ranch at Los Altos.

A. G. Litch sold a 500-acre ranch and 150 dairy cattle near Chico to L. M. Culver, who will establish a certified dairy. He expects to go into purebred Ayrshires.

The Imperial County Farm Bureau is co-operating with creameries for high-grade cream to establish and hold a good reputation for their butter in outside markets.

The American Guernsey Cattle Club meeting May 10 elected J. L. Fisher of Philadelphia, president; and W. H. Caldwell of Petersboro, N. H., secretary-treasurer.

From April 13 to 17, reports of tests of 576 Holsteins were entered in Advanced Register. The average production for seven days was 408.1 pounds milk containing 14.5 pounds fat.

Pepsin instead of rennet is being used for American cheese making at the Wisconsin College of Agriculture as a relief for the shortage on rennet. Long-keeping tests have not yet been made.

The Holstein Friesian Association of America is offering for the State Fair 15 per cent cash on the general classification and a silver cup to the first prize winner of the 5-day butterfat test if a registered Holstein.

At the Collier-Mancebo sale near Livingston May 17, Col. R. R. Briggs sold 50 cows per hour, including one per minute in the afternoon. Some 500 dairymen attended. The price averaged $82, which was very satisfactory to the owners.

The average of the 4719 Guernsey Advanced Registered records made previous to May, 1916, was 8805.91 pounds milk and 439.15 pounds fat. The past year's 949 records were better than the average by 132.18 pounds milk and 5.24 pounds fat.

The Ferndale Cow Testing Association has a Jersey which gave 81.8 pounds fat in 1221 pounds milk in April and another which gave 85.47 pounds fat in 1554 pounds milk. There were 55 cows which gave over 60 pounds fat in the month. All breeds represented except Ayrshires.

SWINE BREEDERS AND STOCK.

The Henderson Co. of Sacramento has recently received an O. I. C. sow with six pigs and four bred gilts from Oregon.

The Cal. Swine Breeders' Ass'n will hold its next semi-annual meeting in Hanford during the October fair at that place.

California swine breeding and breeders have been attracting considerable attention in "The Swine World" of Chicago.

Mrs. Della M. Foster of Brawley shipped three cars of 7 months' hogs averaging 180 pounds. They sold at $8.25 per hundred.

A Texas bank president who furnished 326 pigs to Boys' Pig Clubs secured through the acquaintance thus made, new patrons who brought in over $75,000 in deposits.

BEEF BREEDERS AND CATTLE.

An interstate roundup of rough riders is proposed for San Jose July 1 to 4

Bakersfield shipped 143 carloads of beef cattle to market in March and April.

Gill Bros. of Porterville shipped 240 beef cattle valued at nearly $20,000 to San Francisco May 20.

Over 12,000 beef cattle are being fed chopped alfalfa and corn on the Poso Ranch near Bakersfield.

The Porterville Alfalfa Co. recently bought a trainload of young Shorthorns in San Francisco to feed.

The 6000 acre Wadleigh Stock Ranch in the Santa Ana Valley is said to have been sold to the Hobson Company.

Calaveras and Tuolumne cattlemen have had to drive their stock to the mountains early to save the scant dry feed for fall.

Daniels Bros., Ed Rutherford and Rogers Bros. of Butte county, have transferred their cattle to government reserve ranges.

Geo. Duvall of Los Angeles, will undertake fancy stock raising in Nevada county on the newly purchased Johnson and Jorass ranch.

A general mass meeting will be held in Fresno June 19 to consider

BLACK LEG LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low priced fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkge. Blackleg Pills $1.00. 50-dose pkge. Blackleg Pills 4.00. Use any injector, but Cutter's best. The superiority of Cutter products is due to over 18 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. THE CUTTER LABORATORY. Berkeley, California.

DAIRY LANDS FOR SALE

I have 4000 acres good land for dairying in Marin county for sale as a whole or in subdivisions. Good pasturage. Liberal terms. Deal only with principals. Address, BOX 219, PACIFIC RURAL PRESS.

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BILLIKEN HERD OF IMPROVED CHESTER WHITES—The Money Makers. Everything registered and cholera immune. Nothing to offer for immediate delivery. Sows now farrowing. Th pigs from these sows will be ready to ship during late May and June. Am booking orders now for these. The offering represents the very best and most popular blue lines the breed produces. Sires and dams by Champions and Grand Champions. Let me have your orders early. C. B. Cunningham, Mills, Sacramento County, California.

REGISTERED DUROC-JERSEYS—Fall boars and gilts. Weanlings sired by an excellent son of the 1020-pound Royal Muncle. We have pigs sired by this boar weighing 240 pounds at 7 months, and out of line bred Golden Model, Crimson Wonder, Orion, Chief, and Colonel sows. For information write Haden Smith, R. 1, Box 84D, Woodland, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IRA Wonder won first and Reserve Championship P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IRA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

LARGE YORKSHIRE SWINE—50 choice gilts, open or bred. 20 yearling and Fall boars at attractive prices. You are at liberty to return what we ship you at our expense if price and quality are not satisfactory. Riverina Farms, Paradise Road, Modesto, or Box 2250, San Francisco, Cal.

WANTED—Young married man to raise, keep records and fit for show Pure-bred Poland China Hogs. Salary and length of time engaged will depend entirely on the results you are able to show. Do not apply unless you are a good man with practical, successful experience and have a strong appetite for plenty of work and long hours. Geo. A. Smith, Corcoran, Cal.

REGISTERED DUROC-JERSEY — Weanlings, shoats, gilts and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES — World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

DUROC-JERSEYS—Some great weanlings of both sexes by "RIVER BEND HIGH MODEL." Improve your herd by introducing this blood. RIVER BEND FARM, St. Helena, Cal.

REGISTERED BERKSHIRES—BOARS—5 and 6 months old, $15 and $20 each. Also a few year-old ones. All pure-bred animals. G. A. Casey, San Jose, Cal.

BARGAIN SALE of Registered Berkshires; $200 buys 5 bred sows and service boar. Breeding best obtainable. Write for pedigree and description. Stozel Bros., R. 1, Manteca, Cal.

DUROC-JERSEYS, REGISTERED — FANCY WEANLINGS, PRIZE WINNING SIRE—$7.00. Either sex. June delivery only. O. P. Burns, 1108 O Street, Fresno, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE, QUICK MATURING registered Berkshires—Both sexes, $10 each for weanlings. Older ones at farmer's prices. J. M. Bomberger, Modesto, Cal.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

DEL DAYO FARM (Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen S. Day, Box 1140, Sacramento.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

REGISTERED DUROCS from Eastern sows. One yearling and several Fall gilts. No culls. S. S. Southworth, Napa, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Nowato, Cal.

FOR SALE—600 hogs, all ages. Registered Duroc-Jersey stock. Address C. H. Minto, 357 Van Ness Ave., San Francisco.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

FOR SALE—Fancy belted Hampshire hogs. Well belted young sows and boars, registered. Prices reasonable. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonsall, California.

REGISTERED POLAND CHINA SWINE — Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

POLAND CHINAS—250 lbs. in six months our aim. Imported sows. None better. Linn & Porter, Route A., Modesto, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

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AYRSHIRES—Registered: all ages. E. B. McFarland, 2 Claus Spreckels Bldg., San Francisco.

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plans for a co-operative union stockyards. This would provide a better opportunity for co-operative selling.

SHEEP AND HORSE STOCK.

King and Wolfrohm of Arbuckle shipped 1200 sheep May 20 to San Francisco at about $6 each.

The Oak Knoll Sheep and Cattle Co. has purchased 395 acres for stock raising in Napa county.

Sheep shearing was recently completed on the purebred Shropshire, Rambouillet, and American Merino ranch of Frank Meacham of Petaluma.

What is said to be the first carload of wool ever shipped from Imperial Valley was sent to Boston from Brawley May 13. There were 27,690 pounds clipped from sheep owned by F. F. Schultz.

HORSES AND GENERAL NOTES.

The Widemann Goat Milk Co. recently added 450 goats to their herd of 2500 near Salinas.

Harvey King of Lodi has a mule 6 feet 6¾ inches tall. He wants to know if anyone can beat that.

J. K. Macomber of Tipton recently shipped in nine registered Percheron and Belgian stallions and a carload of fillies.

"Co-operative Livestock Shipping Associations" is the title of U. S. Dept. Agr. Bulletin No. 718, which may be had free from Editor of Publications, Washington, D. C.

MISCELLANEOUS.

H. L. Murphy has announced that he will show two carloads of Berkshires and Shorthorns at Hanford this fall.

Florida University and the State Bankers' Ass'n have a uniform agreement by which boys who agree to follow advice and instructions of county farm advisers in raising one pig each, may borrow from bankers the price of the pig and the feed.

At the meeting of the Northern Cal. Stockmen's Ass'n in Redding Mar. 18, Dr. I. B. Paxton of U. S. Dept. Agr. favored use of powdered blackleg vaccine rather than pellets. Vaccine may be obtained free from the Department's office in Sacramento.

Napa County Fair September 13th to 16th, East Napa Pavilion.

Electric railways running into Chico provided free transportation for exhibitors at the Butte County Spring Exposition. This includes the Oakland Antioch and Eastern.

HARVESTING HORSEBEANS.

To the Editor: I want to harvest my 13 acres of horsebeans as quickly as possible, in order to plant a summer variety after them. What kind should that be and how shall I harvest them?—H. D. W., West Sacramento.

[Blackeyes will suit your conditions better than pinks or cranberries. F. Stenzel of San Lorenzo, who lives in the biggest horsebean district, advises cutting with a hand sickle, or with a horse-pulled combined mower and self-raker.—Editor.]

The greatest storage dam in the world was completed May 13 in New Mexico. It cost $5,000,000, is 318 feet high, 1674 feet long, will irrigate 180,000 acres and stores enough water to cover Connecticut 10 inches deep. It will control the entire flow of the Rio Grande. Built by U. S. Reclamation Service.

A Japanese shipped 9 tons of melons May 20 from 5 acres at $80 per ton f. o. b.

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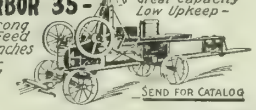
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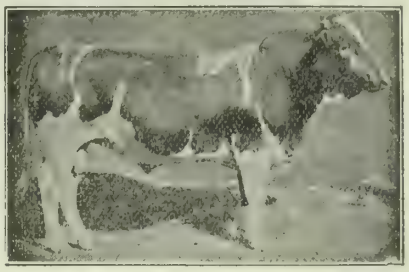
We are offering at a very low figure a splendid son of this coming young sire. Born March 6, 1915.

His record dam has the following records:

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She is a daughter of Ignaro De Kol, ten of whose daughters have records above 20,000 pounds milk, including Aralia De Kol 28,090. Three nearest dams of this bull average 26.68 lbs. butter, 668.8 lbs. milk. Dam and sire's dam average 920.27 and 24,543 lbs. milk in yearly test. A full sister to his dam has produced 885 lbs. butter in one year.

Price and pedigree on request.



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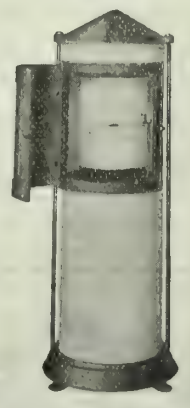
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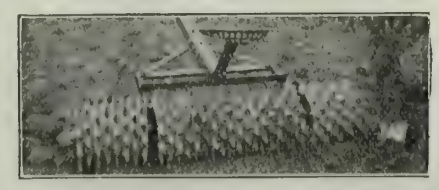
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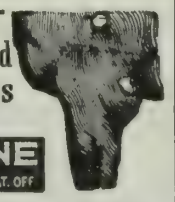
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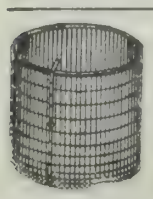
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Livestock Queries and Replies.

DUAL PURPOSE IDEAS.

To the Editor: I would like some information about the Red Polled cattle. I have heard they were an excellent dual purpose cow. Could you tell me how they rate as a dairy animal, and do they make better beef than a grade Holstein? Some say that the butchers do not like Holsteins because of the layers of fat between the tissues of the meat. Any information will be appreciated. —F. N. P., Concepion.

[At livestock shows the Red Polled cattle are classified as beef cattle, although the chief claim for them is made on their dual purpose characters. They make good beef, although not so quickly or as economically as the strictly beef breeds, and the same is true of their dairy qualities. They give a good average flow of medium testing milk, although they have not so far developed ability in this respect to allow them to compete with the strictly dairy breeds. Our observation is that if they were bred entirely for their dairy qualities they would make good dairy cows and if they were bred for their beef qualities they would make good beef animals, but it seems highly improbable to us that a cow can be supreme in both at one time. There are those who do not subscribe to this doctrine, however. The reason that butchers discriminate against Holstein steers is that their milking qualities do not develop a type of animal carrying so large a percentage of choice cuts as the beef breeds. If you can get them fat you can sell them, but don't expect as economical gains as you would get with Shorthorns or Herefords or with a breed such as the Red Polled, which claims some distinction for beef characteristics.—Editors.]

WHICH BREED IS BEST?

To the Editor: Starting at the beginning to build up a dairy herd in the San Joaquin Valley, would you advise Holsteins as compared with Guernseys? We realize that the Holstein is more commonly used than any other breed, but are not sufficiently familiar with the dairying business to know whether they are actually superior to Guernsey as profitable cream producers.—F. A. D., San Francisco.

[We suppose this question of breed supremacy in economical production has been and will continue to be the most energetically argued subject in the entire dairy industry. On the face of it, it is apparent that no one breed is absolutely known to be the most economical producer under all conditions, else there would be but one breed grown, for it is economical production that every dairyman is striving for.

It is a time-worn expression, but nevertheless true in California as elsewhere, that "the cow you like best is the cow to breed." Like everyone else we have our own personal likes and dislikes; but it has been our observation that the man who is getting economical production is the man who has selected the breed he has a preference for, and not because some one else with a preference for the breed has recommended it to him.

As a matter of fact we believe that one breed has as good a right to claim superiority in this respect as another, because any authenticated comparative tests must of necessity include only a relatively small number of animals, and no one can say that they are better, poorer, or just average representatives of the breed. As our senior editor has previously advised, choose your breed of cattle like you would a wife, i. e., the one you like best.—Editors.]

FEEDING RICE PRODUCTS.

[Written for Pacific Rural Press.]

With the introduction of rice growing on a commercial scale in various parts of the State interest in rice by-products as a feed for livestock is becoming quite general, and particularly so in the large rice districts where rice mills are being operated.

In the Gridley district of Butte county rice bran is coming into popular favor as a hog feed and also as a concentrate for dairy cows and in some cases as a part of the concentrate ration for horses. Rice polish, while also used in rations for all of the above named animals, is used more sparingly in the rations.

The objection sometimes raised against rice bran that it becomes rancid and unfit for feed is a just one according to handlers of this product, care being necessary in its storing to overcome this objection.

One large warehouse man in the Gridley district is authority for the assertion that rice bran contains a large percentage of oil and that when stacked in the warehouse or exposed to severe heat the bran becomes rancid in a similar manner to lard. He states that where each sack is allowed to have an air space around it and when kept away from hot roofs it will keep in a nice, sweet condition.

For hogs he recommends a ration of one part rice polish to four parts rice bran mixed in a slop made with fresh water. For horses he advises using one-third each of rolled barley, rice bran and rice polish.

The Oasis Ranch of Holtville has a registered Guernsey herd headed by Imp. Starlight Lad.

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Holstein Bull



Peterje Cornucopia Creamelle.

The Dam of this bull is almost a 25-lb. cow; her average fat testing, 4.7%. This high percentage in fat of the dam shows that this bull would be an excellent buy for any dairyman who aims to improve the butter-fat output of his herd.

Write or come and see him.

F. STENZEL,
San Lorenzo, Calif.

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Dutchland Col. Sir Ormsby.

High class young bulls of serviceable age for sale, sired by one of our great bulls and out of A. R. O. cows. Prices right.

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On April 21st we arrived from Missouri with a carload of choice registered Bulls and Heifers.
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Registered Duroc Jerseys.
$10 each PIGS $10 each
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What's the use of raising "Scrub Hogs" when purebreds may be had at this price! They grow faster. Send today.
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We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.
Write or call and see us.
SWINELAND FARM,
W. O. PEARSON, Prop.
Woodland, California.

WELCH HOLSTEIN SALE, JUNE 28.

Dairymen interested in Holsteins will have an opportunity to take their pick of 85 female and 20 male pure-breds near Los Banos June 28th, when the Welch herd will be sold at auction. We print a picture of the bull, Lord Snowflake of Copa de Oro. He and several of his daughters are to be sold.



STANISLAUS DUROC BREEDERS.

The first Duroc swine breeders' association to be formed in the State was organized at Modesto, May 20 and will be known as the Duroc Breeders' Association of Stanislaus County.

The objects of the association are similar to those of other community breeders' organizations, the chief ones being to establish the district as the leading Duroc district of the State, by public auction sales and to enlarge and improve present as well as future herds in the section.

It developed at the meeting that there are between 30 and 40 purebred Duroc breeders in the district, included among them being several of the oldest and largest herds in the State.

W. A. Daggs Sr. was elected president and Elmer Lamb secretary-treasurer. Another meeting will be held at Modesto, June 3 at 2 p. m., to perfect the organization and adopt by-laws and constitution.

The California Swine Breeders' Association has arranged with D. O. Lively to conduct a campaign of publicity for "More and Better Hogs in California," and better markets for them.

POLAND-CHINA BREEDERS ORGANIZE.

[Written for Pacific Rural Press.]

With a view of establishing their district as a Poland China breeding center, the Poland China breeders of San Joaquin and Stanislaus counties met at Stockton, May 20, perfecting an organization to be known as The Poland China Breeders' Association of North San Joaquin.

The new association proposes to include in its membership every breeder of purebred Poland Chinas, advertising their herds by holding purebred sales and through community effort.

Officers were elected for the following year as follows: Hale Marsh, President; W. A. Young, Vice-president; O. Lynn, Secretary-treasurer. By-laws and constitution will be drafted and presented at the next meeting, June 3, when directors will also be elected. All breeders are asked to be in attendance at the next meeting which will be held at Stockton at 10 a. m.

WHY DON'T YOU OWN SOME SHIPS?

Due to the great demand for American steamers and the unprecedented condition of the charter market, the American-Hawaiian Company will receive fabulous returns for the use of two more of their big carriers. Announcement is made that the company had hired to the Du Pont Powder Company the freighters Columbian and Ohioan, and the prices they will pay mark the high-water point in soaring charter rates. The Columbian is taken for six months at a rate of $115,000 per month. The Ohioan, let for two trips with nitrate, will bring $90,000 per month. The steamers will be utilized in the nitrate traffic from the West Coast to the Atlantic.

VISITORS DISINFECT SHOES.

[Written for Pacific Rural Press.]

An invitation to disinfect your shoes before entering Haden Smith's Duroc Farm hog pens near Woodland is designed to protect the hogs from cholera.

A box 6x12x24 inches covered with a hinged lid is kept by the gate. Visitors are expected to dip the soles and heels of their shoes in the 5 per cent solution of sheep dip which it contains. The lid keeps dirt out and prevents evaporation. The size is ample to accommodate the largest shoe.

VACATION LAND

What section of California holds forth such inducement to the vacationist as that traversed by the Northwestern Pacific R.R. Anglers will find the finest fishing; sportsmen an abundance of furred or feathered game; swimmers and bathers have a wide choice of ocean, river and bay; lovers of wild, primitive spots will find miles of great redwood and other forests; rugged mountains and elevations will appeal to trampers; cozy camping locations will entice the family; this wondrous collection of nature begins at Sausalito and extends to the world-old forests of Humboldt county.

A very interesting description of this territory is found in the booklet — Vacation—1916, free copies of which may be obtained at 874 Market Street, San Francisco, or on application to J. J. Geary, G. P. A., 808 Phelan Bldg., San Francisco.

Northwestern Pacific R. R.

REDWOOD TANKS—SILOS.



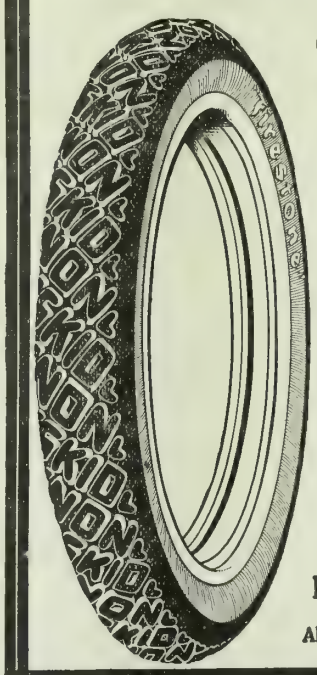
Thirty-five years in this Business in Stockton.—A 500-gallon tank, $8.00. A tank 6 ft.x2½ ft., $7.50. Other tanks equally cheap. I deal direct with the consumer. You will save 10% to 25% by dealing with me. All sizes in stock. Clear dry redwood direct from the mill by vessel. Write for prices today. Latest improved machinery. Doors, Windows, Frames, Mouldings.

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carry a name—the name of the founder of the business and its present head. This organization is composed of specialists who make nothing but tires. This intensified ability in production and distribution explains why, with Firestones, you enjoy safety, easy riding and Most Miles per Dollar.

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We carry these appliances in many of our branch offices, and will be glad to have you call and inspect them. Where we do not carry them we will be just as glad to give you our expert advice.

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for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address

EL DORADO OIL WORKS,

433 California Street, San Francisco.

Poultry for Profit---Producing and Marketing.

POULTRY QUERIES ANSWERED.

[By Susan Swaysgood, Pomona, Cal.]

Combs Dry Up.—My chickens' combs gradually dry up. After a while they lose weight. So far none have died. More are taking it.—Mrs. F. F.

[The comb is merely an indicator of an internal trouble. This case suggests liver trouble and poor circulation. Feed the birds all the green feed they will eat including onion tops, dandelion greens and cabbage; if sour milk can be gotten give that and keep all meat away. The disease is not catching through the comb. Whatever caused the first one to start is the cause of the other cases.]

White Diarrhoea.—Have lost several chicks and turkeys with white diarrhoea. Have used Pratt's and Dr. Hess's cholera medicine but to no effect. Have been feeding wheat and corn. Setting hens seem to be much worse than the others.—Mrs. A. D. S.

[The term "white diarrhoea" is made to cover a multitude of things. At some stage of any bowel troubles the discharges are white. Ordinary diarrhoea is caused by inflammation of the digestive organs; sometimes corn aggravates an already weakened system and starts the trouble; sometimes climatic changes or too much meat or dosing with unknown condition powders. Put plenty of good willow charcoal where the hens can help themselves and put ten drops of tincture of nux vomica in a quart of drinking water and let them have no other drink for two or three days. If this does not stop the trouble, give each fowl a tablespoonful of olive oil, and follow this with twelve tablets of mercury bi-chloride one one-thousandth part of a grain, drug strength, to each quart of drinking water. Leave all meat alone and mix mash with skim milk scalded.]

Hens Die Suddenly.—My hens keep dying off with no apparent cause and very few symptoms. Sometimes the comb gets whitish just before hen dies. One hen that died showed no internal disease. Sometimes find a hen dead on the nest. Lost young turks just as suddenly. This began since the weather got warm.—Mrs. A. B. C.

[This sounds to me as if Mr. Mite or Mr. Tick was at work. Investigate for mites and ticks every place where hens are kept. Be there at dawn or not later than 5 a. m. and watch this night laborer going home with your hens' blood. Thousands of hens die annually of no disease whatever, but they have been robbed nightly of their life blood by these pests.

Look well in the feathers for tick eggs. I think you will need a good spray.

Right Now use DEVIL'S DUST and Kill Lice and Mites

Sold Everywhere



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SMITH'S UNIVERSAL POULTRY FOODS AND SUPPLIES
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CATALOG SENT FREE
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ALFALFA AND GRASSHOPPERS FOR TURKEYS.

[Written for Pacific Rural Press.]

Anybody who has a steady supply of grasshoppers during the summer months can raise turkeys economically, according to H. C. Hannan of Corning.

Each year Mr. Hannan has a good-sized flock, that are run on cheap grazing land that would otherwise be utilized for sheep pasture.

For the first month after hatching in spring Mr. Hannan feeds commercial chick feed and clabbered milk.

When they are old enough to range, the pasture is covered with growing grasses. At about this time the hoppers begin to come and continue well into the fall.

"As long as a turkey can get hoppers he won't touch grain," states Mr. Hannan; but it must have green succulent feed as well; and after the grass dries up this has to be supplied in other ways.

Chopped Alfalfa for Greens.—The most satisfactory as well as the most economical substitute Mr. Hannan has found for green pasture is alfalfa hay, cut into short lengths. It is soaked in warm water till thoroughly wet, then taken out and allowed to dry till just moist. This and hoppers constitute the entire ration of the growing turks till the early fall rains, when the range again furnishes green feed and the hoppers leave.

Fattening is then started, Egyptian corn, Indian corn, milo or other sorghums being used. These with wild green feed put the turks on the Thanksgiving market in prime condition.

DON'T BREED ROUPY FOWLS.

To the Editor: I have bought 118 fowls and the roup is among them. When they are cured, will it reappear, and do eggs from roupy hens produce roupy chicks? Will it affect pullets five months and younger, and retard their laying? I am scraping the ulcers in their throats, and treating with sulphur, lard, and coal oil; and use a spray disinfectant every night. They are getting better. Could I cure an egg-bound hen?—Mrs. W. S., Suisun.

[Answered by Geo. H. Croley.]

[It would not be wise to breed from any of these fowls nor any fowls that have suffered with a serious or debilitating illness. Chicks hatched from the eggs would not directly inherit the disease, but they would be predisposed to it. If the pullets are seriously affected, it will certainly limit their ability to lay; and fowls that apparently recover are liable to a relapse. Hens become egg-bound because of excessive fat, particularly about the lower abdominal cavity; therefore, this fatty condition should be reduced to relax the pressure. Hold the fowl with her vent in the steam from an open dish of boiling water. If quick relief is not obtained, carefully inject a tablespoonful of olive oil and give the fowl half a teaspoonful of olive oil every three hours. Feed on green stuff and soft, cooling food containing an abundance of bran.]

Bull tractors are being equipped with kerosene-burning attachments.

GOOSE COULD NOT WALK.

To the Editor: I have a goose that lost the use of its legs. I put her in a pen and fed her well for about two months when she became as well as ever. I have had hens affected the same way. What is the cause?—Reader, Roseville.

[Answered by Geo. H. Croley.]

[If it was a young bird that had not been injured, the trouble was due to too much fat-forming feed and lack of bone meal, bran, and other bone forming substances. If an old goose, it was probably rheumatic cramp that is caused in ducks and geese by roosting directly on sand or sandy soil. Water fowl quickly contract rheumatic cramp unless provided with a wooden floor or litter to roost upon. When mature hens are affected, it is usually in the form of rheumatism which creates more or less swelling of the joints. This is sometimes caused by improper feeding, but in nearly all cases it is due to dampness. Rub the legs with tincture of arnica and place ½ teaspoonful nux vomica in each quart of drinking water. When growing fowls are affected, it is due to excess of fat-forming food and lack of bone builder. Give bone meal, bran, and green food in abundance and reduce the starchy and fat-forming materials.]

LINE BREEDING.

To the Editor: Please explain how "line breeding" is carried on with poultry. Is "in breeding" the same? —F. O. R., Chowchilla.

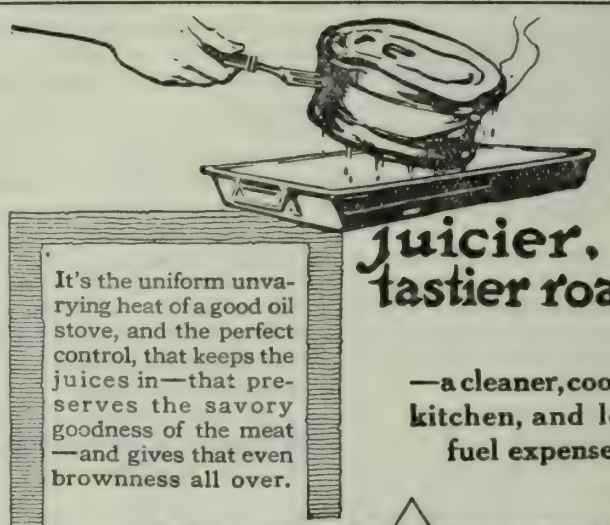
[Line breeding is the breeding of successive generations to each other to fix certain characteristics. In-breeding is the breeding of close relatives.—Editors.]

A very high price paid for pure-bred poultry often yields correspondingly big return, provided, of course, that the purchaser gets what he pays for.

CLOSING OUT--FOR SALE CHEAP

3 Electric Incubators, 576 egg capacity each. 2 Electric Incubators, 144 egg capacity each. 16 Electric Brooders, 150 chick capacity each. Complete, with circuit breakers, thermostats, connecting sockets, etc. Address,

T. R. JACOBS,
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It's the uniform unvarying heat of a good oil stove, and the perfect control, that keeps the juices in—that preserves the savory goodness of the meat—and gives that even brownness all over.

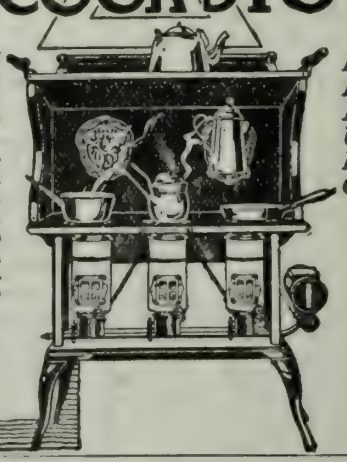
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YOU'LL GET EGGS from stock purchased here. All tested by Hogan system for egg-laying qualities. Butcher gets all testing less than 125 eggs per year capacity. Going to breed Reds exclusively. Have some good White Leghorn and Barred Rocks, yearling and two-year-olds, will sell reasonable. Get busy. Write today. C. W. Hinrich, Palmdale, Cal.

BABY CHICKS—Strong and healthy, from high-bred free-range White Leghorn stock. Prices on application. Western Hatchery, W. S. Waldorf, Petaluma, Cal. Box 647 Los Angeles.

WYANDOTTES—Beautiful, useful and profitable. Best for showing; best for egg-laying; best for table. Largest Wyandotte Farm in the Southwest and the only complete family of Wyandottes known. Eleven varieties and each from the finest strain bred in the United States. Hatching eggs and baby chicks reasonable. Write us for full particulars. VILLA WYANDOTTE FARM, Villa Road, Lamanda Park, Cal.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks' old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired Heavy Winter Layers. W. C. Smith, Prop., Corning, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for Catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396 Los Gatos, Cal.

BABY CHICKS—We will hatch during May and June, so order now and get them when you want them. All good strong youngsters from good layers. White and Brown Leghorns, Barred Rocks, R. I. Reds and Black Minorcas. Campbell Poultry Ranch, Campbell, Cal.

PLACE YOUR ORDER NOW for May delivery of White Leghorn Chix from Jackman's purebred, heavy egg-producers. You get the best at lowest price. $8 per hundred, $75 per thousand. Sunnyside Poultry Farm, R. 2, 1610 Vine St., Sacramento, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., INC., Poultry Supplies San Francisco.

INCUBATOR CHICKS—White Plymouth Rock, White and Brown Leghorn. Highest class of stock bred to standard and to lay. If you are interested in the best send for catalogue. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

IT WILL INTEREST YOU—Our special circular and prices on R. I. Red, Black Minorca, White and Brown Leghorn chicks for June. Low price, high quality, prompt delivery, express paid. Roofden Poultry Ranch, Campbell, Cal.

CHICKS!! Day-old chicks from my healthy vigoous, heavy-laying, free-range stock of Hoganized S. C. White Leghorns. Price, $7 per 100. H. P. Hansen, Route 4, Box 177, Petaluma, Cal.

BUFF ORPINGTONS—Eggs from high-class matings that have correct color, shape and large size. Choice exhibition and utility stock for sale. No chicks. E. J. TALBOTT, San Mateo.

PLACE YOUR ORDERS with the SANTA CLARA HATCHERY for the different breeds of baby chicks and baby ducks. Joseph A. Bihn, Prop., San Jose, Cal., Route 6, Box 336C.

ORPINGTONS—BUFF AND WHITE—Black Minorcas and Carneaux pigeons. Breeding stock at half price as I am selling out. Mrs. Susan Swaysgood, Route 2, Pomona, Cal.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized, heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorcas, White Leghorn, stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

HERE IT IS—White Rock baby chicks. $15 per 100. Hatching eggs, $1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ceres, Cal.

BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trapnested stock Fairmead Poultry Farm, Fairmead, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and cockerels. B. C. Quessenberry, R. 4, Lodi, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs, $2 to $5. Chicks, pullets, cockerels. R. W. Stawestski, Route 2, San Jose, Cal.

TRAPNESTED LEGHORNS—White and Buff Stock Eggs, chickens. Arthur R. Schroeder, Box 179B, Mountain View, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL Address Wm. A. French, 545 W. Park St., Stockton Cal.

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BELGIAN HARES—Young stock for sale. Hurd Bros.,

VARIETY IS NEEDED IN A BALANCED RATION.

To the Editor: Please state your opinion of feeding hens and other mature fowls an exclusive diet, in self-feeding hoppers, of a mixture of bran, crushed barley, and green chopped alfalfa.—J. S. A., Los Angeles.

[Answered by Geo. H. Croley.]

[In the immediate vicinity of Los Angeles these ingredients, in the following proportions, would make a balanced ration for egg production, the feeding of which to a vigorous, hungry lot of hens of a good laying strain would doubtless cause them to lay well for a very short time only because they would soon "go off their feed": 22½ pounds rolled barley, 37½ pounds bran, and 40 pounds green chopped alfalfa. Fowls are omnivorous and demand a great variety of feed, including meat and bone; without them they will not continue to thrive and produce eggs in abundance. To use green alfalfa as an exclusive green feed will cause the eggs to be of poor quality and worth ten to thirty per cent less than extras. This mixture has another fault—the boss hens will fill up on barley, get overfat, and throw the ration out of balance for the remainder of the flock.]

WATERY EGGS.

To the Editor: I have some very fine hens dying from a peculiar trouble. The eggs that are forming all turn to water; the hens linger a week or so and then die. Can anything be done to save them?—B. F. R., San Luis Obispo.

[Answered by Geo. H. Croley.]

[This trouble is rare and very little is known regarding its cause, but it is suspected that it is an unusual form of tumorous growth because at times masses of membranous tissues appear in this thin liquid that are supposed to be cystic tumors in suspension. It has been suggested that it may be caused through fright at a time when the ovary of the hen is compressed by an overfat condition. In the opinion of one European authority it is an infectious disease.]

HATCHET THE MOLE.

To the Editor: How can we get rid of a mole in the lawn?—W. F. R., Bishop.

[The best way we know of is to strike into the moving earth with a hatchet.—Eds.]

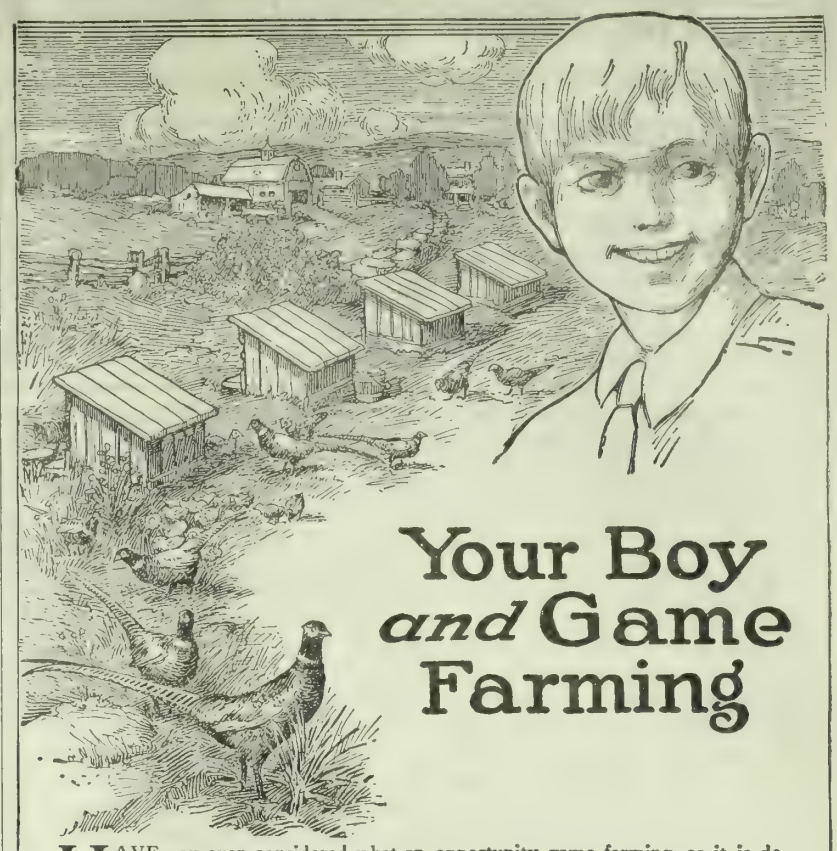
CANVAS HOSE MILDEW.

To the Editor: What kind of oil should I dip my canvas hose in to prevent mildew and rotting, but leave it pliable?—S. T. C., Berenda.

[Boiled linseed oil.—Editors.]

Careful records demonstrate that on an average, 25 fowls will pay fully as much profit as one cow, and with less labor.

B. R. Kingsberry of Heber, Imperial Co., reports an extraordinary good looking and laying quality in his poultry due to the fact that he, for over a year, has been feeding cottonseed meal. His 300 hens at present are laying about 18 dozen a day on the average. The plumage of his poultry shows a whiter and glossier effect than those not fed the meal. "I pay $1.25 per hundred for cottonseed meal and one pound of that has four times more protein than milo corn. Lots of protein makes more eggs," says he.



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Thousands of ambitious, industrious boys on American farms are playing a big part in the intensive development of our agricultural resources. Game farming falls right in line with their activities.

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This is a profitable and pleasant industry for you and your wife as well as your children.

The breeding of game birds is profitable from a marketing standpoint. The demand for eggs and for breeding stock is much greater than the supply, and will be for years to come. Pheasant eggs, for instance, sell today at from $20 to $25 a hundred. Live birds bring from $5 to $7 a pair.

It will, at small expense in time and trouble, supply you with an abundance of food for your own consumption. Pheasants, wild turkeys, and other birds forage much of their own food and require comparatively little attention.

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Write today, or let your son write, for the booklet, "Game Farming for Profit and Pleasure." You will find it well worth reading. Please use the coupon below.

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Every hog-breeder in the State should have a copy of this book handy to refer to in cases of emergency. Every day the practical side of the book will help you. The author, W. S. Guilford, is a swine breeder, and he tells just what you want to know when a difficulty presents itself. The book contains 256 pages of text, besides many full-plate illustrations. Tells how the successful breeders feed and handle their hogs.

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The Home Circle Page of the Pacific Rural Press

MRS. BEST'S VACATION LETTER.

My dear Friends:

With school out, or nearly so, and the first of June only a few days away, vacation time seems right at hand.

While San Francisco has a bracing summer climate, and many interesting things to occupy you, yet it is not the only pleasant place to spend your time away from home. If the beach appeals to you at this end of the State there is Monterey, famous for its historical associations, and Santa Cruz with its bathing, boating and crowds of people.

In the southern end of the State there is almost one continual line of beach resorts from Santa Monica through Ocean Park, Venice, Redondo, San Pedro, to Long Beach. All of these towns have bath-houses, cottages or apartments for rent and during the season, which lasts from about June 15th to September 15th, many of them have daily concerts by good bands both afternoon and evening. The surf bathing is very good in most of the places, and it is ideal entertainment for little people playing in the clean sand or paddling at the water's edge all day long.

These resorts are well patronized, for Los Angeles is only 15 miles away, and many people come from Arizona to escape the heat there.

Only a couple of hours by steamer from San Pedro to Catalina Island, perhaps the most exclusive of any of the summer resorts. Here is where the celebrated tuna fishing is found.

On farther south is San Diego where perhaps the chief attraction at present is the Exposition. This town has the enviable reputation of having the most equable climate in the State.

We must not forget to mention Santa Barbara, which has a charm all its own, and is equally as popular for a winter as for a summer resort.

Let me urge all of you who can possibly manage it to get away from your homes for at least two weeks. You will go back with renewed vigor and energy and will find that in that respect alone the trip has paid for itself. Yours devotedly,

ROSABELLA BEST.

FRESHENING BLACK SILK.

Will you tell me how to freshen black silk by removing stains and stitch marks, and also how to brighten black lace that has become gray from age?—Mrs. L. S., Mountain View.

Various substances are recommended for cleaning black silks, including logwood, tea, coffee, vinegar and ammonia. Dust the cloth carefully, spread smooth on a flat surface and apply with a piece of flannel a cold, strong infusion of tea, or equal parts of clear cold coffee and water, or a dilute solution of ammonia in water. Sponge both sides of the fabric, taking care not to crease it, and make the silk quite wet. Press with a warm (not hot) iron between two pieces of cloth.

The same treatment will freshen black lace, but if it is too rusty dip in gasoline in which a little black tube paint has been dissolved.

MINT JELLY.

Peel and core eight good-sized apples. Cover with water and cook until nearly done. Pour off and strain 2 cups of the juice and put into a saucepan with 2 cups of sugar, when well dissolved add 10 cents worth creme de menthe syrup (may be purchased at any soda fountain), and let boil until it will jelly. This makes a nice green jelly, which is delicious with roast lamb.

ANOTHER PORK PIE RECIPE.

I was interested in the recipe for English pork pie printed in your paper dated April 15, 1916, but did not recognize it as coming from England.

Will you accept one from a really truly Englishman, or rather Englishwoman?—the kind "mother used to make," and which was baked in a brick oven, and pronounced good by the household generally.

Ingredients: 1 lb. flour, ½ saltspoonful of salt, 2 eggs, 1-3 pint water, 6 oz. butter. To every 31 lbs. meat (pork) allow 1 oz. of salt, 2¼ ozs. pepper, a small quantity of cayenne, 1 pint water and 1 dessertspoonful of powdered sage—if liked.

Mode: Spread the flour, which should be sifted and thoroughly dry, on the baking-board; make a hole in the center, into which put the butter, work it lightly into the flour, and, when quite fine, add the salt; work the whole into a smooth paste with the eggs (yolks and whites) and water, and make it very firm. Knead the paste well, and let it be rather stiff, that the sides of the pie may be easily raised, and that they do not afterwards tumble or shrink. Cut the meat into small pieces, season with salt, etc., in above proportion, and press it compactly into the pie, in alternate layers of fat and lean, and pour in a small quantity of water; lay on the lid, cut the edges smoothly round and pinch them together; decorate with leaves and flowers cut from the pastry. Bake in a slow oven.

These pies are usually eaten cold for lunch or supper, and the appearance is greatly improved by taking off the top cover and decorating with bright-colored aspic jelly either in spoonsful or molded into fancy shapes.

An inexperienced cook may find it a little difficult to raise the crust, but if a small jar or glass bottle is placed in the middle of the crust and the dough molded over it until a start is made in the raising, it will be found very simple. The crust is seldom eaten anyway, and it is easier to handle if made **plain** like the above, but if a richer crust is desired, increase the quantity of butter. The raising of the crust would then be a little more difficult, but by baking it in a cake mold and allowing it to remain in the mold until cold it would then be perfectly easy.

AN ENGLISH SUBSCRIBER.

"Johnny," said the teacher, "what is a dromedary?" Johnny did not know, but Ralph did. "I know," he said proudly. "A dromedary is a two-masted camel."

"The garden, the sunshine and the outdoor air make for health" is the motto of a "Health First" poster.

DEFERENCE TO AGE.

There is no greater test and proof of good breeding than your attitude toward elderly people. In deference to age we are far behind the Japanese and Chinese, with whom it is a cardinal virtue. Unfailing respect, unvarying courtesy, untiring consideration for those crowned with years, is a characteristic of these two great Asiatic races, one that we would do well to emulate and copy.

The self-sufficiency and self-importance of American youth is one of our gravest faults. The tendency to ignore and put on the shelf those whose life race is nearly run marks ours as a crude, half baked, crassly inexperienced civilization.

See what you can do to overcome this serious defect in our national manners by being yourself kind, attentive, and helpful to all old people, of high or low degree, who come your way in the course of a day. You have no idea of the grateful appreciation you will meet as the result of such a line of conduct, nor of the number of people who will, consciously or otherwise, follow your example.—Chicago Tribune.

DISINFECTION.

After the recovery of a patient ill with a contagious disease the room occupied should be thoroughly disinfected before being again used. All articles of little value should be burned. All other articles should be left in the room until the whole can be thoroughly disinfected. This is ordinarily done by the burning of sulphur or the use of formaldehyde. Both of these substances can be bought in candle form ready for the touch of a match. The room should be tightly closed, that the fumes cannot escape, and then afterwards thoroughly aired.

CLEANING MATTRESSES.

Stains on mattresses may be removed by covering them with dry laundry starch and moistening this with enough soap or soap jelly (made by melting scraps of hard soap in about their own bulk of boiling water) to form a thin paste, which will dry on, but not soak through into the mattress. Let dry and brush off with a stiff whiskbroom. Repeat if necessary, Afterwards sponge with ammonia and water.

Miss Fay Clake, a University of Oregon girl, is superintendent of schools in a Washington county of 9,883 square miles in which only 15 of 62 schools can be reached by railway. Once in "swinging around the circle" she traveled 400 miles in a wagon without springs.

FLORAL DEPARTMENT.

By Geo. N. Tyler, Los Gatos.

I have a query this week as follows: "I have a large bed of the blue cornflowers just about past their prime in blossoming. Should they be cut back to come up again from the root? I also have cyclamen plants from seed ready to prick out, and would be glad of your cultural notes for them."

Very few annuals amount to anything after they have flowered and made seed. It would do no good to cut the cornflowers back, as what was left would probably dry up and die. In answer to second: Get some flats or boxes three inches deep, with holes or cracks in the bottom for drainage. Put in the bottom one inch of coarse material. Make a compost of the following: Two parts leaf mold, one part loam, one part sharp sand, mix these thoroughly and run through a fine sieve; fill the boxes full with the mixture, and then firm down with a brick or board; it will leave from one-half to three-quarters of an inch of space on top of flat. If your compost is not moist it should be slightly watered before transplanting the seedlings. (Flaky leaf mold is best for the compost.) Carefully prick out the seedlings, and plant them in the flats two inches apart both ways. Care should be taken not to plant too deep; the little bulblets should be one-fourth under ground. Water carefully to prevent washing, and put away in a cool, shady place, and never let them get dry, but do not keep them too wet. When the leaves meet pot them off into three-inch pots, adding a little cow manure to the soil. For watering seedlings, etc., so as not to wash the soil, take a small can and punch the bottom full of holes. The nearer you can keep the small cyclamen to a temperature of between fifty and sixty degrees, the better they will grow.

You can still put in chrysanthemum cuttings and get good flowers. It is not yet too late to plant asters, also carnations.

Plant gladiolus now for late blooming; they like a sandy soil, thoroughly enriched with half-rotted manure; also give them a heavy mulch of straw manure after planting. Plant six inches deep so they will not blow over. They do not need any staking when planted this depth.

Give your dahlias a three-foot stake, and if they are a foot or more high give them a mulch two inches thick of fresh stable manure, and water through this manure. They require an abundance of water, and you cannot overwater them when they are in strong growth. When the buds show give them a dose of liquid manure, as described in a former article, and disbud the single flowers. You can still plant the tubers, or grow plants or pot-grown plants. In fact, most of the finest exhibition flowers are planted in late May, and the flowers will be in their prime in October, the exhibition month.

If any of the readers have a recipe for warm cabbage slaw, will they kindly send it for the benefit of others who like the good old-fashioned dish of our grandmothers'

THE COLOR FOR NUTS.

am very glad that the nuts aren't red,
the squirrels would find them all," Tom said.
Now, if nuts were blue," thought the squirrel, "oh, dear!
ney never could hide from the children, I fear."

f the nuts were bright," smiled the tree, "I know
ot a nut would be left on the ground to grow."
they all agreed in the wood and the town,
hat the very best color for nuts must be brown.

—Little Folks.

HE NEW TEN-CENT PIECE.

Esther G. Babson.

It was bright and shining, fresh om the mint, and Nora Haynes had atched it being made with hundreds st like it. Nora was on a visit to hiladelphia with her parents, and e mint was an interesting place.

"When we go out," her father id, "we will ask them to give us a w new dimes and quarters in exange for our old ones." So a right shiny dime was put away in inside pocket of Nora's little red ather purse, "for a lucky piece," as e said, "and I'm never going to end it."

But alas for Nora! That very onth, on a rainy day, she took the olley for school. On opening the d purse she found that she had forotten to ask her father for her eekly allowance; the conductor was topping in front of her, so she had to open that inside pocket and give up her precious dime into the outstretched paw. It was quite a shock to the new ten-cent piece to find itself transferred from a little red leather purse, where it could move round easily, to a dirty leathern pocket where it was crowded and jammed against five-cent pieces and even copper cents; but the new ten-cent piece was plucky and wasn't going to begin its career by being a snob, and pretty soon it was being given in change to a pretty lady, who smiled as she saw it, and said, "Oh, there's a new dime, right out of the mint!"

It stayed in her pocket-book some time in grand company—halves and quarters and crisp new bills. But one day, when the pretty lady was boarding a prepayment car, in her hurry to find five cents the little new ten-cent piece fell into the mud near the car track, unnoticed by the pretty lady.

It lay there some time, until the bright eyes of a little boy spied it.

"My!" said he, as he stooped down and wiped the mud off it, "what luck! Just in time to buy that agate I wanted!" He ran back to the news stand where he had been gazing in the window, and longed for a special glass marble, a perfect beauty, marked ten cents. It was soon in his hands, and the ten-cent piece was so happy to see the pleased look on his face that it didn't mind being thrown into the till with a lot of dirty pennies. It didn't stay there long, however, for it was given in change to a man who came along to buy a paper. The man was a good man, but not very fond of parting with his money, so the ten-cent piece thought it would stay a long time with him, and it did. But one night a kind man came to the house to ask for a little help for a family who had been burnt out. He asked only a small sum from every one, and almost every person on the street had given at least a quarter. The stingy man hesitated and wasn't going to give at all; then he slipped his hand into his pocket.

The new ten-cent piece tried its best to force its way into his fingers, for it wanted to help that poor family; but the stingy man took out a five-cent piece and said, "That's all I can find now. Good-night."

The ten-cent piece was so cross it just worked around in the stingy man's pocket until it made a little hole.

"I won't stay with a mean man for a moment longer," it said as it dropped through next day and landed on the sidewalk.

This time it was picked up, strangely enough, by a little girl, one of the burnt-out family. Her sister, Louise, had been hurt in the fire, and had lost all her playthings, which were not very many anyhow, as they were poor people. Poor little Louise had to lie in bed with a lame ankle, at a kind neighbor's, and she had cried all night for her doll's tea-set, burned up in the fire.

When Mary, the big sister, found the ten-cent piece, her first thought was, "Oh, joy! I can get a new pink hair-ribbon at the ten-cent store to replace the one I lost." So she hurried off to the ten-cent store, and the first thing she saw was a darling little tea-set, almost as pretty as the one Louise lost.

Mary thought how pleased Louise would be if she could have this one, because when people have been burnt out and have lost everything they can't spend money on playthings. Poor little Louise. crying with her broken ankle,—the only one who had been hurt! "After all," thought Mary to herself, "I can wait for my new ribbon." She looked down at her braid, tied with a shoestring.

The ten-cent piece fairly sang for joy, and only wished it could have been nearer to see Louise's look of joy when the tea-set was spread out on her bed.

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FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS.

San Francisco, May 24, 1916.

WHEAT.

The local market remains unchanged, with very little trading aside from usual jobbing movement for current needs. Reports of light crops in many districts are causing a firm feeling in some markets.

Cal. Club, ctl.	$1.60 @1.65
Northern Bluestem	1.87½ @1.90
Northern Red	1.85 @1.95

BARLEY.

Crop reports from the west side of San Joaquin valley are encouraging but the yield in several other producing districts does not promise so well. The recent cool weather is expected to be of some benefit. Spot feed a little lower, and speculative market shows little strength.

Shipping, ctl.	$1.37½ @1.40
Choice Feed, ctl.	1.30 @1.35

OATS.

Prices fairly firm at the recent advance, but very little buying in local market, aside from routine feed requirements.

Red Feed	$1.35 @1.37½
White	1.55 @1.60

CORN.

There is not much demand for yellow corn, and the city market for Egyptian, etc., is rather irregular; there is a wide range in quality of offerings and amount handled here is small as compared with country trade.

Eastern Yellow, ctl.	$1.80 @1.85
Milo Maize	1.40 @1.45
Kaffir	1.60 @1.65
Egyptian	1.45 @1.50

BEANS.

Beans are rapidly cleaning up. Growers' stocks have been well sold for some time, making it difficult to quote prices from first hands; and while dealers have been holding considerable stock, the present demand, extending to all varieties, is expected to absorb everything available before new crop appears. The increasing scarcity has caused another advance in most lines.

(On wharf, San Francisco.)

Bayos, per ctl.	$5.00 @5.25
Blackeyes	2.90 @3.00
Cranberry Beans	4.85 @5.10
Horse Beans	3.00 @3.25
Small Whites (south)	6.60 @7.00
Large Whites	6.30 @6.50
Pinks	5.10 @5.25
Limas (south)	4.70 @4.85
Red Kidney	6.50 @6.75
Mexican Reds	4.90 @5.25
Tepary Beans	4.00

SEEDS.

Melilotus Alba, lb	23 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	5 c
Soy Beans	6 c
Canada Peas	5¼ @ 6 c
Alfalfa, per lb.	22 @24 c
Sudan Grass	35 @40 c

HAY.

According to local dealers, the recent freaky weather, though causing damage at some isolated points, has had only negligible results, except that cool temperature and additional moisture has helped grain to fill out better, preventing the cutting of much grain for hay. Grain men are reluctant to make hay anyway, having no good facilities for handling or marketing it, and it is not believed that grain will be cut for hay to any very important extent in Tulare Lake region, where the crop is being rushed off ahead of rising water. Dealers believe the hay crop will be a little short of last year. Arrivals here are lighter, consisting mostly of old hay, with some new alfalfa and very little volunteer oat. Old hay prices are well maintained, new quotations not well established. Sales of new wheat and oat hay in the country reported at about $12, and volunteer at $9. Demand quiet, both locally and for shipment.

No. 1 Wheat	$13.00 @16.50
No. 2	12.00 @14.50
Tame Oats	12.00 @18.00
Wild Oats, new	8.00 @11.00
Barley, new	9.00 @12.00
Alfalfa, new crop	8.00 @12.00
Stock Hay	6.50 @ 8.50
Straw, per bale	.25 @ .40

FEEDSTUFFS.

(Wholesale prices, per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$22.50 @23.50
Alfalfa Meal, per ton.	20.00 @21.00
Alfalfa Molasses Meal, per ton	21.00 @22.00
Bran, per ton	26.00 @27.00
Oil Cake	Nominal
Cocoanut Cake or Meal	23.00 @25.00
Cracked Corn	40.50 @41.50
Middlings	34.00 @35.00
Rolled Barley	29.00 @30.00
Tankage	45.00
Rolled Oats	29.50 @31.00

VEGETABLES.

While the local trade is not especially active, there is still considerable shipping business in miscellaneous garden truck, helping to maintain prices on a fairly high level. String beans have dropped rather sharply, as liberal supplies are coming from many points. Lettuce is considerably lower, with good offerings from local gardens. Okra is offered in fair quantity, while summer squash holds steady. Green peas are quite scarce, and have been marked up sharply. Fancy green corn has been practically out of the market for several days, and higher, though ordinary stock is easing off. Tomatoes still scarce.

Cabbage, ctl.	$1.75 @2.00
String Beans, lb.	2½ @5 c
Summer Squash, box	.75 @90 c
Peppers, bell, lb.	.15 @20 c
Rhubarb, box, Bay	.40 @75 c
Asparagus, box	1.00 @2.25
Artichokes, doz.	.40 @50 c
Lettuce, small crate	.50 @65 c
Eggplant, lb.	.10 @15 c
Peas, lb.	4 @6 c
Tomatoes, lugs	2.00 @2.25
Green Corn, doz.	.35 @50 c
Okra, lb.	.20 @25 c

POTATOES AND ONIONS.

New potatoes are coming in more freely, but good stock is still rather scarce, and prices show weakness. Dealers in the River district report heavy frost damage, about 30 per cent of the crop. New onion crop promises well, nothing but reds coming in so far, prices firmly maintained.

New Potatoes, ctl.	$2.25 @2.75
Oregon Burbanks	1.55 @1.85
Onions, red	1.75 @1.85
Australian	2.50
Garlic, per lb.	5 @ 9 c

POULTRY.

Values show no important change. Considerable young stock is appearing from the East as well as local points, keeping the market rather overloaded, with no immediate prospect of better prices.

Broilers, 15 lbs. to doz, and less, lb.	22 @23c
do, over 15 lbs. to doz.	25 @28c
Fryers	25 @30c
Hens, extra, per lb.	20c
Small	17 @18c
Smooth Young Roosters, per lb.	25 @28c
Squabs, per doz.	2.00 @3.50
Geese, per pair	2.25 @3.00
Ducks, young	Nominal
Old	15 c
Belgian Hares	10 c

BUTTER.

General range of prices a little higher than last week, as the supply has been cleaning up closely of late. There is still a little shipping business with the East, but upward tendency of prices tends to keep movement to narrow limits.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	25	26	25	25	25	25½
Prime Firsts	24	25	24½	24½	24½	25
Firsts	23½	23½	23½	23½	24	24½

EGGS.

Prices have been creeping up a little this week, as offerings in local market are hardly as heavy as they have been. The large shipments sent to Alaska during the last few weeks have had a stiffening tendency, which is increased by recent shipments to Australia and New Zealand, also the fact that some of the principal producing districts are shipping to Los Angeles and outside markets. A lot of 20,000 pounds cold storage eggs was recently condemned in this city.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	23½	23½	23	23½	24	24
Sel. Pullets	21	21	20	20	22	21

CHEESE.

Y. A.'s have been coming in freely and price has declined sharply; Monterey Cheese is firmer.

Y. A's fancy	14½c
Fancy Calif. Flats, per lb.	13½c
Monterey Cheese	17 c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	25	25	25	25	25	25
Eggs	22	23	23½	22½	23	23½

DECIDUOUS FRUITS.

Notwithstanding the light crop of cherries, shipments to local market have been coming in fairly well, and a good deal has been sold at fairly easy prices, though fancy stock moves readily at satisfactory figures, being a little higher than last week. Apricots have dropped, with stock coming from several districts; and peaches also are lower, though still in very light supply. Figs are still bringing high prices, with only moderate offerings. Melons are lower, though cantaloupes are firm at the moment, watermelons finding little demand. Currants, loganberries and raspberries are lower, though supplies are not heavy for this season. Strawberries well maintained.

Currants, chest,	$4.00 @6.00
Loganberries, chest	5.00 @7.00
Gooseberries, lb.	.05 @ .10
Blackberries, crate	1.50 @1.75
Raspberries, crate	.65 @1.00
Strawberries, chest	4.00 @6.00
fancy, chest	7.00 @8.00
Apples	.75 @1.00
Cherries, Black, 10 lb. bx.	70 @95c
White, do	50 @85c
Per lb., black	5 @ 9c
White	3 @ 5c
Apricots, crate	.75 @1.25
Peaches, crate	1.25 @1.75
Figs, box, black	.75 @1.25
White	1.25 @1.50

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, May 23, 1916.

Regarding Eastern fruit crop conditions, beg to advise that the only information available at the present time is that pertaining to the Peach crop, which according to reports is comparatively light, amounting to only 50 per cent of last season, the following being from reports received covering the larger Eastern producing sections:

Georgia: During the budding season indications were for a heavy crop of Peaches in this State, but frost during April did material damage, and it is now the general opinion that the State will not ship over 3,500 to 4,000 cars, as compared with approximately 4,400 cars last season.

Connecticut: Peach crop in this State is very uneven and scattered, cold temperatures during early part of February killing the buds in some orchards, while in others scarcely any damage was done. Crop last year was unusually heavy, fully 1000 cars being shipped, also large quantities disposed of through local markets. General opinion that crop this season is 45 to 50 per cent short of last year.

New York: During early part of the season peach crop of western New York was materially damaged by cold and it is estimated that coming crop will be fully 1,000 cars short of last season, amounting to not over 3,500 carloads.

Maryland: Last season this section shipped about 1,700 cars, but present indications are that the crop this year will amount to 850 to 950 cars.

New Jersey: Last season all sections of this State had a bumper crop of Peaches. It is generally reported that the early varieties will only be about 50 per cent of last season's shipments, while the later varieties, particularly Elbertas, will not amount to over 15 to 20 per cent. Reports are that the output this year will not be over one-third of last year.

Delaware and West Virginia: It is generally reported that the shipments will be considerably lighter than last year.

We have just received authentic information from the Northwest which may be of interest. Speaking of Washington and Oregon, my informant states: "As far as cherries are concerned, I hardly think there will be over five cars shipped out of the Northwest, as the frost wiped us out a couple of weeks ago. In the Yakima Valley, where we usually shipped forty cars, we will be lucky to get out half a car. Kennewick district will probably have about three or four cars. Regarding other crops. The last estimate states that 65 per cent of the apple crop in the Yakima Valley has been destroyed; about 50 per cent of the peaches and about 60 per cent of the pears. In Southern Idaho the entire crop has been destroyed, which takes in prunes, apples and peaches. The Kennewick district fared a little better, the loss sustained being little over 15 per cent. The Wenatchee loss will be about 25 per cent on apples. Montana was completely wiped out. The grape crop in the Yakima Valley is practically gone, and other districts that raise grapes suffered severely from the frost of last year.

The following prices have ruled for the week:

New York: Tartarian cherries averaged $1.85; Royal Ann cherries, averaged $1.95; Bing cherries, averaged $2.53; Rockport cherries, averaged $1.35; Centennial cherries, averaged $1.62; Chapman cherries, averaged $1.36; Bigarreau cherries, averaged $1.65.

Chicago: Tartarian cherries, averaged $1.50; Bigarreau cherries, averaged $1.14; Rockport cherries, averaged $1.44; Royal Anne cherries, averaged $1.42; Spanish cherries, averaged $1.20; Bing cherries, averaged $2.15; Pringle cots, averaged $1.39; Newcastle apricots, averaged $1.46; Seedling apricots, averaged $3.10.

Special Livestock Market Report.

Cattle offerings are heavy on account of the dry weather. More lightweights are coming, which is desirable to supply that demand. No Nevada stock will be coming till September. California grass-fed cows and steers have been selling in Portland at $8 and $8.50, from which commission and freight must be figured.

Hogs have weakened, being the only livestock marked down this week. Many milk hogs are coming. These are not as desirable as grain-fed stock.

Sheep are scarce in San Francisco, but receipts are increasing at Portland, where grass-fed wethers and ewes sold May 22 at $8 and $6.50 respectively. Spring lambs are scarce.

Wool is the same as last week with all markets strong, but no particular advance. Some big flocks have recently been clipped. No raw wool may be shipped from India except to the United Kingdom, until October 1. The newly formed British Association of Wool Exporters to America have been in conference with the War Office trying to get certain embargos lifted.

Cantaloupes, crate .....1.50@2.00
Watermelon, lb. ..... .03@ .05

DRIED FRUITS.

Buyers seem to be taking a little more interest than last week, but market still lacks animation, as there is nothing of consequence left of old crop, and growers' views as to new fruit are above those of the packers at this time. While it may be impossible to realize the prices asked in some quarters, it is hard to see how anything can be lost by waiting until crop is made, as there seems to be a general shortage, and domestic demands certain to be larger than usual. A prominent broker, recently from the East, reports a condition of almost unprecedented prosperity in all parts of the country, which should be a favorable indication for products of this kind. Prices put out by packers in the East are said to be causing a little hesitation on the part of jobbers, but there is little doubt that the trade will take hold as soon as values seem to be well established. The New York Journal of Commerce says:

"Apricots are firmly held by packers, and the high cost of the raw fruit on the Coast makes it seem improbable that any reduction can be counted on. Prices are so high, however, that buyers are disinclined to take any interest as their own demands have not reached the point of urgency. Peaches are in practically the same position with higher prices in prospect, based upon the price packers are paying for the new raw fruit. The raisin situation remains deadlocked, with the association showing no disposition to recede from its position with reference to selling to speculators. Jobbers have booked their allotments of bleached Thompsons, and there is no further demand at present."

Apples, old crop .....5 @5¼c
Apricots, per lb., 1916 ...9 @11 c
Figs, white, 1916 .....6½@6¾c
Black, 1916 .....4¾@5 c
Calimyrna, 1916 .....9 @10 c
Prunes, 4-size basis, 1915.4½@5 c
1916 .....5 @5¼c
Peaches, 1916 .....5 @5½c
Pears .....5 @6½c
(Associated Raisin Co. Prices.)
Fancy Seeded, 16 oz. .....7 c
Choice Seeded, 16 oz. 6¾c
London Layers, 3-crown,
20-lb. box, 1916 .....$1.30
Imperial Clusters, 6-crown,
20-lb. box, 1916 ..... 2.75
Bulk, layers, 50-lb. box, 1916. 2.75

CITRUS FRUITS.

The eastern auction markets are in fine shape and are paying increased prices for oranges and in some cases for lemons. Navels are nearly all shipped as are seedlings, sweets and St. Michaels. At New York on Monday, May 22d, the citrus auction averaged from $1.75 to $3.75 per box for navels; from $2.70 to $3.85 for valencias; seedlings from $2.10 to $2.65; sweets $1.90 to $2.85; St. Michaels $2.25 to $3.25; lemons $1.60 to $3.20. Other auction points were fully as high as the above. Shipments of oranges are averaging about 150 cars daily from southern California.

New Valencias are beginning to appear in the San Francisco market, and are quite firm, with reports that price in primary markets is to be advanced shortly. Offerings of navels rather light, prices have been advanced a little, though demand here is not especially active.

Oranges, Navels .....$1.75@3.00
Valencias ..... 2.75@3.00
Grapefruit ..... 1.50@2.50
Lemons, box .....1.75@3.50
Lemonettes, box ..... 1.25@1.75

HONEY.

A little more new honey coming in, but the new crop is arriving slowly and appears to be very much below early expectations. Prices on the new honey considerably higher than those that have lately prevailed.

Water White, comb .....14@16 c
Amber .....10@12 c
Water White, extracted .. 8@ 9 c
Light Amber, new ..... 4@ 6 c
Dark .....3½@4½c

HORSES.

Nothing of special interest has arrived in the San Francisco market this week, and there appears to be no great interest among local buyers, though heavy stock of special merit finds a market at fair prices. Principal demand, is for stock suitable for military use.

(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs. and up $ 250
Drafters, 1550 to 1650 .. 150@200
Chunks, 1350 to 1500 lbs. 150@175
Wagon horses, 1050 to
1350 lbs. ..... 110@150
Green Mountain range
horses, 950 to 1200 lbs. 20@ 75
Farm Workers ..... 50@100

LIVE STOCK.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)

Steers, No. 1 .....7¼@7½c
No. 2 .....6¾@7 c
Cows and Heifers, No. 1 6 @6¼c
No. 2 .....5½@5¾c
Bulls and stags .....4 @5 c
Calves, light .....7½@8 c
Medium .....7 @7½c
Heavy .....6 @6½c
Hogs, grain-fed:
100 to 150 lbs. 7¾c
150 to 250 lbs .... 8½@8¾c
250 to 325 lbs. ..... 8 c
Prime Wethers .....7 @7¼c
Spring Lambs, f. o. b.
country points .....$5.00@5.25

WOOL.

(Prices paid in the country.)

Red Bluff, year's .....25@27 c
Sacramento Valley, y's...19@35 c
Mendocino, year's .....30@31 c
Mendocino, 7 months ...25@26 c
Southern, year's .....18@21 c
Southern, 7 months .....15@18 c
Imperial Valley, year's ..17@19 c
Imperial Valley, 7 mos. ..14@15 c
Nevada .....21@23 c

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	28.60	28.00		28.20
" 9	25.33	26.66	26.00	28.10
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	28.66	36.33	28.00	36.66
Feb. 6	26.68	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25
" 20	29.00	32.00	27.16	32.00
" 27	29.10	30.90	27.00	35.25
March 6	27.00	24.08	25.25	24.16
" 13	24.66	29.91	24.00	28.83
" 20	23.00	28.33	22.50	27.16
" 27	22.91	28.50	23.00	28.08
Apr. 3	23.00	28.50	22.23	28.83
" 10	23.08	29.31	22.00	28.00
" 17	23.00	27.33	22.00	27.50
" 24	23.00	25.25	22.00	25.00
May 1	23.08	24.33	22.00	25.33
" 8	23.00	24.10	23.08	25.00
" 15	23.58	24.58	23.00	23.00
" 22	23.58		23.00	
" 29	23.50		23.00	

A large juice factory is proposed by the Sebastopol Berry Growers. It is hoped to be ready for overripe Loganberries this season.

Publisher's Department

Mrs. M. E. Rodenkirsh of Orland, on remitting for subscription, says: "I want to add that I never spent a dollar for a better purpose in my life. After reading up on tree pests in your January and February numbers, I got busy in my almond orchard, and it is astonishing to see the results now. Last year something was radically wrong and no one seemed to be able to enlighten me and I was heart-sick about it, but was here and had to stick. About then your agent came along and I subscribed for your paper, read it from cover to cover and found plenty of information that fitted my case. Then I got busy and the result is great."

A letter from a subscriber living in San Luis Opispo Co. says he has recently written to several advertisers of bulls and hogs and in many instances has not received a reply. The writer says "While these people were probably sold out, it is no reason why queries should not be answered. I have letters from two 'live ones' who were sold out, but had the business courtesy to reply. These men will always keep sold out, because they are after business, and take care of what they get a chance at." Advertisers would do well to follow this advice.

One hundred and ninety-five new subscribers were added to our list during the past week. These new readers are scattered over the State.

Our advertising columns are more than filled again this week. Read them carefully and we are sure that you will be well repaid for the time used.

If you haven't sent for a copy of our new book "Second Thousand Answered Questions in California Agriculture" you should do so. The book is a necessity on your farm. Send for our special offer in connection with the book.

TIRES

PRICES

Goods shipped to all points C. O. D. Money refunded on goods returned intact within one week.

Size	Special Prices on Plain Tread	Gray Tubes	Red Tubes
28x3	$ 6.55	$1.75	$1.95
30x3	6.95	1.85	2.10
30x3½	8.95	2.10	2.35
31x3½	9.45	2.15	2.40
32x3½	9.95	2.25	2.45
34x3½	10.95	2.30	2.55
36x3½	12.05	2.40	2.75
30x4	13.20	2.80	3.10
31x4	13.85	2.85	3.20
32x4	14.05	2.95	3.30
33x4	14.70	3.10	3.40
34x4	14.95	3.15	3.50
35x4	15.65	3.20	3.60
36x4	15.85	3.30	3.70
34x4½	20.25	3.85	4.30
35x4½	20.85	3.95	4.35
36x4½	21.25	4.10	4.50
37x4½	21.90	4.15	4.60
35x5	23.65	4.70	5.20
36x5	23.95	4.90	5.35
37x5	24.90	4.95	5.45

Non Skid Prices in Proportion.

SPECIALS

WHILE THEY LAST.

30x3½	SS	$ 7.90
34x3½	Cl	8.90
31x4	SS	10.00
34x4	Cl	12.75
36x4	Cl or SS	13.50
35x4½	SS	14.00
36x4½	Cl or SS	14.90
37x4½	Cl	14.00
36x5	Cl or SS	15.00
37x5	Cl or SS	15.00

Prices subject to change without notice.

Automobile Tire Company

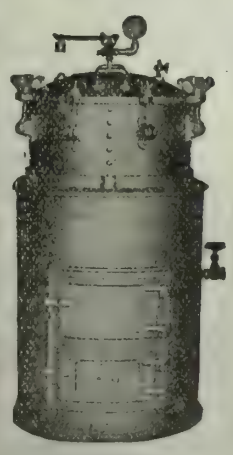
Sixth and Olive Streets. Los Angeles.
F3737. H. A. Demarest, Bdwy. 4049. 533 Van Ness Ave., San Francisco. 1776 Broadway, Oakland. 2nd and B Sts., San Diego. Hotel Fresno Bldg., Fresno.
The Oldest Automobile Tire Jobbing Concern in the United States and the largest in the world.

Orchard and Hotel

CANNING OUTFIT NO .12

OUTFIT NO. 2 INCLUDES:

1 18 x 18-inch Retort with Cover, Packing, etc.
1 Petcock Choice of either Steam Gauge or Thermometer.
1 Galvanized Crate.
1 Triangle (to support crate).
1 Set No. 2 Crane Irons.
1 No. 7 Blast Furnace.
1 Tipping Copper.
2 Capping Steels (Reg. Sizes).
1 Thumb Nut Wrench.
2 Pair Can Tongs.
10 Feet Wire Solder.
1 Flux Brush .
1 4-ounce Bottle Liquid Flux.



1 Firebox.
1 Shaker Handle.
6 Canners' Knives.
1 Book of "National" Recipes.

Price, $85.00

Berger & Carter

Canning Machinery

SAN FRANCISCO, CAL.

Classified Advertisements

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

FOR SALE—One 25 H. P., 220 volt, 3 phase, 900 R. P. M. Fairbanks-Morse Motor. One Byron Jackson 7-in. Vertical Pump. 8-in. suction pipes for two wells. 10-in. discharge pipe, 30 feet, frame shafting complete, in first-class condition and a bargain. J. B. Anderson, Wasco, Cal.

REBUILT GAS ENGINES from 3 to 50 h. p. Thoroughly overhauled and guaranteed. We only handle high grade engines. Write us your requirements. Motors, Gas Engines bought, sold and exchanged. Mechanical Installation Company, 181-89 Second St., San Francisco.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

GAS ENGINES—I can furnish rebuilt Fairbanks, Morse, Otto, Peerless, Samson, Union and other good makes in all sizes. All investigators buy and all buyers are delighted. Pay when satisfied. J. J. Pottinger, 189 2nd St., San Francisco.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

NEW, SIMPLE PROCESS for crystallizing figs and other fruits. Instructions, terms, samples, on application. Correspondence with fig growers solicited. Mrs. H. B. Monteith, Santa Rosa, Cal.

FIELD GAS ENGINES—One 20 h.p., one 15 h.p. with magnetos. Cheap. Motor installation cause of selling. The Phalanx Company, 516 Chamber of Commerce, Los Angeles, California.

WE HAVE ONE SECOND HAND Southwick Horse Power Hay Press, in good condition. If interested, write for price. Dixon & Griswold, 146 North Los Angeles St., Los Angeles, Cal.

"SMITHS' PAYS THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

OFFICE STATIONERY—Catalogues, general commercial printing. Good work, low prices, prompt service. Mail orders. G. C. Gallagher, 436 Sacramento St., S. F.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds, $3.00 delivered. Order with remittance. WM. J. SCHROTH CO., 112-B Market St., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

For SALE—8 h. p. Samson Engine, 3-inch Krogh Pump in good condition. B. R. Putnam, Exeter, Cal.

WANTED.

RANCH FOREMAN, married, absolutely reliable and with highest references from present and past employers, would like to take charge of well-equipped place. Familiar with the breeding of good stock, production of crops, and the management of orchards. A position is desired where results beyond the ordinary can be accomplished. Address Box 218, Pacific Rural Press.

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. K. Humphrey, Principal, Stockton, Cal., Box 704.

YOUNG MAN, well educated, German nationality, speaks English, Danish and Swedish, wishes position on farm to learn practical farm work. Familiar treatment preferred rather than high wages. Box 217, Pacific Rural Press.

TREES AND PLANTS.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. F. Rice, R. 1, Box 78, Reedley, Cal.

AVOCADO TREES for sale, fine field-grown budded Ganter and Harman variety. $1.00, $1.50 and $2.00. Magnolia Nursery Whittier, Cal.

A-1 NAVEL, VALENCIA and LEMON trees, $15 per hundred, packed in moss. Less than 100 lots, 18c each. J. C. Johnson, Azusa, Cal.

SWEET POTATO PLANTS—California Yams; May delivery. $2 per thousand; 35c per hundred. J. Braswell, R. 2, Lindsay, Cal.

FOR SALE—Spineless Cactus Plants. Prices right. B. C. Engbert, Byron, Cal.

WELL BORING — Water guaranteed. Low prices. David Bahrs, Marysville.

LAND FOR SALE

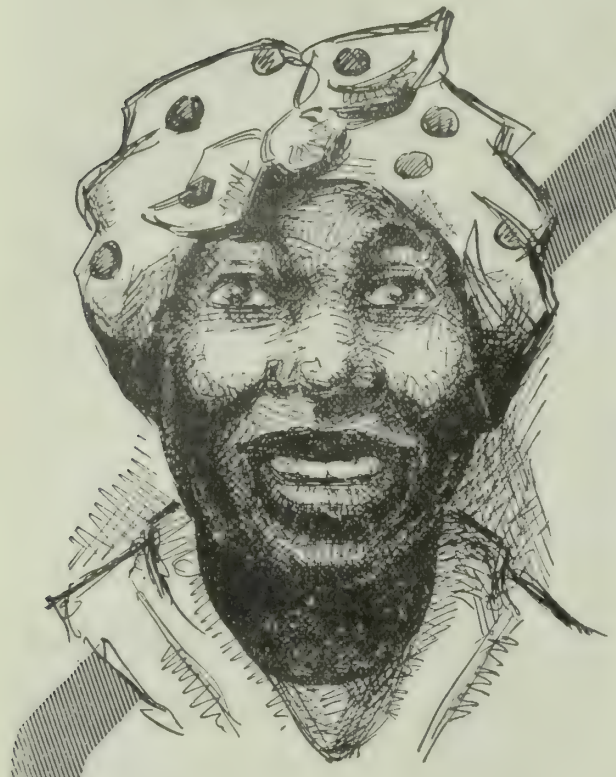
COLVILLE INDIAN RESERVATION, WASHINGTON, OPEN FOR SETTLEMENT—Drrawing July 27th. About 500,000 acres. Fruit, Farm and Dairy Land. Complete Sectional Map and Description. Postpaid, $1.00. Soldiers, sailors (or their widows) of the Civil or Spanish Wars may register by Agent. Write us for blank forms, which we will furnish free. SMITH & McCREA, Room 108, Eagle Bldg., Spokane, Wash.

FREE HOMES—SAFE INVESTMENTS without residence. SCHOOL, STATE, INDIAN, GOVERNMENT Lands. YOU have 9 rights, NOW worth $1,000 each. Booklet 16 FREE. WM. JOSEPH CLARK, Sacramento.

FOR SALE, near Vacaville, eight acres creek land in table grapes, walnuts and variety of fruits. Fine house; modern conveniences; plenty water; tank house, barn; and packing shed. J. Malchi, Vacaville, Cal.

WANTED—Thousand acre sheep ranch to lease for three years. Hill land west side Yolo county. House and barn. No brush. B. Muniain, Box 57, Capay, Cal.

WANTED to hear from owner of good farm for sale. Send description and cash price. R. G. List, Minneapolis, Minn.



Tempting Dixie Baking

Sperry Virginia Corn Bread Recipe

3 cups of Sperry White Corn-Meal
1 cup Sperry Flour
1 tablespoonful of salt
2 heaping teaspoonfuls baking powder
1 tablespoon of lard
3 cups milk
3 eggs

Sift together the flour, corn-meal, sugar, salt and baking powder; rub in the lard cold, add the eggs well beaten and then the milk. Mix into a moderately stiff batter; pour it into well greased, shallow baking pans (pie tins are suitable). Bake from 30 to 40 minutes. (16)

Sperry Recipe for Maryland Beaten Biscuits

1 teaspoon salt
1 tablespoon butter
1 quart Sperry Flour
1 cup milk

Rub butter and salt into flour, add milk and a little water if necessary to make soft dough. Place on board and beat with rolling pin for ½ hour or until it becomes brittle. Roll ½ inch thick and cut in small circles. Prick with fork and bake in hot oven about 20 minutes. (14)

Sperry Recipe for Dixie Doughnuts.

3 eggs, beaten light
3 even tablespoons melted butter
4 cups Sperry Flour
1 cup sugar
1 cup sour milk
½ teaspoon soda
1 saltspoon each of cinnamon and salt

Enough more flour to make just soft enough to roll out. Mix the dough rather soft at first. Have the board well floured, and the fat heating. Roll only a large spoonful at first. Cut into rings with an open cutter. Mix the trimmings with another spoonful. Work it lightly till well floured and roll again. Roll and cut all out before frying. The fat should be hot enough for the dough to rise to the top instantly. (17)

The "Mammy" of the sunny south has long been famous for "good things to eat." Use these Sperry Recipes and you will reproduce those southern baking triumphs that delighted hundreds of thousands at the Panama-Pacific Exposition, where

SPERRY FLOUR

was awarded the Grand Prize, highest possible honor.

You are always certain of uniform baking results when you use **SPERRY FLOUR**—whether it be in making bread, cake, pie, biscuits, muffins, doughnuts or the 100 and 1 other things that flour is used for.

Every ounce of **SPERRY FLOUR** is subjected to 7 distinct scientific and practical tests to make sure of absolute uniformity in gluten quality and content.

Order Sperry Flour of Your Grocer

Read about flour making—bread making and the cause of poor bread. This is all interestingly explained in **The Sperry Book which will be sent you free—Write for it today.** If you will enclose a 2 cent stamp we will include the much prized **Sperry Cook Book.**

Address

Sperry Flour Company
Department B.—San Francisco, Cal.

There's a Sperry Mill within 150 miles of every home in California





Vol. XCI—No. 23 Forty-sixth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO JUNE 3, 1916. LOS ANGELES

California State Library 7-1-

Lime Makes Fertilizers Available.

Great stores of natural fertilizers are locked up in our orchard soils, unavailable for use of trees. Soils may be acid, impervious to water and tree roots; they lack humus, air and moisture to support bacterial activity to make fertilizers available. Lime and cover crops solve the problem.

[Written for Pacific Rural Press.]

TO SECURE 100 per cent efficiency out of purchased fertilizers by maintaining the proper physical condition and chemical reaction, in the soil, is the problem in Southern California now," says R. S. Thompson, manager of the Highland Exchange Association. Mr. Thompson has been a close student of a citrus orchard near Highland since 1884, besides traveling thousands of miles by automobile through all the citrus growing regions of California. The information on which this article is based comes direct from his observation, reading, and experience growing fruit and working in a thoroughly equipped laboratory on his ranch. A soil tube is Mr. Thompson's primary tool, for he studies the soil as far down as the roots go. And be it said that examination by the writer, of many orchards, fruit stands, and packing houses, has failed to show fruit more uniformly smooth, thin-skinned, even-sized, tender or deliciously flavored, though the trees seem to indicate that he has struck the keynote of success only in time for the results to show in leaf growth during the past season.

Fertilizers Must Be Made Available.—"The best fertilizer on earth cannot exert its best effect where the soils have been injured by injudicious treatment and are deficient in organic matter and calcium carbonate," says he.

That no plant can use fertilizer elements until they have been made soluble and then dissolved in much water, is apparent. As truly, too, where water does not penetrate, natural fertility remains locked up.

If potash is necessary, but hard or expensive to get, it behooves us to unlock the immense stores of this plant food, which are naturally abundant in the granite soils of most of the California citrus regions.

Recent washouts as well as soil tube borings have proved that if citrus roots do not feed over three feet deep, it is because the soil or moisture conditions prevent their going deeper. The natural potash must first, then, be made accessible by wetting the dirt so roots can get down to it.

"A rain gage, located near the mouth of City Creek Canyon, Highland, in January, 1916, registered 17.35 inches of rainfall. Theoretically, this would wet the soil at least eight feet deep. On Feb. 2, 1916, there was absolutely dry soil at a depth of 3½ feet in a citrus orchard 80 rods from the rain gauge, where the ground had been cultivated for 26 years. The orchard across the street, that had been limed with ground limestone was tested on the same day. Instead of the soil becoming dryer at 3½ feet, it showed increased moisture. Before the latter soil was first limed in 1912, it was possible to run water on it for five days at a time without wetting it beyond 18 or 20 inches. Water running on this soil now, instead of flowing into the waste ditch, penetrates the soil where it is needed. Part of this result has been due to cover crops summer and winter."



Heavy cover crops grow where bacterial activity is favored by open non-acid soils. The cover crops loosen subsoils deeply, and admit air and water needed to enable tree roots to go deeper where more natural fertility lies. Nitrogen gathered from air by legume cover crops is the cheapest and one of the most available forms. Leachable fertility is stored in the plants until rains are over; and the cover crops prevent erosion of fertile top soil. Mr. Thompson grows summer cover crops also to prevent the drying and baking which kill bacteria and prevent growth of tree roots in top soil.
Photo by courtesy Germain Seed Co.

Having gotten water to the deeper fertility elements, and enabled the roots to go down to them, the problem remains of making those elements soluble.

Soil potash usually exists in insoluble compounds, but in general, when calcium carbonate is brought into contact with it, the calcium replaces the potash, leaving the latter soluble and available for plant food.

Even the insoluble soil phosphates of aluminum and iron are recombined by calcium carbonate, resulting in calcium phosphate. In this form the plants can more readily obtain the phosphoric acid.

(Continued on page 660.)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market Street, SAN FRANCISCO

ENTERED AT S. F. POSTOFFICE AS SECOND-CLASS MAIL MATTER

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PACIFIC RURAL PRESS - SAN FRANCISCO

ONE DOLLAR PER YEAR IN ADVANCE

Advertising rates made known on application.
Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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NEW YORK OFFICE, - 381 Fourth Ave.
CHICAGO OFFICE - Advertising Bldg.

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FRANK HONEYWELL - Publisher and Manager
W. H. SCHRADER - Advertising Manager
D. L. SCHRADER - Subscription Manager
R. E. HODGES - - Assistant Editor
J. C. LOOMIS - - Assistant Editor

EDITORIALS

THE most significant event of last week, in a large way, was the success of the fair at Chico, far up on the east side of the Sacramento valley. It was not in the fair season, which is, by common acceptation, after harvest in the autumn. It was not with State aid nor by State authorization, as local fairs often are. It was an outbreak of strong local feeling and desire for progress under the leadership of a voluntary association which has long centered effort and aspiration in that section of the State—the Sacramento Valley Development Association. The exhibits were unique, excellent, and of wide industrial significance. The spirit of the event was most bouyant and progressive. The attendance was notable, local estimates stating that not less than 20,000 people participated during the week. All these tokens of life and action indicate future achievement. If they reach their fullest power and influence, they will be concentrated in a systematic effort toward desirable ends, such as was outlined in a public appeal in this way:

The present situation in the Sacramento valley calls for a very comprehensive and vigorous effort to bring about the settlement and profitable development by an intensive agriculture of waiting lands. Millions of dollars are invested in land, irrigation and reclamation enterprises, a profitable return upon which can only be secured through the development of a population sufficient to intensively cultivate the land.

Every interest in the Sacramento valley should be concerned in the achievement of this result. That most interests are concerned and desire this work carried forward is evidenced by the large sums expended annually from public funds with almost unanimous approval and by subscriptions from private funds aggregating large amounts to the various agencies working to this end. It is entirely possible to work out adequate plans for this undertaking and to secure the co-operation of most Sacramento valley agencies in carrying them into effect.

It is surely possible, and it is imperatively necessary for the good of the State and the prosperity of the people.

INDIVIDUALISM AND CO-OPERATION.

AT FIRST thought one might hold that there is a distinguishing difference between this event at Chico and the event at Willows a fortnight earlier, upon which we indulged in comments in our issue of May 20. This first thought might recall the fact that the earlier, and at this time greater, development on the east side of the Sacramento river was due to the intense individualism which prevailed during the mining era in the adjacent foothills. It was then that individual initiative, action and self-protection seemed to most gloriously or most shamefully prevail—according to the heart and nerve of the single man. And yet it should not be forgotten that even in such a dominion of individualism, the strength was, after all, not in the man alone, but in his co-operative action with his fellow-men, who were actuated by the same aspiration for fairness and the same thirst to do noble things. It has been the testimony of many contemporary observers that never in the world, perhaps, was the evil-doer under such a weight of swift retributive justice, and never was the righteous and noble man so sure of recognition and support, as in the mining camps of '49 and the early '50's. Of course, we, living in other days and under other conditions, cannot approve their methods for ourselves, but we have never heard their motives impugned. They were self-conscious and self-respecting communities, and their standing is unimpeachably maintained by the fact that, when an early California Legislature found that neither the mining laws which the argonauts brought from their own countries, nor the Spanish mining laws, which in a way were indigenous here, were just to conditions then prevailing, this Legislature declared that each mining community should make and apply its own mining rules and decisions. Thus, at the very beginning in California, where it was apparently every man for himself as nowhere else in the world, the rights of individualism were only to be obtained or conserved by co-operation.

THE FIRST VALLEY CO-OPERATION.

NOR was this product of the earliest assemblies of miners to vanish with them. More than fifty years ago the injury of valley lands and navigable streams by flood movement of debris from hydraulic mines began. More than forty years ago the valley farmers, widely injured and in some cases actually ruined thereby, began their fight against this kind of mining. The more conflicting interests opposed them, the harder they fought, and they finally won their contention in State and National Legislatures, and even now the State and the United States will spend during the next few years ten millions of dollars toward repairing the injury, which they at first winked at or actually permitted, while land owners will contribute much more to restore our water courses to their old harmlessness and service. And this great work, of which we see only the beginning, and which, when complete, will create a new empire, through reclamation and improved navigation, traces its beginning to the resolute action of east-side farmers, who refused to be either bluffed or bought while contending for rights which only they, at that time, clearly discerned. And they were men who made their stakes on the lands by strong individual initiative and effort, but they avenged their losses and made gains for their successors by co-operation in one of the noblest adventures in defense of the man on the land which this State has ever seen. If you are an old-timer and desire to refresh your memory, or if you are a new-comer and wish to know the occasion for this uprising and endurance of the co-operative spirit, write to Congressman C. F. Curry at Washington for his report on flood control of the Sacramento river, just printed. If the reader could see those stalwart farmers contending against all odds for the rights of their lands and their rivers, as we remember seeing them in the latter '70's, he could have no doubt that strong individualism is the bulwark of effective co-operation.

AFTER THE WAR.

TALK is getting free again about the hosts of Europeans which will be pressing for entrance to California as soon as peace is declared. We cannot blame them, if that should be the case, for Europe will be a sad place for a generation at best, and survivors will not only be impelled to fly from that, but they will be very tired of imperialism generally and will be glad to dwell in the freedom of the United States, plus the salubrity of California. We doubt, however, if the European governments will allow such emigration of able-bodied people as is talked about. They have become very handy with embargos during the last two years, and we shall be rather quick to exclude the pitiable wrecks of humanity which the governments which made them would be willing to get out of their sight. But suppose there should be many able to meet our entrance conditions, and which steamship companies are reported to be preparing to carry through the canal to this coast, can we use them to our advantage or establish them on land to their advantage? Undoubtedly we can do both. There is a scarcity of the right kinds of farm labor on this coast and wages are too high for the kinds of labor we have in largest supply. Therefore, we could use a considerable number of capable and thrifty laborers to their advantage and our own, and as we are safeguarded by national immigration laws, and have good State machinery to distribute new-comers according to their suitability for different purposes, and to prevent them from becoming a burden to themselves and to us, we shall not share the apprehensions which are freely talked about until some reason for them more clearly appears.

BETTER PEOPLING OF THE EARTH.

AND while we do not see cause to fear imminent debasement of American citizenship by undue entrance of foreigners, we are quite sure that the ultimate influence of the present war will be to uplift the masses of Europeans to better fitness to become Americans, if they wish at some future time to do so. We hope those who have been so long industrially discriminated against and socially depressed may advance, through this great cataclysm, to some measure of that freedom of opportunities in their own countries which they have had heretofore to seek in this country. So far as we have read, all sociologists and economists foresee in the results of this war great changes in the European social order, which will put both the high and low in juster relations to each other though measurements of both, not by the old scale of vested rights or wrongs, but by a new scale of manhood and efficiency of citizenship. The more there comes of that the less we need fear for the safety of our own traditions and standards. The better the old world becomes in its recognition of the rights and value of a man, the freer and safer will be the relations of the new world to the old in interchange of citizenship. And this will be attended by better relation of man to land so that there shall be less of landlord and more of land-man, because the ownership of land will be more widely distributed. In a recent interview, reported by Edward Marshall, Sir Rider Haggard said this:

The war's effect will be far-reaching, beyond even our most extravagant dreams. One of its results, which already is beginning to show, will be a melting of conventions. This, I believe, will be a great thing for the world at large. England is learning fast in these days of war some things which all must learn. For instance, she is learning that it is not so much wealth that matters, but men, women, families and homes that are happy. I am driving at the almighty truth that if any nations and empires are to endure, they must root themselves in the land. No tree can flourish for long that tries to suck its strength from bricks and mortar; it must dwindle presently and perish.

And while we believe that what Mr. Haggard says is true, it is not the whole truth. Moving people from city pavements to rural highways will not alone make coming generations greater in manhood. This alone will not serve a high humane purpose, though it may better serve an imperial purpose, because it may make for a greater multitude of men physically fit. There must be corresponding advance in rights and privileges of citizenship, in more equitable distribution of the rewards for effort and investment for world-feeding, which will make possible a higher standard of rural living and greater joy and satisfaction in it. And this will come, not as a gift from above, as rural betterments have hitherto chiefly come in the old countries, but because their rural people will advance and thus secure fairer consideration—just as American rural people are now moving toward it by co-operative effort for competence in their own commercial affairs and for laws which provide equality in financial opportunity.

HOW IT WILL HELP CALIFORNIA.

FORTUNATELY California has been leading for a decade or more in organization which points the way to the attainment of things so desirable for the world's good, and so general is the disposition toward such things that hardly any of our lines of food production fail to manifest it. Few have fully arrived, but all are on the way.

By The Editor

Queries and Replies

ENQUIRERS MUST GIVE FULL NAME AND ADDRESS.

Commercial mastery of its own affairs is the first step—everything good will follow. So long as a farmer does not get his full share of the wealth he creates, he is a serf—no matter whether he pulls his fore-lock or pulls an oath at the man who robs him of his due, he is still a serf. It is a condition which neither cringing nor cursing can cure. Nor does it yield to denunciation nor demagoguery. Farmers can alone escape some measure of serfdom by calm, intelligent and resolute self-help by co-operation.

In order to grasp this matter a little more concretely than by our preaching, read the following version of an announcement made by James Madison, manager of the raisin growers' combination:

The California Wine Association, which controls acreage on which can be produced about 4000 tons of raisins, has signed a grower's contract with the California Associated Raisin Company, and will purchase between 500,000 and 600,000 gallons of brandy held by the Associated Raisin Company. The deal, which will involve between $300,000 and $400,000, means that the wine association has reognized the growers' corporation as a valuable marketing medium and it is now likely that the raisin association will not manufacture any brandy as it did last year. Poor wine grapes were purchased then to keep them from being dumped on to the raisin market.

This means that the association of capitalists did not have foresight enough last year to know that brandy prices would advance, and therefore would not buy grapes at a living price. The growers' association had money enough to buy them for its own protection, and, as things turned, will get its money back (and perhaps more) directly, as well as indirectly, protecting the price of growers' raisin products against competition with poor dried grapes, and this protection may have been worth as much more. Now this growers' association has not only saved itself from competition with an inferior product, but has signed up its former competitor in the raisin market as one of its own supply sources. If one could turn back and read last year's angry impeachment of the growers' association by the competitor now on the penitential stool, he could better appreciate how complete a conversion has been wrought.

And the moral of this story is that when producers get together with their wisdom and their money, and use both to serve and protect their rights, they not only help California forward, but they show how to better people the earth!

Cutting Back Bad Starters.

To the Editor: Your answer about cutting back trees which do not leaf out well, in the issue of May 20, is particularly interesting to me. I have about 600 Baldwin apple trees which did not bloom at all this year and some of the leaves are doubled up and have a grayish color, while there are small bright green leaves all over the trees. Most of my other apple trees bloomed heavily, but owing probably to the frosts or north wind more than half dropped off. I am going to follow your instructions to the other man and would like to know how soon I can begin to reduce the tops.—Grower, Mendocino county.

Cut back as soon as you are reasonably sure that the leaves are not backed by sap flow enough to expand normally. The purpose is to reduce the evaporating surfaces by shortening the branches and to direct what sap there is to the growth of a few shoots of new wood, instead of dozens of them which a tree in full vigor could send out and support. If you do not do this the tree will try to help itself by dying back and the result may be a tree mostly dead—with a few scattered shoots, or suckers from low points, and a lot of dead bark, even on the trunk perhaps. It is hard to make a good tree out of such bad stuff. If you cut back before the waste by evaporation you may get fairly good shoots from most of the branches and have all good bark below them. If your tree should regain push enough to make many such shoots, choose the best to reform the head at next winter's pruning.

We know it needs strong conviction to cut back branches which still have green color under the bark, but you must remember that it is not color which makes growth—it is push. You can have bark color, holding for quite a long time, and yet only miniature or shriveling little leaves, just as you may have moisture-color to the soil and yet not enough free water to make a plant thrifty. When a tree cannot make good leaves in the proper season and no disease reveals itself, you may be sure it needs help to make as much new wood as it can, and that is given by cutting back as soon as you are sure of the facts.

Millipeds in the Garden.

To the Editor: How can I destroy the "Beebee shots" (a kind of a worm which, when touched, form a black ball), in my garden?—E. B., Cayucos.

We never heard them called that before, but from what you say of their behavior, they are millipeds of the genus Julus. It is a question whether they are often troublesome enough to require treatment, which is rather difficult. Some students of them hold strongly that they only affect decaying vegetation, such as potatoes partly decayed, lower leaves of lettuce, etc., but Mr. Essig has found them in a solid lettuce head, so their record is not clear. They may be poisoned by powdering sliced potatoes, lettuce leaves, etc., in Paris green and placing them on the ground, under pieces of board—or they may be trapped under pieces of board or flat stones placed for that purpose and then killed, by hand or foot, as you may prefer.

"Cutting Off" and "Cutting Back."

To the Editor: Would you advise the "cutting off" the top of a ten-year bearing Burbank plum tree, in good condition, to limit fruitage? If so, is it wise to so prune at this season? The tree is a very heavy bearer, but the fruit is but medium size. Would you advise "cutting off tops"—limbs as well as branches, in general. Is it not injurious to do so, and is it not wrong to prune heavily at any time? Does not nature indicate the proper pruning time—that is when trees are dormant? My judgment is at variance with that of another as to treatment of our trees, and I anxiously await your solution of my difficulty.—R. E. Los Angeles.

There is some doubt as to your meaning. "Cutting off the top" of a tree usually means amputating leaves just above the central forking to give the tree a "new head." It is often desirable with weary peach trees to get a new outfit of branches and may be sometimes helpful to other trees which are strong in the root and weak in the top. Probably, however, you do not mean such beheading, but refer to "cutting back"—that is shortening branches which have run out too far to hold up weight of fruit which has such strong leverage on the lower parts of the supports. This is desirable with all plums and other fruits which have rather brittle wood, but is not widely practiced with some trees with more pliable and tougher wood, like the French prune and most cherries. Cutting back branches also reduces amount of bearing wood and numbers of fruits set, and has an influence toward fewer and larger fruits. If it is rationally done in choosing points of cutting and amounts of wood removed, it can be done at any season without apparent resentment on the part of the tree. It can be done now in the case of your plum tree to the gaining in size in the fruit and averting of danger of breaking by wind or gravity. Nature does not teach us much about pruning. She blows trees to pieces or breaks them to pieces whenever she likes, and if she does not choose to do that she is delighted with a tree full of pits. The fruit grower's point of view is not Nature's point of view, and he had better trust to his reason than to imitate the old lady's methods with her trees.

When it comes to really "cutting off" the top of a tree to get a new head it should usually be done near the end of the dormant season when the sap is beginning to rise, for Nature heals wounds best at that season, but, as stated, she does not in her own practices have sense enough to use her own resources.

Badly Knotted Vines.

To the Editor: The trunks of some of my Rose of Peru grapevines get black warty swellings that result in the whole trunk swelling and the branches dying. The nurseryman advises me to burn the vines. Is there any remedy?—A. L. H., Bishop.

The advise is good in the case of vines which have gone so far with black-knot. When a knot gets so far as to seriously injure the growth of the vine, there is little use treating it. Vines can often be saved if the knots are removed soon enough and the wound treated with Bordeaux paste. The starting of knots should be continually looked for.

Fears Too Much Nitrogen.

To the Editor: I have a newly planted vineyard of three acres, in desert soil containing practically no humus. I can see that I shall have to furnish humus to prevent the soil from blowing, as it is very light, although not a sand. I have been told that a leguminous cover crop would furnish too much nitrogen, causing the vines to go largely to foliage. Would one such cover crop be advisable, or would you recommend a non-leguminous crop, such as barley?—W. F. A., Thermal.

The best thing a vine just planted can do is to make plenty of leaves. When it gets to bearing age it is not well to feed it too high, but we doubt if the difference between a legume and a non-legume in making humus and nitrogen will ever bother the vine. You might get more nitrogen from barley than from a legume if the amount of growth was enough larger. We would choose the plant we could get the best cover with and let the vine answer the rest of the question.

Foothill Hog Menu.

To the Editor: I am in want of a little information and as you seem to be the fountain, I am applying at headquarters. Is ensilage good to feed hogs, and what kind is the best? We are in the foothills so do not raise alfalfa. We have a fair stand of dent corn and are trying some Soudan grass, but cannot say yet how it will turn out. We can raise all kinds of grain and have a good crop of beets. Sunflowers grow well. Can we make any use of them for hog feed?—Subscriber, Woody.

You need a good course of reading on feeding hogs. If you will take down your file of the Pacific Rural Press and study what has been written during the last year by Profs. Woll and Thompson, Mr. Goodman and many others, you will find your questions fully answered and much more. If this is not convenient, read Prof. Woll's book on "Productive Feeding of Farm Animals" and Mr. Guilford's "California Hog Book." Our "Second Thousand Answered Questions in California Agriculture" also covers your points.

A hog menu made up of the things you mention is one-sided. It has too much coarse stuff and all of them contain too little protein. Corn silage is not best for hogs, though it may be for ruminants. Your location in the foothills does not excuse you for not having alfalfa. Your land which makes good corn will also make a lot of alfalfa with the same amount of moisture. In fact you will get plenty of alfalfa pasturage before it is safe for you to plant corn and plenty more after the early fall rains when the corn has nothing but dry stalks. Alfalfa is a dry farming plant while corn is not—as a rule. It would also be much better if you would translate Soudan grass into alfalfa or sweet clover. Beets are a good hog salad and the office of a salad is to tone up the system for plenty of more strengthening food. Sunflower seeds are good for hogs if fed, as they like to take them, with other foods. For growing hogs you need alfalfa, skim milk, tankage or some other protein foods. You are better fixed to finish hogs than you are to get them.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., May 30, 1916.

STATIONS	Rainfall Data			Temperature Data	
	Past Week	Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	0	38.98	44.92	56	46
Red Bluff	.04	20.15	24.54	86	44
Sacramento	.04	18.27	19.93	86	44
San Francisco	0	27.12	22.08	68	48
San Jose	0	16.31	16.69	78	40
Fresno	0	11.72	9.56	88	42
Independence	0	10.34	9.42	80	—
San Luis Obispo	.02	26.37	20.39	70	40
Los Angeles	0	19.91	15.56	76	46
San Diego	0	12.53	9.97	68	50

Lime Makes Fertilizers Available.

(Continued from page 657.)

The Cheapest Nitrogen.—Practically all forms of nitrogen fertilizer pull great chunks of money out of our pockets, and most of them are not at once available. Nitrate of soda and sulphate of ammonia, the most available forms, have not proved safe to use in considerable quantities in citrus orchards except in the presence of organic matter and lime.

"The cheapest nitrogen is that from leguminous cover-crops, where the soil and moisture are right for the cover crops. As an illustration, Mr. Holland of Highland in April, 1915, sowed 10 pounds of sweet clover seed per acre. On December 10, 1915, analysis of this soil for water-soluble nitrogen showed that it carried 145 pounds per acre 30 inches deep. An adjoining orchard which did not have a summer clover crop plowed under in the fall, showed 45 pounds water-soluble nitrogen to the acre 30 inches deep. The 100 pounds additional of water-soluble nitrogen per acre where the clover crop was plowed under, would cost in the open market, $20 per acre.

That legumes do not grow well in acid soils is well known. The cover crop noted above, had received 10 tons ground limestone per acre in November before the sweet clover was sowed in April. Analysis of this soil indicated that three tons of limestone per acre had been neutralized by soil acids in a little over a year.

Acids Accumulate in Soil.—When cover crops, manure, etc., are decayed in the soil by bacteria to make humus, acids are liberated. These accumulate in time until they minimize the activities of the nitrifying bacteria and stop the nitrification of the organic nitrogen. When nitrogen fertilizers are applied to soil, most of them must be changed into soluble nitrates in which form nitrogen is available as plant food. This nitrification performed by bacteria also liberates acids which in time accumulate and inhibit bacterial activity; so that no matter how much nitrogen is applied, it cannot be used by the plants in needed quantities. These acids may also be poisonous to the trees.

Where soils are formed from granite, they have never had enough lime to neutralize all the native acidity. Where lime soils have been cropped continually, the cropping and leaching may or may not have rendered them acid.

Getting Rid of Soil Acids.—There is a cheap way of disposing of these acids. Calcium carbonate as ground limestone (or as quicklime or slaked lime which become carbonates after being applied to the soil) is composed of calcium and carbonic acid.

When calcium carbonate is applied to soils which are oversupplied with those acids which hinder activities of desirable bacteria, the carbonic acid is replaced in the combination with calcium by the stronger acids which are thereby neutralized. Bacteria can get to work again making humus and available plant food. The carbonic acid evaporates out of the soil.

In California, where constant irrigation is practiced, bacteriological months of freezing or several months of dryness, at least in the top soils. If other conditions do not hinder, such activity here proceeds the year around, and much more of acids are liberated than in the desert or in the East. These require much more calcium carbonate to neutralize them and indicate that California orchardists as a rule need more lime than Easterners. The increasing use of cover crops and manure also add greatly every season to the soil acids. Also, lime carbonate being soluble up to a certain point may be continually washed down or away by irrigation or seepage.

It is generally conceded that if the calcium carbonate content of the soil in which the roots feed, does not fall below 1 per cent, there will always be enough excess to take up all the oversupply of acids.

But the "official" method of analysis does not show the calcium carbonate of a soil. It does show the total calcium. But that calcium may have been in combination with sulphur, phosphorus, silica, etc.; whereas only calcium carbonate neutralizes acids in practical quantities. The "Marr" method of analysis shows the calcium carbonate. This is practiced by Mr. Thompson.

In April, 1914, he tested the granite soil of an orchard near Highland, but found no calcium carbonate. In May, 1914, 1000 pounds of fine limestone screenings were applied to each of ten trees at the rate of 45 tons per acre. This soil was tested for lime carbonate in November, 1915. It showed 15 tons per acre foot from six to eighteen inches deep and six tons per acre foot from 18 to 30 inches deep. As soil weighs about 2,000 tons per acre foot (92 pounds per cubic foot) this made the limed soil carry a little over ¾ per cent of calcium carbonate from six to 18 inches. Some of this may have been too coarse to be available to neutralize acids, but would become available later. Adjoining soil unlimed still showed no calcium carbonate.

Provide for Bacteria.—Beneficial bacteria require for their best growth, different conditions from those injurious ones which convert nitrates and soluble plant foods into gas which escapes into the air and is wasted.

By liming to constantly keep at least a 1 per cent calcium carbonate content of the soil, not only are the beneficial bacteria favored, but the injurious ones are hindered. Aside from correction of acidity, a large part of this effect is gained by aerating heavy soils or making sandy soils tighter.

Calcium carbonate has a cementing action which binds several soil particles, whether of clay or sand, into "crumbs" or "granules." This closes a great deal of the space between grains of sand, making it hold moisture better. Clay particles drawn together in crumbs, open the soil to circulation of air and water. This is what most of the beneficial bacteria need; and what most of the injurious bacteria cannot stand very well. It enables cover crops to grow, and bacteria to convert them into they have been plowed under. The humus in turn fills in between sandy particles still more effectively than the calcium carbonate and it separates clay particles, promoting better aeration, which results in better tree growth.

How Much Lime?—Not only acidity, but soil texture, amount of humus already present, the nature of fertilizer elements now locked up in the soil, and food requirements for calcium, are to be considered in applying lime.

There is no danger to the soil or plants, of applying too much ground limestone. Part of a great excess would probably be leached away. Clay soils require four or five times the calcium carbonate to produce the same effect as on sandy land. The dark color due to humus becomes more marked up to a certain maximum, with the application of more lime, (calcium carbonate). The more easily available the plant foods, the less lime will be required for that purpose.

While calcium as a plant food is not removed in any considerable proportion from a liberally limed orchard, it is vital to the tree. Every analysis of citrus leaves that has been made in Southern California, according to Mr. Thompson, shows that the healthy leaves invariably carry more lime than the small, mottled, or variegated ones.

Analysis of the ash of citrus trees by Rowney and Howe shows that of the ash of citrus roots 49.89 per cent is calcium oxide; of the ash of the wood above ground 55.13 per cent; of the ash of the leaves, 56.36 per cent; of the ash of the fruit, 24.52 per cent; and of the ash of the seed 18.97 per cent is calcium oxide. What part of this was calcium carbonate before the analysis, is not determined.

Moreover, something about limey soils is recognized to produce oranges thinner skinned, smoother, sweeter, more highly flavored and tender, with a noticeable aroma; and similar desirable characteristics are noticed with other fruits.

The increased crops and leguminous growth following application of calcium carbonate produces much more of soil acids than before liming. These acids neutralize more lime than ever before, so increased quantities must be applied.

The increased crops due to improved conditions brought about by liming, remove far more fertilizer ingredients from the soil, which will cost more to replace than when crops were smaller.

Quicklime acts more quickly than ground limestone in rendering fertilizer elements of humus and soil available. This may bring better crops for two or three years. But when plowed under in this form, it acts so strongly that much of the food is likely to be made soluble or turned to gas and leach or escape before the trees can use it. This is wasted.

Quicklime costs $10 per ton at Highlands. It may be converted into 3560 pounds of calcium carbonate, making such calcium carbonate cost about $5.60 per ton, besides the "burning out" of humus and fertility. Ground limestone costs $2.75 in Highland, being practically all cal-

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ter and cheaper for ordinary farm conditions.

Mr. Thompson applied to his orchard 30 tons of limestone screenings per acre in 1913 and 10 tons in 1915. As this has brought the lime percentage up to a safe margin, and has almost entirely, with the help of cover crops, softened the hard plow pan of three years ago, and keeps the soil mellow, porous, and moist deep down, he expects to apply only 4 or 5 tons per acre in alternate years in the future, growing cover crops summer and winter and applying fertilizers.

Principles of Jelly Making.

[Written for Pacific Rural Press by Prof. W. V. Cruess, University of California]

Pectin, fruit acid, and sugar are the essential constituents of pure fruit jellies. Successful jelly making consists in controlling these factors in such a way that the proper proportions of each are brought together. Pectin is probably the most important of these three. Of the common California fruits, apples, loganberries, oranges, lemons, grape fruit, and loquats are very rich in pectin and make jelly very readily, while such fruits as strawberries, apricots and peaches are deficient in pectin and do not, as a rule, give satisfactory jellies. The latter fruits, however, can be mixed with apples or loganberries which will furnish enough pectin for the blend.

Extraction of Pectin.—Such fruits as oranges and apples must be boiled with a little water to dissolve the pectin from the fruit. In preparing such fruit for boiling, it should be cut in rather thin slices and given only a small amount of water—in most cases only enough to cover the fruit. Large amounts of water result in dilution of the pectin and make it necessary to concentrate the juice by prolonged boiling to make the pectin strong enough to jell, driving off the flavor and giving a "flat" tasting jelly.

The less boiling, the better the flavor. The finest flavored jellies are made without boiling. Apples, oranges, and other firm fruits should be boiled until they soften, but not until they become "mushy" in consistency, because this will make the juice very cloudy. The hot juice from the boiled fruit may be drained off through a felt jelly bag or through several layers of cheesecloth. The "free run" juice, or that which drains out without pressing, should be clear and may be kept separate from the cloudy juice obtained by pressing the boiled pulp.

Berries are very juicy and require no addition of water. They should simply be crushed, placed in double boiler to prevent scorching, and brought to 190 degrees F. or over. Bringing the crushed berries barely to or nearly to a boil is sufficient. Boiling them greatly injures the flavor and is not necessary to extract the pectin, because of their soft texture. A very large proportion of the hot juice will drain off through a bag. The remaining pulp may be pressed by twisting the bag or by placing the bag of hot pulp in a small meat press. The press is cloudier than the free run and should be kept separate.

A second quality jelly can be made by adding a little water to the pressed pulp, boiling, and pressing again. Some fruits will give a third and even a fourth lot of jelly material by second and third additions of small amounts of water followed by boiling and then by pressing. Such jelly can not, of course, be sold as pure jelly.

Clearing the Jelly Stock.—The pectin solution or juice from the heated fruit is spoken of as "jelly stock." A clear jelly is much more attractive than a cloudy one; hence all jelly makers try to get the jelly as clear as possible. The clearing must be done before the sugar is added because the sugar so increases the viscosity of the juice that it is practically impossible to filter or clear it in other ways.

Jelly bags are used by practically all jelly makers. A heavy felt about three-eights of an inch thick makes a very satisfactory filter bag. This is made into a cone shaped bag with loops at the top for hanging in a convenient place. The hot juice is poured into this and allowed to filter through into a pot placed beneath. The first juice to come through is cloudy and may be returned to the bag. The filtration is very slow, but usually gives a clear juice. The rate of filtration and clearness of filtered liquid can be greatly improved by adding a handful of light, finely powdered infusorial earth to a gallon of the hot juice and mixing it in before filtration.

Most jelly stocks will settle after standing in bottles a few days. To permit this, the juice must be sterilized. It may be put in glass jars and sterilized at 212 degrees F. as directed in previous articles for sterilization of fruit in jars. The juice is then left several days to settle. The settled juice can then be poured from the sediment and made into jelly. The commercial firms use this method extensively. Orange jelly stock settles more satisfactorily than other juices and usually gives a perfectly brilliant jelly when so made.

The Pectin Test.—A teaspoonful of jelly stock mixed with a teaspoonful of alcohol in a glass will give a copious gelatinous precipitate if enough pectin is present to give a good jelly. The test is given as a matter of interest only and is not necessary to good jelly making.

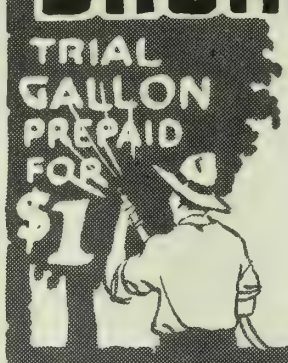
(Continued next week.)

BURNS REDWOOD STUMPS.

To the Editor: Tell F. L. L., Bethany, that he can burn out redwood stumps down into the roots if he bores two holes in the stump at an angle of 45 degrees, to penetrate as near the center as a long-shanked 2-inch auger will bore. Bore the lower hole as close to the ground as the handle will allow and in a line with the ground. Bore the upper one at a 45-degree angle to meet the lower one, and drop several small pieces of red hot charcoal down the upper one which acts as flue. I have burned stumps out that were 4 and 5 ft. in diameter. This was the Indian's way of felling cedar trees before the white man stole his country, as he did not possess an axe.

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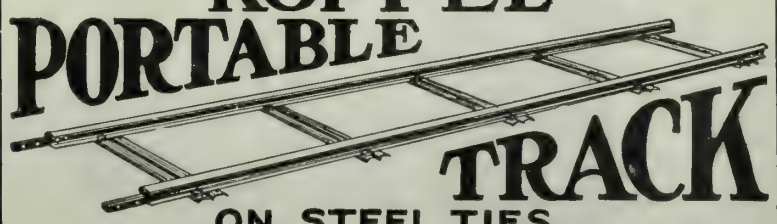
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Our Instructive Catalogue P will be Mailed on Request

Present Walnut Crops and Markets.

[Written for Pacific Rural Press.]

This year's walnut crop will be about 6,000,000 pounds less than in 1915 and 5,000,000 pounds more than in 1914 according to the California Walnut Growers' Association. Until the recent warm dry winds which caused almost all of the last setting of walnuts to drop, a crop of 34,000,000 pounds was in prospect on account of increased bearing acreage. Now the prospects are for a maximum crop of 23,000,000 pounds.

Markets.—"Over 95 per cent of the orders we will accept before prices are named, are now on our books, (May 8). We are fully sold up on budded walnuts." The prices on bulk nuts will not be named until the growing hazards are over.

Freight rates have been $1.40 per hundred pounds to all territory east of the Rockies; but at the suggestion of the Association, all railways originating in California have requested the Transcontinental Freight Bureau to reduce it to $1.25. Then the Interstate Commerce Commission is expected to approve.

Packages.—The two objections to the Diamond Brand packages have been removed. Instead of 14 ounce cartons, full pound cartons will will be used. The gelatin opening which was expected to attract buyers by allowing them to see the nuts, only made them look dingy. The gelatin will be replaced by an attractive photoengravure in colors.

The guaranteed maximum price to the trade is 17½ cents each for 1916. This will be reduced if the bulk price of No. 1's is named below 16 cents; as for packing, packages and special advertising, 1½ cents per pound is to be charged. The freight approximates 1½ cents so the jobbers and retailers can make six cents per package, retailing at 25 cents.

Package walnuts were sold last year for the first time, and the sales "ran greatly beyond our expectations." 100 per cent increase is expected this season. The last orders for packages will be taken June 20. National advertising will be done for packages in proportion to the amount of orders.

SAVES BREBA FIG CROP.

[Written for Pacific Rural Press.]

Eight hundred to 1200 fig blastophaga per caprifig were found early in May in the young orchard belonging to E. H. Erickson of Brawley. These pollinate the breba crop of Smyrnas, saving them where they have heretofore been lost. The climate seems to preserve and mature capriwasps earlier here. Mr. Erickson has five acres of four year Smyrnas in which he planted 12 caprifig trees per acre of a variety introduced by his neighbor Francis Heiny, of the Government gardens. One of these had thousands of heavily infested figs this spring.

Intercrops and Hogs.—Watermelons were grown between the trees the first year, cantaloupes the second, wheat the third, and alfalfa with hogs this season. The hogs do not hurt the trees; shade is good for them; they eat windfall figs; and fertilizer is kept where needed.

EUCALYPTUS FENCE POSTS.

To the Editor: Is there a way of treating blue gum fence posts to prevent rotting?—F. M., San Luis Obispo.

[Answered by C. A. Tupper, U. S. Forest Service.]

[Blue gum posts rot in two to four years. The Forest Service has found such posts treated with creosote, sound after eight years' service. Redwood posts last six to forty years, depending upon the conditions under which set and the quality of the wood. In order to get the best quality, railroad companies using redwood ties specify that these shall be split or hewn, and that they shall not contain sapwood.

Painting of timbers to be used in the ground has not been very satisfactory since so little of the preservative actually gets into the wood, and there is frequently no application whatever in the checks. No paint which we have tried has given better satisfaction than coal-tar creosote.

In the treatment of eucalyptus posts by the open tank method it is suggested that they be turned upside down after being removed from the creosote. The wood is very porous, and this permits the surplus creosote to run into the top of the pole instead of draining out into the ground. Treatments of four hours in hot creosote (180 to 200 deg. F.), and two hours in hot creosote followed by 17 hours in cold creosote, have given the results above quoted.]

BROOM CORN.

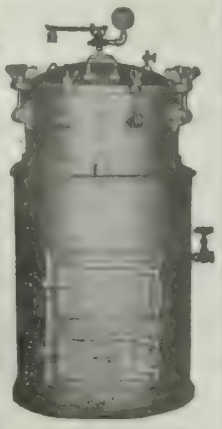
To the Editor: What is broom corn worth? Is there a market for it in San Francisco at all times? When is the best time to plant in this locality? What variety can be grown successfully in Madera Co.?—T. H. M., Chowchilla.

[Answered by Zan Bros. & Co., San Francisco.]

[Broom corn is worth (May 8) $150 per ton; there is a market for it in San Francisco at all times. Plant in April, May, June, or July. Use the standard variety. It can be successfully grown in Madera Co. if there is plenty of moisture and low land.]

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CANNING OUTFIT NO. 12

OUTFIT NO. 12 INCLUDES:
1 18 x 18-inch Retort with Cover, Packing, etc.
1 Petcock Choice of either Steam Gauge or Thermometer.
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1 Triangle (to support crate).
1 Set No. 2 Crane Irons.
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1 Thumb Nut Wrench.
2 Pair Can Tongs.
10 Feet Wire Solder.
1 Flux Brush.
1 4-ounce Bottle Liquid Flux.
1 Firebox.
1 Shaker Handle.
6 Canners' Knives
1 Book of "National "Recipes.



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Berger & Carter
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California Garden Flowers,
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You are interested in the peach business if you grow peaches. It is your business; your prosperity depends on the prices secured.

Do your part. The **CALIFORNIA PEACH GROWERS** have already made a 5c price virtually assured for this year. **SIX CENTS** may be secured if $300,000 more stock is subscribed. That will make the required million dollars. More acreage must be secured also.

Talk to your neighbors. Take more stock yourself. Help get that extra cent this year. It is time well spent if you can go after your neighbors and get them to sign up and to buy more stock.

Do it now; get the added acreage and added subscriptions for stock before the marketing season begins.

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Santa Fe
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1916 SMYRNA FIGS

Mr. Grower, how many will your trees produce this season? They have brought as high as ten cents per pound in the sweat-box on account of the war interfering with importations. You have done your pruning, plowing, irrigating and cultivating, but this expense will be wasted, unless your secure a sufficient supply of **PROFICHI FIGS** of the right varieties. The Mamme crop was short this season and the **PROFICHI** crop will be short as a consequence. I have a larger Capri orchard than my Smyrna trees require and will have a surplus of **PROFICHI FIGS** for sale. After spending your time and labor to secure a crop, can you afford to lose a $200 a ton crop by neglecting to secure the necessary **PROFICHI FIGS?** Limited quantity, June delivery, for sale. Order now.

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Makes a Perfect Seed Bed
STOPS EVAPORATION—PRESERVES MOISTURE.
The Best Clod Crusher ever made for Farmer, Orchardist, Vineyardist, Nurseryman and Seedsman.
MADE IN ALL SIZES
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California Garden Flowers, Pacific Rural Press, $1.50 Postpaid.

Buckwheat Summer Crop.

To the Editor: Give me some general information regarding buckwheat. How does it compare in yield with wheat and other grains near the coast of California, and is it good chicken feed? I have planted some for bee pasture and am anxious to know if I can use the grain—W. O. C., Nipomo.

[Answer adapted from "Second Thousand Answered Questions."]

[You can grow buckwheat where the soil holds moisture enough to grow a corn crop. As it will stand no frost, it must be a mid-summer crop. Broadcast like barley and harvest with a mower. Dry well before raking or it will heat in the cock. Thresh with a grain separator with proper arrangement of concaves and sieves. There is very little market for the grain. Buckwheat is gaining popularity as a summer cover crop in irrigated orchards. It will smother out a good many weeds. It may yield a ton per acre or more.

Regarding its food value for chickens we quote Geo. H. Croley:

"Buckwheat kernels, either whole or ground, are excellent feed for fowls. Seventy-one per cent is digestible; the nutritive ratio is 6.8; and it has been demonstrated that 100 pounds, after providing for maintenance of the hen, is capable of yielding 135 average whites and 179 average yolks of eggs. When fed to cows it stimulates the flow of milk, and pigs grow rapidly on it. However, when fed to fowls or other animals it must not exceed twenty per cent of the feed. Results are invariably unsatisfactory when fed in excessive quantities."

CROPPING DOWN BERMUDA.

To the Editor: I have medium heavy adobe ground containing some alkali and a good deal of Bermuda grass. The field is just finishing a good crop of barley and raised a poor lot of corn last year. I wish to raise hog and chicken feed and some hay and at the same time get rid of the grass to get ready to sow alfalfa next spring. I am planning to plant feterita to be irrigated and well cultivated and about a month after this crop is sown, plant black-eyed cowpeas in or between the rows. I would expect to cut the feterita heads, then mow stalks and peas for hay to feed to cows. On part of the piece I would hog down the peas and later sow rape for winter pasture. Do you think this a good plan or would somthing else be better?—W. H. W., Riverside.

[We think it a good plan; but it will be more important to find out what the Bermuda will think of it. If you can get a good growth of the things you mention by cultivation and irrigation you will weaken the Bermuda but you will not get rid of it. If you do get sorghum and cow peas to grow well it will assure you that alfalfa will have a chance to carry on the fight with Bermuda, but if they are depressed by alkali alfalfa will not stand much chance. Bermuda will beat out anything on alkali.—Eds.]

SUGAR BEET REQUIREMENTS.

To the Editor: What soil is best adapted to sugar beets, the best time to plant them and the best method of culture?—H. C. Butts, Cupertino.

[Pofessor R. L. Adams of the University of California has recently submitted these pointed suggestions about sugar-beet growing:

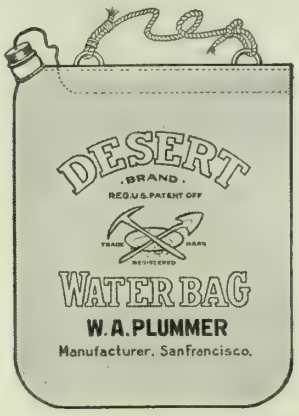
Soil Requirements — Surface: Strong loam, will withstand considerable alkali. Subsoil: Compact clay, good moisture retainer. No hardpan. Depth: Surface soil 4′ or more.

Calendar of Operations— Preparing seed bed. Fall planting: Plow in August to September, irrigate, work into shape. Spring Planting: Plow 14″ in November or December, replow in February. Work into shape. Seeding: Time: Fall—November 1, December 1. Spring—January 15, May 1. Quantity Seed: 15 pounds. Method and Distance: 22″ rows. Care of Growing Crop: Irrigate two times (May and June) thin to 12″ apart when plants have 6 leaves. Cultivate at least four times—once a month, beginning in April. Hoe two times—May and July. 200 to 300 days to maturity. Varieties: Imported or domestic varieties; seed sold by factory.

Santa Clara 1915 prunes rose last week from 4½c. to 5. Holders had formed an agreement.



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Regular Style.

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BRAND
Water Bags

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Highest Grade of Pure Flax Fabric
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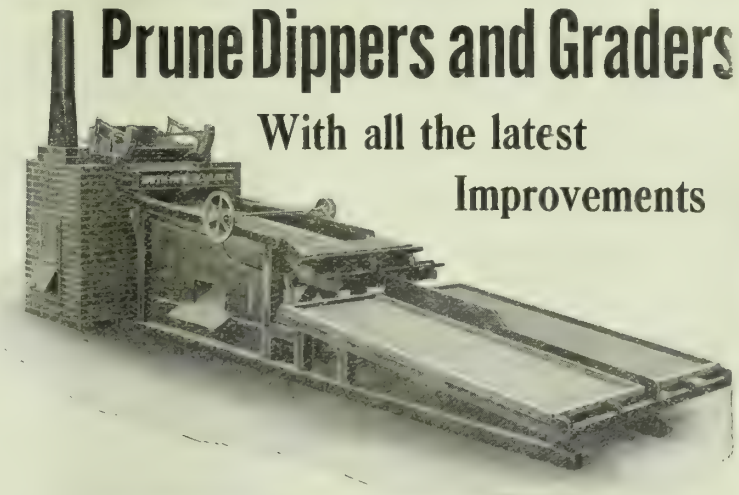
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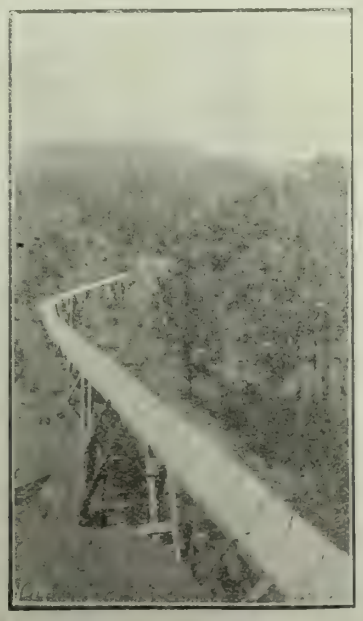
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Mechanical Power on the Farm.

USES GRAIN SACKS REPEATEDLY

[Written for Pacific Rural Press.]

Many grain farmers are short of sacks and yet on account of steep hillsides do not like to haul a 50 bushel hopper and elevator on the combined harvester like that shown in the illustration. They can use a few hundred sacks repeatedly as did H. D. Coombs of Washington. He harvested last year 1125 acres yielding 25 bushels per acre at the rate of 30 acres per day and a total cost of $1436.70.

He bought 500 sacks. The sack sewer did not sew them but tied and dumped them as usual. A man with a three-horse team hauled them to stationary bins for bulk grain near the center of the section. A platform 4x8 feet was hung by hooks from the edge of the bin. Onto this his load was thrown. Another man emptied the sacks into the bin. When not busy at this he did odd jobs.

Where possible, the bins would be placed on a side hill where wagons could unload on the upper side and load by gravity from the lower side.

Last season some 200 Holt combined harvesters handled grain in bulk, either this way or by the wagon-loading device illustrated.



Hopper and elevator attachment by which bulk grain is handled directly from combined harvesters. Made especially for Holt machines.

MAGNETO TYPES.

To the Editor: What is the difference between a make-and-break magneto and a jump spark type magneto.—P. F. B.

[Answered by Commercial Engine Co.]

[The Splitdorf Electrical Co., to whom we referred the query, write as follows:

"The make and break low tension magneto is of lower voltage than the jump spark type. It has an armature wound to give six volts and it cannot generate sufficient voltage to induce strong enough high tension current. The armature of the jump spark type low tension is wound to give approximately eight volts, at 150 revolutions per minute and at higher revolutions will give as much as sixty volts. This is stepped up through the transformer containing primary and secondary windings to give the necessary high voltage for jump spark ignition.

"The make and break type cannot be changed to jump spark unless the armature is rewound and make and break mechanism mounted. The jump spark cannot be changed to make and break type unless the armature is rewound and interrupter taken off."]

EXPENSIVE ECONOMICAL ALFALFA IRRIGATION.

[Written for Pacific Rural Press.]

"Pumping water costs less now though the water level is deeper. We have better machinery and electricity." Woodward and Sons of Perris valley have the dismantled remains of four elaborate pumping plants as monuments to their experience of ten years.

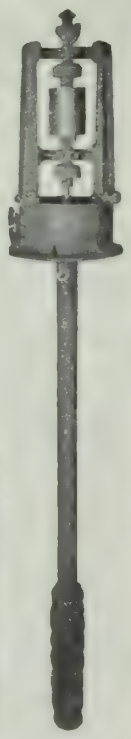
A large part of their unusual success with alfalfa on 80 acres is due to frequent irrigations. These are made possible at the right time by a modern pumping plant.

The well is 375 feet deep but water would come within 50 feet of the surface in winter if it were not pumped down below the motor. A direct connected 35 h. p. non-overloading electric motor run by a 2200 volt alternating current rest on the bottom of the pit, with its self-poised Byron-Jackson centrifugal pump. A winch and steel rope over the well are always ready to raise the motor and pump if threatened with submersion.

The pipe joints are connected by bolted flanges rather than screw joints, to make dismantling easy. Electric lights are installed at the motor so one can see from the top if all is well. A movable light is also provided. The elbows at the surface have a long radius to reduce friction.

The suction pipe is 40 feet long,

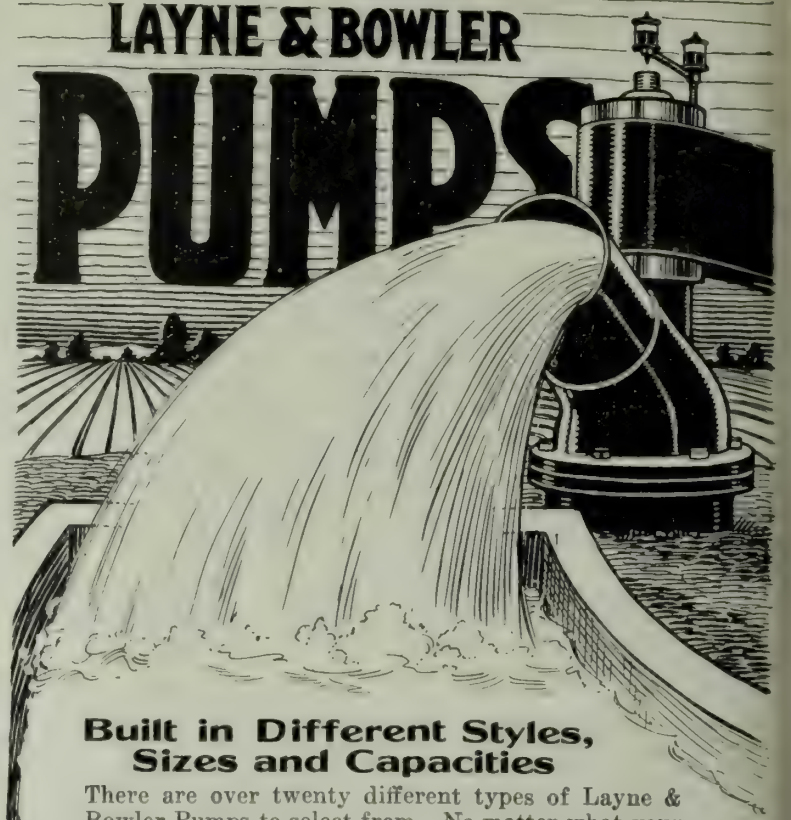
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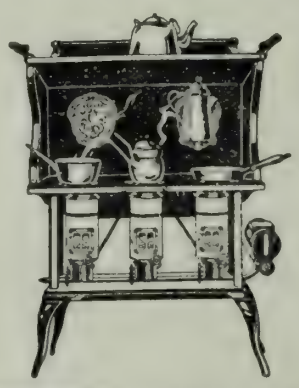


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No coal, wood or ashes to lug—no waiting for the fire to burn up. Better cooking because of the steady, evenly-distributed heat, under perfect control. All heat concentrated on the cooking and not radiated around the room. The long, blue chimneys prevent all smoke and smell.

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Diameter in Inches { Driving Pulley / Driven Pulley

Kind of Drive { Cross / Straight / Perpendicular

Width of Belt _____ Ply _____

Distance Between Centers of Pulleys { _____ / _____

Revolutions per Min. of Driving Pulley { _____ / _____

Kind of Machinery Driven { _____ / _____

My Dealer's Name _____

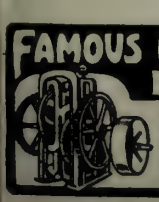
My Name _____

Address _____

A pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.

A

FAMOUS LUITWIELER PUMP



Correct in every detail. No trouble. Cheaper water Perfect satisfaction. 2 Irrigation Booklets free. Luitwieler Pump Eng. Co., 713 N. Main St., Los Angeles.

for sometimes water is drawn down 20 feet below the pump. Then water falling from strata above the lowered waterlevel would carry so much air with it that it would de-prime the pump. In one of the old wells this was prevented by putting 2x4's in to break the fall of the water. Now with the long suction pipe covered at least 20 feet, not much air gets into it from the bottom.

A pressure gage is fitted to the pump which indicates the pressure in its equivalent as feet of water lift. This equals 108 feet, plus whatever the waterlevel is lowered in pumping. It includes friction of water in pipe. It also indicates how much the water is being pumped down.

The priming pump is located outside the pump house so that no water will be spilled on the motor. A wet motor would have to be brought to the surface and dried out at great labor before turning electricity into it. Wires from switchboard to motor are enclosed in conduits to avoid moisture, and mixture with machinery should the motor have to be raised.

Electricity costs $50 per horsepower for 8 months' continuous or non-continuous running. For four winter months it runs on a meter. The total cost last year was $2070, but 70 acres were watered for a neighbor, for which $670 was received. The Woodward 80 acres were supplied for $1400. The crop is about 11 tons per acre.

OVERHEATING OFTEN DUE TO FAULTY IGNITION.

"One of the common causes of overheating is faulty ignition. A late spark overheats the motor; the charge is ignited after the piston has started downward on the power stroke; consequently the hot gases are not expelled from the cylinder before the second charge is fired. This will continue until the cylinder becomes so hot that preignition will take place. That is, the gas will ignite before the piston has reached the correct point, resulting in what is known as a "spark knock," says a writer in a standard oil bulletin.

"By advancing the spark lever on the quadrant, the mixture is ignited before the piston has reached top center, so that when the piston does reach the center and starts down, the expansion of the gases is complete, and they are exhausted at a comparatively low temperature.

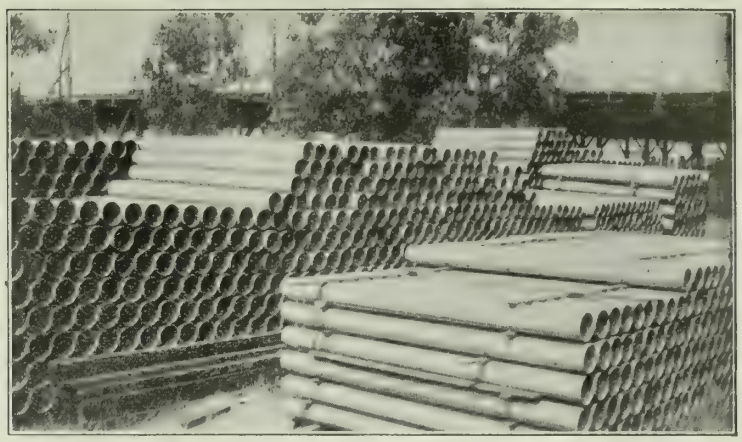
"Missing of one or more cylinders has a tendency to overheat the motor, as the fresh gas is taken into the mission cylinder and ignited by the outgoing charge from the working cylinder, which causes muffler explosions and back pressure on the cylinders which are working.

"The right kind of lubricating oil is a great help in keeping the motor cool, and many of the leading automobile engineers and motor experts say that oil made from wester asphalt-base crude has less tendency to 'break down' under cylinder heat than oil made from other crudes, and is, therefore, a more efficient aid in keeping the motor cool."

The Automobile Tire Co., claims to be selling over 4000 tires per month in California. These are of nearly all the standard makes.

A little wrench is a dangerous thing, tractorly speaking.

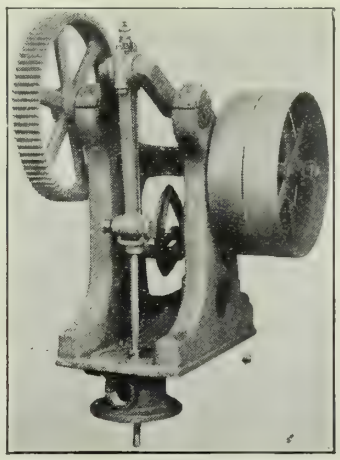
SAVE THAT CROP!



Large Stock on Hand—All Sizes.
"WESTERN"
Surface Irrigation Pipe
GALVANIZED
Riveted and Soldered.
Best for Strength and Durability.
ORDER NOW
Send for Bulletin D for Description and Prices.

Western Pipe & Steel Co.
of California.

444 Market Street, SAN FRANCISCO.
1758 N. Broadway, LOS ANGELES.



WILSON
Stroke, 12 inches.
Single Acting Pump

This pump is constructed along the same lines as our **Uniflow Duplex** pumps. Cast Steel Crankshaft. Malleable Links and Connecting Rod, Single Piece Frame, Straight lift, device which avoids slides, guides, beams, etc. Will do all work up and including 3 horse power and this without breakage or unreasonable wear. So simple any one can install.

PRICE, $75.00

WILSON & WILLARD MFG. COMPANY
15th and Santa Fe Ave.
Los Angeles, Cal.

Studebaker

HAS BEEN CONTINUOUSLY MAKING
WAGONS—BUGGIES—HARNESS
FOR EVERY FARM USE SINCE 1852

SEE THE STUDEBAKER DEALER

P For Every Purpose NEW Threads & Couplings Hot Asphaltum Dipped **I** Second Hand and NEW **P** Screw Casings Fittings and Valves Guaranteed for Pressure **E**

Pacific Pipe Co.

Main and Howard Streets, San Francisco, Calif.

General Agricultural Review.

CITRUS.

The Texas Orange and Fig Growers' Association expects to handle 300 cars of Satsuma oranges this year.

Studies in citrus refrigeration en route were recently made on five cars of oranges bought by the U. S. Dept. Agr. from the Upland Citrus Association.

Florida orange shipments have dwindled to almost nothing. To May 13 they had shipped 17,645 cars of oranges and 5421 of grapefruit.

Navels, Valencias, and Lemons do not need pollination according to University authorities.

The Citrus Protective League has been trying to get a refund from the railroads of the difference between the $30 charged several years and the $7.50 required in 1911 by the Interstate Commerce Commission. They have recently lost the case.

The Palmetto Ranch of Holtville, is said to have the only local nursery in Imperial county where locally grown trees would naturally be far better than imported ones. They sold 8,000 grapefruit trees and expect to sell 50 per cent more next year.

DECIDUOUS FRUITS.

Beaumont cherries are all harvested.

Beaumont apples are estimated at 75 per cent of normal by Secretary McCahan of the Fruit Growers' Association.

Plums are being shipped early from Vacaville to the East. The crop is large, as is also the pear crop.

The rain, hail, and severe winds around Vacaville May 22 did little damage, cherries having all been shipped.

Red spider is showing up badly on prunes, almonds, etc. Dry sulphur or atomic sulphur spray are the remedies.

Peach growers have been selling for green use some of the fruit contracted to the Association. This they have a right to do after due notification.

Nearly 5,000,000 cases of apples had been harvested last week in two States of Australia, and lack of ships prevents over a fifth of them being exported.

The Alameda cherry crop was very poor. Apricots spotted, probably not over 40 per cent.

Freight rates on Oregon apples to Arizona have been reduced from $1.15 and $1.17 per cwt. to $1.09 and $1.10. Why don't we supply Arizona?

Deciduous shipments by the Cal. Fruit Distributors to May 27, 1916, were 161 cars as compared with 37 last year. The season is two weeks earlier.

A new plant, the main building of which covers 30,000 square feet of floor space, for exclusive manufacture of fruit-handling machinery is being completed in San Jose by the Smith Mfg. Co.

The Tulare County Canning Peach Growers sold their 4000 tons to the Pasadena Cannery Co. at $27.50 for Tuscans, $25 for Phillips, $22.50 for Orange Clings, and $17.50 for Muirs and Lovells.

The Porterville Cannery will run, having signed up 1500 tons of peaches at home. They are now competing with Visalia canneries for what is left of the crop around Visalia since the 4000 tons were sold to Pasadena.

The Northwestern Fruit Exchange has promised, at the suggestion of Acting State Horticultural Commissioner G. P. Weldon, not to allow wormy and scabby apples to be shipped to Cal. as heretofore, knocking the market for our own standardized product.

San Joaquin Valley peaches have been selling: Elbertas, $20; Lovells, $20-$22 to can; clings, $22.50 to $27.50; plums $32 to $40; dried apricots 10 to 11 cents and green apricots $40; dried peaches, 5½ cents; nectarines 7½ cents; Muscat raisins, 5 cents and natural Thompson raisins 7¼ cents to outside packers.

GRAPES AND SMALL FRUITS.

Grapes, potatoes and melons south and east of Fresno were frosted last week, not seriously.

California strawberries in Oregon have been found in undersized boxes which will hereafter be confiscated.

Raisins are being sold in the Southern States, extensively for the first time in the spring and summer season.

San Joaquin Valley grapes are selling at record prices: Malagas, $30; Emperors, $50 to $60 packed in drums; Cornichons, $27.50; Thompsons, $30.

A carload of California strawberries were sold in Milwaukee recently. It was four days on the road. Top tiers slightly molded. One thousand cases of Dollar berries.

The Brazilian representative of the Cal. Associated Raisin Co. says America is capturing the market formerly supplied by Germany, and that our raisins are in much better demand and of better quality than those from Spain.

GRAIN AND FIELD CROPS.

Cotton around Holtville is estimated at 5000 acres.

Manteca sugar beets look like 13 tons per acre on 4,000 acres.

Shipments of new Delta potatoes out of the State have begun.

Beets and limas in Ventura and Santa Barbara counties are coming along in fine shape.

Titanic wheat is being exploited. The U. S. Dept. Agr. warns growers not to invest too heavily.

An Oxnard lima bean grower of 8,000 sacks recently refused $5.05 for them.

Cantaloupe shipments from Imperial Valley increased from 297 carloads in 1905 to 4480 in 1914.

A cantaloupe inspector in Imperial county has been appointed for each shipping shed, with power to destroy all condemned melons.

Foreign importers of American grain are complaining to American



SULPHUR

Fleur de Soufre, Anchor Brand, Velvet Flowers of Sulphur and Eagle Brand. Packed in barrels and double sacks. Are the fluffiest Sulphurs that money can buy; the best for vineyards; the best for bleaching purposes. LEAVING NO ASH. SEND FOR ILLUSTRATED BOOKLET, also PRICE LIST and SAMPLES.

SAN FRANCISCO SULPHUR CO.
624 California St., San Francisco, Cal

RHUBARB - CACTUS - HOGS

Wagner's Giant Rhubarb Plants less than half price.
If planted this May or June should yield 15 tons the first year.
Spineless Cactus, the best known dairy and hog feed. $10 per 1000 slabs.
Mulefoot hogs, choice pedigree breeding stock, both sexes, 140 head ready for delivery.
Bankable notes or mortgages accepted as payment.

J. B. WAGNER,
Pasadena, Calif.

PLANT NOW

CARNATIONS from 2½ inch pots, 12 for $1.00.
ASTERS in 6 colors, 55c per doz.
CHRYSANTHEMUMS—my selection, 12 for $1.00.
PELARGONIUMS—10 varieties 4-inch pots in bloom. 25c each. Send for price list.

GEO. N. TYLER,
Los Gatos, Cal.

Stack Your Hay
-the Schmeiser way
this way
With the Schmeiser Portable Automatic Derrick

Saves time—saves work—saves money. Handles hay, loose or baled, in the easiest, quickest, most economical way. It is the modern derrick for the modern farmer.

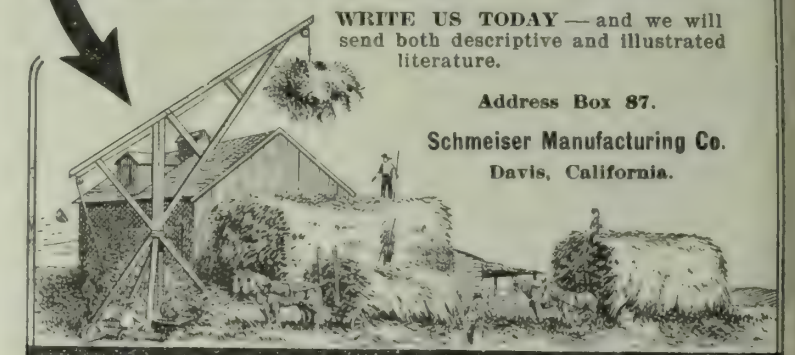
Lets Three Men Do the Work of Nine By Hand

modern farm should be without it.
Can also be used for hoisting machinery, building material, dirt, or heavy loads of any kind. Has a lifting capacity of over half a ton. It is always ready, and being portable, it can be moved from place to place as easily as a farm wagon. No

Now being used with great success all over the Pacific Coast

WRITE US TODAY — and we will send both descriptive and illustrated literature.

Address Box 87.
Schmeiser Manufacturing Co.
Davis, California.





The BIG BULL Tractor
You see them everywhere

Last year we told you what the BIG BULL could do.
This year your neighbors will tell you what the BIG BULL has done for them, and is still doing.
Ask us for their names.

$645 f.o.b. Minneapolis

Plows 7 to 9 acres in a ten-hour day. Self-Steering in Plowing. Subsoils the furrow, increasing crop yields.

20 H. P. on the belt.
Will run a 7-in. Centrifugal Pump.

The BIG BULL will pull a 24-in. separator fully equipped.

Write Dept. A for the monthly Bull Tractor Bulletin.

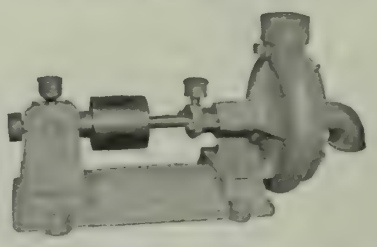
More Bull Tractors have been sold to farmers than all other makes of small tractors combined.

HUGHSON & MERTON, Inc.,

530 Golden Gate Ave., San Francisco. 329 Ankeny St., Portland. 823 Railroad Ave., Spokane. 1229 S. Olive St., Los Angeles. 806 E. Pike St., Seattle.

THE WINSBY PUMP

Our New 1916 Type Pump



Best Model for Low Lift Pumping

Size	1 in.	1¼ in.	1½ in.	2 in.	
Price	$16.00	$20.00	$25.00	$30.00	F. O. B. CARS OAKLAND

WRITE FOR FOLDER 55.

Larger Sizes at Proportionate Prices.

Complete Pumping Plants of Any Size or Type Furnished and Installed.

WE MANUFACTURE—Pumping machinery of all kinds and for all purposes. Mining, Milling, Concentrating and Rock Crushing Machinery, Ice and Refrigerating Machinery, Cold Storage Rooms and Counters. Water Wheels, Dredges and Hydraulic Machinery. Fire Hydrants and Cast Iron Fitting.

MANUFACTURERS UNITED IRON WORKS ENGINEERS

GENERAL OFFICES AND WORKS: OAKLAND, CALIFORNIA.
We are the largest manufacturers of pumping machinery on the Pacific Coast.

consuls that the grain is not up to grade standards.

Wheat in Stanislaus county is negligible; oat acreage 50 per cent reduced, and 75 per cent crop on that; early barley on west side fine, late grain needed rain, and got a little.

On the Armour tract, in the Sutter Basin, near Knights Landing, fifteen thousand acres are being planted to beans. The Lady Washington, pink, and Kidney varieties will be sown.

NUTS AND OLIVES.

Santa Barbara is receiving inquiries about Cal. walnut growing from residents of warring countries.

Oakdale almond growers voted recently to set aside ¼ cent per pound to build a warehouse and bleaching shed. They have 60 members.

That nursery tree peach roots dipped in 5 per cent bluestone solution died while untreated, similar ones set on adjoining land lived, is reported by D. S. Nelson of Arbuckle. The loss of labor, trees, and time is estimated by himself at $10,000. He might have saved that $10,000 by reading Prof. C. O. Smith's article in Pacific Rural Press, April 8. A 3¾-per-cent solution killed the trees in this case.

MISCELLANEOUS.

The Alameda pea crop is all harvested.

A logful of honey recently ran into a buzz saw.

Knights Landing bean growers are getting ready to plant.

There are 26 Government reclammation projects now under way.

About 3000 acres of grain around Huron were recently burned.

The Orland Farm Bureau is launching a campaign of grasshopper extermination.

Rice growers of the State, met June 2 with Market Director Weinstock.

Cotton insects are to be studied in Imperial Valley by the U. S. Dept. Agr.

Stanislaus county stock is eating hay faster than it is being produced there.

Processes for removal of alcohol from beer and wine have been announced.

Wind and water broke Tulare Lake levees and flooded 8 more sections last week.

Blacks Landing (San Joaquin county) jackrabbits were recently driven into the canals.

The Grange system of direct marketing at Sacramento is announced a success.

On the Brack tract, northeast of Stockton, one thousand acres is being seeded to Indian corn.

The first carload of Imperial Valley cantaloupes that reached Chicago sold at $4800 or about $16 per crate.

The State Market Director is circularizing 3000 bee growers to find out what they want in regard to marketing honey.

Chowchilla farmers are planning to grow sugar beets for the Visalia factory, which is drawing on all surrounding counties.

The Utah-Idaho Sugar Co. advised Truckee-Carson sugar beet growers to turn under a crop of alfalfa before planting.

The U. S. Senate recently passed a bill providing for Federal co-operation with the States in the construction of rural post roads.

The Imperial Valley cantaloupe crop of 8000 acres from Brawley to Calexico is ripening fast and promising the biggest crop ever.

The Cal. Development Board will meet at Yreka June 23 and 24 to discuss the needs and problems of Northern California.

To kill rose aphis the U. S. Dept. Agr. recommends a teaspoonful of blackleaf 40 in 1½ gallons water with ½ ounce laundry soap, to be sprayed on the bugs. It gets all it touches.

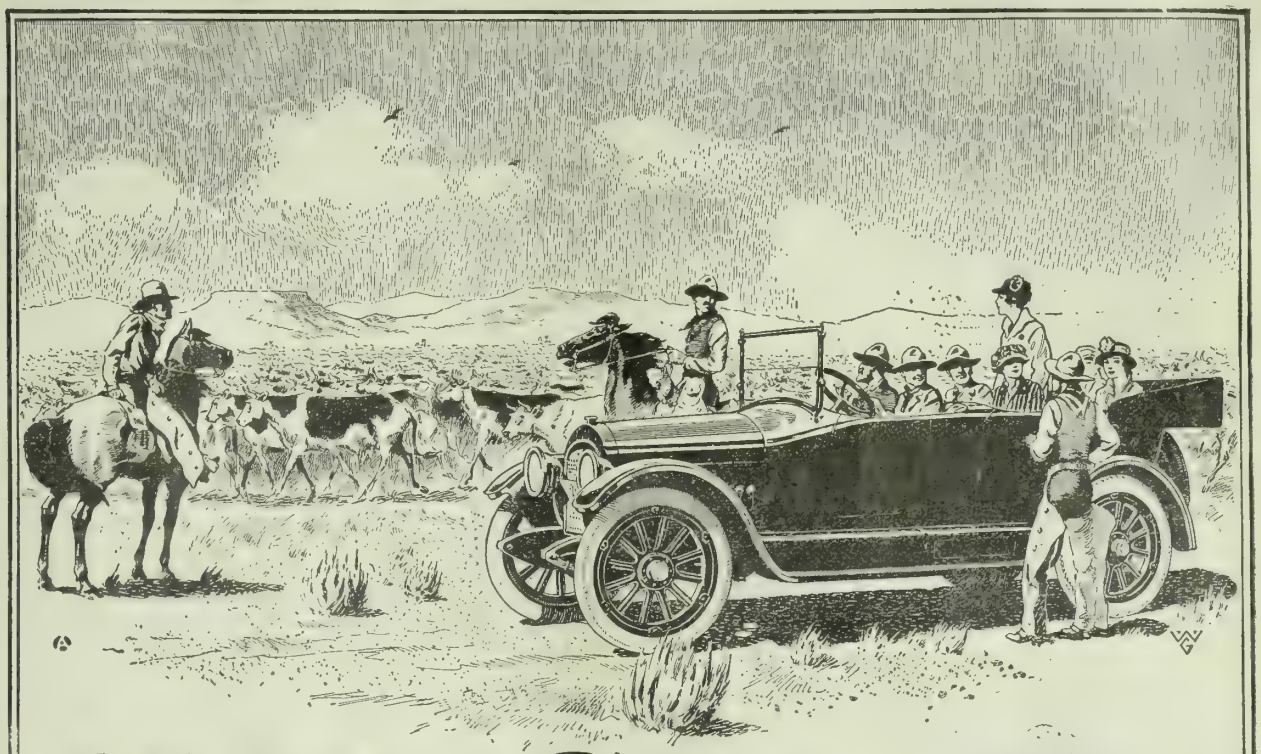
The bean acreage in island sections will be unusually heavy this season. Among the large planters is Peter Cook, who will seed about 600 acres near Rio Vista.

More than half the 180,000 acres under the Elephant Butte dam recently completed in New Mexico to control the Rio Grande river, are in a virgin state and open to homesteaders. Apply to Dept. Interior, Washington, D. C.

The West Side Irrigation District comprising 11,000 acres around Tracy will vote in August on the issuance of $285,000, 6 per cent bonds to fix up to pump water from Old River to a high point whence it would be distributed by gravity.

"Farmers do not seem to need money," says V. C. Bryant, farm loan manager for the Savings Union Bank and Trust Co., who last week addressed the Ft. Bragg High School and the Ukiah Farmers and Merchants Club.

Kansas commission merchants must be licensed, to do business after July 1. Indemnity bonds must be provided to insure honest dealing, The State Secretary of Agriculture is given a right to investigate all complaints. A record of each sale, of each shipment, the name of the party to whom sold and the sale price, must be kept and payment made within 48 hours; $10 to $500 fine is the penalty for failure to do this.



KING EIGHT CYLINDER

for the WIDEST RANGE *of* SERVICE

Only an EIGHT *can compete with an* EIGHT—
and there are but two Pioneer cars of this class

WHY the eight cylinder motor gives the quickest acceleration, practically eliminates gear-shifting, takes all but the steepest hills on "high", banishes vibration, develops great power and speed at small fuel expense, and adds years to the car's life, is explained in the words—CONSTANT POWER.

The Eight has *four* power impulses per revolution; the Six, *three;* and the Four, *two.* An Eight's power strokes *overlap at the point of their highest efficiency.* No gaps between strokes to be bridged by the momentum of a heavy, power-wasting fly-wheel; no high and low power periods to cause vibration and wear, but a constant, swift flowing stream of energy, composed of strokes received at right angles, instead of vertically, and giving a smoothness of power that relieves mechanism and tires of the "killing" effects of violent power strokes. In accessibility the King's motor surpasses all other engine types.

The King is the *original* popular-priced Eight and has been in operation the world over for more than a year. A demonstration in the new Model E is a most necessary part of your "before buying" experience.

60 Horse Power, 7-passenger Touring Model, $1350

KING MOTOR CAR COMPANY :: DETROIT

The Junior Monarch Hay Press

is guaranteed to excel in workmanship, capacity and durability any baler made. Longest bridge. Easiest to feed. Requires least power. Makes most popular bale—any size desired. **Horse or Belt Power. Awarded Gold Medal P. P. I. E.**

Established 1862

Junior Monarch Hay Press Company. San Leandro, Cal.



A Man, a Cow and Two Bulls.

What an ideal in Jersey breeding has done for a man, his family and the State, and the importance of his work to future Jersey breeders.

[Written for Pacific Rural Press.]

Jersey breeders are wakening up. Such is the alarm that is being sounded all over the United States. It is mentioned in the farm press; it is common gossip among the breeders themselves; and it is being publicly displayed at the livestock shows.

It seems apparent that the aroused interest is more directly traceable to type than any other one thing. While the Jeresey known as the Island type, is still admired by many, the man who rubs elbows every day with the producer of butterfat on the farm believes the heavier, more Americanized Jersey is the one to hook up with.

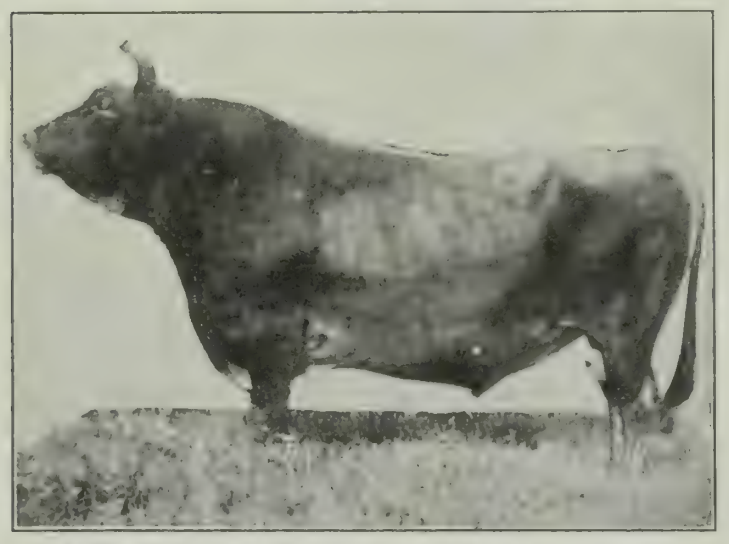
In this change California holds a unique position, largely due to the fact that Jersey breeding here has been in the hands of men who, as dairymen first, last, and all the time, required and bred Jerseys for utility. With them breeding has been no gentleman's pastime or hobby. Perhaps this can be best described by a remark dropped at the Panama-Pacific Exposition last fall by a prominent Eastern advocate of another dairy breed. .

As a group of California Jerseys was being led into the judging ring this man said: "Those are the first real dairy cows I ever saw in a Jersey show ring. That is the type the man on the milk stool will whoop it up for. California breeders are to be congratulated on being so well down to earth on this matter of dairy type."

This type, which promises to come into national favor, has been developed by men who were dairymen as well as breeders; and there is no better illustration of this than the story of N. H. Locke. He has been one of the foremost advocates of the purebred Jersey in recent years in this State, and is essentially a dairyman and always has been.

A Jersey Crank.—He admits that he is a crank of the first water on Jerseys. But he isn't. He's simply a crank on dairy type. Way down in his heart he has no more use for a Jersey that doesn't fit his ideal of dairy type than he has for any other breed.





Mr. Locke, his ideal cow, Empress Lass, and King's Valet, the bull that perpetuates the dairy type in the Locke Jerseys.

We knew this when we started for his ranch at Lockeford, San Joaquin county but we wanted to learn where this ideal originated. And here is his story.

In the early 60's he began to form conclusions as to what a cow should look like if she was to give the largest amount of butterfat at a minimum cost of production. His father, on whose ranch he worked, preferred Durhams, for milk as well as for beef. In fact "father was as touchy about Durhams as I am about Jerseys," he now recounts.

And then young Locke got interested in Jerseys. He had an idea that Jersey bulls crossed on those Durham cows would result in a better producing cow and, "when I'd say, once in awhile, 'let's get a thoroughbred Jersey bull and breed up,' father would go up in the air."

But after the management of his father's estate was placed in his hands in 1887, he tried out his pet theory as soon as possible, with the result that the first two-year heifers from the Jersey cross were better producers than their dams.

Having satisfied himself as to value of the cross he continued to use registered Jersey bulls till 1899 when the estate was settled. During all of that time he was trying to breed a type which fitted his ideal, not for beauty, but for production.

At that time the other heirs said "You've got to buy the Jerseys" so he did. His share of the land consisted of 35 acres of upland and an equal amount of bottom land.

In 1904 he bought his first registered females. One, Dereen C. Marigold, was first and grand champion cow at the California State Fair that year and the other, Lady of San Joaquin, was second in the same class.

A Bull Dairy.—He had a surplus of bulls so went to the State Fair as exhibitor. His winnings consisted of one blue ribbon and a lot of experience. In 1906 he got three ribbons and in 1909 he made still further progress in prize winning. But all this time he had only showed young stock and one of his competitors took advantage of the situation to tell prospective purchasers that "Locke runs a bull dairy."

When this finally reached Locke there was one mad man on the State Fair grounds and right there he promised to bring out a show herd the next year that would make their mouth water.

Unconsciously his competitor had done him and the breed a service, for he would no doubt still be searching for his ideal of a Jersey cow if it hadn't been for that resolve to beat the other fellow in 1910.

So he began a silent search for Jerseys, finally making a trip to Washington, where they were holding the Alaska Yukon Exposition. The man who judged the Jersey show there, tied the grand championship ribbon on a big, light colored, young cow with wonderful conformation and having the accepted dairy type. Her name is Empress Lass.

Finds Ideal.—That cow suited Mr. Locke to a T. In fact he had been looking and hoping for just such a cow for about 50 years and when he saw her he cut the strings to his pocketbook and bought her. While in Washington he saw something else to his liking; he found two Jersey bulls, one King's Valet and the other Borello's Golden Laddie. Again he had found his ideals and put faith and money into it.

Altogether on his northern trip he secured 18 head. After the California State Fair of 1910 nobody could call his, "a bull dairy," because he carried off 24 of the most valued prizes; and since then has always showed a full herd of Jerseys.

At Last a Foundation. — Don't imagine though that he was satisfied with blue ribbons alone. While he now owned a moderate sized herd of purebreds and a good sized herd of highly bred grades there were after all only three animals in his possession that just exactly suited his ideal of a dairy animal. So after almost 50 years he had a foundation to his liking; one grand champion cow and two grand champion bulls.

For the last six years he's been building around that type. "It's a big type" he explained. "Can't get them too big for me if they have the dairy type. King's Valet weighs 1600 pounds. His son, Valet's King, out of Empress Lass, weighs 1700 pounds and will make a 2,000 pound

Salt a Necessity for Dairy Cows

Deprived of It for Long, They Suddenly Suffer Complete Breakdown.

EXPERIMENTS REVEAL INTERESTING FACTS.

Salting of Hay in Stacking or Baling Now Considered Excellent Plan.

Experiments conducted at the Wisconsin State Experiment Station prove conclusively that salt should be supplied to dairy cows unless the ration furnishes a sufficiency thereof. It is calculated that the minimum quantity in the food to keep a cow of 1000 lbs. live weight in flourishing health is that which is equivalent to ¾ oz. of salt per day, and that a cow in milk needs as much more as will restore the proportion removed in the milk, namely, a little over ½ oz. of salt for every 20 lbs. of milk.

The conclusions from these experiments are briefly as follows:

"In every case the cows exhibited an abnormal appetite for salt after having been deprived of it for 2 or 3 weeks, but in no case did the health of the animal, as shown by the general appearance, the live weight, or the yield of milk, appear to be affected until a much longer time had elapsed. This period of immunity varied with individual cows from less than a month to more than a year. There was finally reached a condition of low vitality in which a sudden and complete breakdown occurred. This stage was marked by loss of appetite, a generally haggard appearance, lusterless eyes, a rough coat, and a very rapid decline in both live weight and yield of milk. If salt was supplied at this period recovery was rapid. In one case potassium chlorid was given instead of common salt (sodium chlorid). Considerable of the potassium salt was eaten, though cows ordinarily refuse to touch it, and recovery followed as quickly as when common salt was supplied—evidence that not the lack of the sodium but the lack of chlorin was responsible for the troubles. The breakdown due to the lack of salt usually occurred after calving, when the milk flow was heavy, and generally the cows giving the largest amount of milk were the first to show distress."

Farmers who salt their hay when stacking or baling have found the plan an excellent and profitable one. The salt more than pays for itself in the increased weight of the hay, and besides improving the feed, it removes the danger of musting by checking the growth of molds when the moisture content of the hay is high.

Twenty pounds of salt to each ton of hay should be used, which should be sprinkled on by hand as each three feet of the hay is stacked.

Tagus Ranch

BREEDERS OF PUREBRED

Holstein Cattle
Polled Angus Cattle
Duroc Jersey Hogs

Tagus Switch, Tulare Co., Cal.

Registered **Duroc - Jerseys**

at reasonable prices.
Now is the time to get started right in the hog business. I have a choice lot of gilts and young boars; also weanlings. Write for prices.

R. R. HOUSTON,
Byron, California

bull when he gets older. Sure the Jersey is going to be typey, but not the Island type."

That's as near as he can put into words what is his idea of type. But he can show it to you now, not only in Empress Lass, but among the registered cows in his herd of over 150 head as well, for he has been making progress in type building since 1910.

This is directly attributable to the prepotency of his herd sires. As we walked through his wonderfully rich, sub-irrigated pastures some comment was made on the udder one cow carried. "Yes, that's a King's Valet udder and there's another, and another over there." As we went through that great herd we soon learned why this man has formed such a deep appreciation for his bulls. They sire the kind of dairy cows, every dairyman is striving for, the nearest thing to Empress Lass that Mr. Locke has ever seen. But she is still his idol.

Results Speak.—So far as the origin and accomplishment of his ideal, that is Mr. Locke's story. How the value of his work has spread to all parts of the State is best shown by his general and successful show career. There he has exhibited his ideal. There he has unconsciously directed in a large measure the future course of the Jersey breed in this State.

Besides the satisfaction that comes with accomplishment, his venture in purebreds has brought him financial returns. To the 70 acres of land with which he started in 1899, he has added, till he now owns almost 400 acres of bottom land and about the same of upland.

"As fast as I sold cows, I put the money into land. That's been my game" he says, "but I've sold only three registered cows. Always I've sold grades, filling their places in my milking herd with the younger animals as they came fresh."

The foundation work is about all done. The grades have been practically replaced with purebreds and no more land is needed. Next will come the trimmings, so to speak, the new modern dairy buildings and the official test work.

But Mr. Locke hasn't founded a great Jersey enterprise alone; he has also founded and raised a family, fundamentally right on dairying and breeding matters. It was therefore appropriate that the N. H. Locke Co. should be incorporated and the stock held by members of the family as is now the case.

And by carrying on the great work started by their father, the family may rest assured that when the history of the transformation of the Jersey cow is written, their father, his pet cow, and his two favorite herd sires will receive no inconspicuous mention.

SHEEP ON GRAIN FARM.

[Written for Pacific Rural Press.]

From a flock of 157 ewes and their lambs, N. L. Tomlinson of Stanislaus county marketed $1000 worth of wool and mutton two years ago, having grown them largely on what would otherwise have been waste.

Mr. Tomlinson has a large acreage of grain land, through which laterals of the Turlock Irrigation District run. It is primarily to clean up the ditch banks that the sheep are kept.

During spring months the sheep are pastured on a small piece of alfalfa; and this is also headquarters for them at night during the balance of the year. Besides cleaning up the ditches they are pastured on grain stubble in summer and fall, taking care of themselves without a herder during the entire year.

With this arrangement of feed, the lambs mature rapidly, lambing usually being done in January though delayed till March this year. The local butchers always furnish an outlet for the lambs because Mr. Tomlinson has always kept good rams, mostly of the mutton breeds.

To begin with he had Merino ewes. These were bred to Dorset buck, the ewes from this cross being bred back to a Merino buck. The next buck was a Shropshire and last year an Oxford Down buck shared honors with a Shropshire. Each buck is used on the flock two years. This cross-breeding has developed a fine band of ewes, it being Mr. Tomlinson's custom to select only the best ewe lambs for his breeding flock. While only a side line of his farming, sheep on this ranch are more than paying their way.

MEAT FROM LUMPY-JAW CATTLE.

To the Editor: Is it safe to eat meat from a cow that had lumpy jaw? Are butchers allowed to sell it?—W. G. C. Tranquillity.

[It is safe to eat the meat from a lumpy-jawed cow if you cook it thoroughly. The disease which causes the lumpy-jaw may or may not be extended throughout the system of the animal. A veterinarian can easily find it if it is.

Butchers in country towns are not subject to any inspection other than what the town governing body may impose. Large cities have inspection departments, and the Government has inspectors at packing plants which make inter-State shipments. These inspectors will pass a lumpy-jawed cow if the disease is not shown in the carcass; but they will always condemn the head.—Ed.]

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that King Segis Wayne Pontiac—a son of the Great King Segis Pontiac, from a 30.92-lb. 4-year-old daughter of Sir Veeman Hengerveld, will be sold. A beautiful individual, seven-eighths white. About 20 animals are in calf to him.

WRITE FOR CATALOG.

Jas. W. McAlister, Chino. Sales Manager.

Col. B. A. Rhoades, Los Angeles, Auctioneer.

HILLCREST STOCK FARM

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FOR SALE SINGLE OR CARLOAD LOTS



KING LANCASTER,
Son of King Edward, Grand Champion Bull California State Fair 1909, 1910, 1911. The only Bull 3 times Grand Champion at State Fair.

My range-raised bulls this year are the finest lot I have ever had.

THEY HAVE GRAND CHAMPIONS BEHIND THEM.

With the Livestock Men.

DIARYMEN AND DAIRYING.

Mayor Rolph of San Francisco has started a registered Jersey herd.

Three dairymen of Tulare county paid fines last week for running insanitary dairies.

W. W. Stice of Tulare sold his 22 Holsteins and dairy equipment last Saturday.

The N. H. Locke Co. of Lockeford recently sold three registered Jersey heifers through D. O. Lively.

John Baron of El Centro recently sold 100 young cows averaging $77.50 per head.

Modern dairy barns and silos have recently been erected on the Greer ranch near Turlock.

The University Farm is putting out a 3½ pound family cheese to be shipped by parcels post for $1.

Five acres of barley filled a 67½-ton silo, tramped down by four men, for S. Spyres of Modesto—13½ tons per acre.

The Chico grand champion Holstein cow is Homestead Girl Wigertje owned by the Henderson Co. of Elliott.

A. W. Morris and S. Lawson have in operation a new $6,000 pasteurizing plant large enough for the neighbors too.

The Alpine Evaporated Cream Co. wants to reopen their Hollister factory if they can sign up 20,000 pounds of milk daily.

State Veterinarian Chas. Keane is receiving numerous advance requests for tuberculin testing. This cannot begin till October 1.

Over 900 cows have been signed up for the Orland Cow Testing Association. Foreign cheese is getting scarce in California.

The Red Bluff Creamery has installed a steam pasteurizing plant and will pasteurize all cream. They are putting out about 750 pounds butter per day.

Two Guernseys were recently shipped to the Hawaiians; a young bull from A. B. Humphrey and a heifer from Calla Grove Farm, Manteca.

Corn and oats two parts to one, fed to calves right after their milk at the time of changing from whole milk to skimmed, is recommended by the Mo. Col. of Agr.

H. T. Harrold of Orland bought two purebred Jersey cows from S. F. Williams of Chico for $1000 May 26. The sale came as a result of the exhibition.

The secretary of the Stanislaus County Cow Testing Association, recently sold three grade cows for $700. The buyer paid this high price on account of their records in the testing association.

Bacterins, serums and the like for contagious abortion are showing good promise, but need much more experimental work before their true value is determined, says the U. S. Dept. Agr.

Joseph Colosio of Modesto recently sold to the Geer Bros. of Turlock 90 head of Holsteins for $4950. Mr. Colosio will go this summer to Wis., Mich., and Ia. to buy a purebred Guernsey herd.

The E. Clemens Horst Co., of San Francisco recently established a Holstein dairy on their ranch near Los Molinos. They now have about 60 head milking, besides 200 young heifers that will have their first calves next spring.

The Stockton State Hospital is using four registered Holstein bulls on their grade herd of dairy cows. They are Col. Colantha Pietertje, Cloverleaf Prince of West Lawn, King Mercedes Hengerveld and Blithdale Hengerveld.

J. A. Goodall of Turlock reports that the cow Euzelia of Venadera finished her first year's official test with 402 pounds of butter. Another cow to recently complete an annual record was Bonanza Fox which gave with her first calf 402 pounds of butter.

C. A. Starkweather, president of the Stanislaus County Cow Testing Association, says that dairymen in that district are supporting the association better than ever; and that as a result of the testing the members are materially increasing the income per cow.

A well known auctioneer in the San Joaquin valley is authority for the statement that dairy cow values are lower there than they have been for two years. He says the condition is due entirely to the price of hay, many farmers not having learned that to get cows that pay one must breed them up by using a good bull.

Thirteen contestants entered cheese which scored over 90 in the California Butter and Cheese Scoring contest. J. A. Scaroni of Santa Cruz scored 95; Clarence Ebbe, McArthur 94½; Victor Britor, Chico, and John Reber, Bieber, 94; C. Kolbeck of the University Farm, Davis, H. C. Watson of Bieber, and A. J. Davis of Gilroy, 93½. The next scoring will be held in July.

Twenty-eight creameries sent butter which scored 90 or over in the May California Educational Butter and Cheese Scoring Contest. The highest award was 95 points to L. Larsen of the Sunset Creamery, Loleta. Three scored 94; Los Angeles Creamery Co., Hanford; Visalia Co-operative Creamery; and the Valley Flower Co-operative Creamery, Ferndale. Among the 28 are five co-operative creameries.

Mr. Dairyman or Breeder

Do you want to improve the butter-fat output of your herd? If so, I have just the bull you want.



Peterje Cornucopia Creamelle.

His dam on her first test made a record of nearly

25 Pounds Testing 4.7%

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REGISTERED DUROC-JERSEYS—Fall boars and gilts. Weanlings sired by an excellent son of the 1020-pound Royal Muncie. We have pigs sired by this boar weighing 240 pounds at 7 months, and out of line bred Golden Model, Crimson Wonder, Orion, Chief, and Colonel sows. For information write Haden Smith, R. 1, Box 84D, Woodland, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

WANTED—Young married man to raise, keep records and fit for show Pure-bred Poland China Hogs. Salary and length of time engaged will depend entirely on the results you are able to show. Do not apply unless you are a good man with practical, successful experience and have a strong appetite for plenty of work and long hours. Geo. A. Smith, Corcoran, Cal.

REGISTERED DUROC-JERSEY — Weanlings, shoats, gilts and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES — World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey Prop., Escalon, San Joaquin Co., Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

DUROC-JERSEYS—Some great weanlings of both sexes by "RIVER BEND HIGH MODEL." Improve your herd by introducing this blood. RIVER BEND FARM, St. Helena, Cal.

FOR SALE—Fancy belted Hampshire hogs. Well belted young sows and boars, registered. Prices reasonable. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonsall, California.

REGISTERED BERKSHIRES — BOARS—5 and 6 months old, $15 and $20 each. Also a few year-old ones. All pure-bred animals. G. A. Casey, San Jose, Cal.

DUROC-JERSEYS, REGISTERED — FANCY WEANLINGS, PRIZE WINNING SIRE—$7.00. Either sex. June delivery only. O. P. Burns, 1108 O Street, Fresno, Cal.

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POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINA SWINE — Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

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REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

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REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, $10. H. E. Boudier & Son, Napa.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRE PIGS — Write or call Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM — Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED POLAND CHINAS—Large type. C. M. Stetson, Route "A," Ceres, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

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DAIRY CATTLE.

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THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TWO REGISTERED HOLSTEIN young bulls for sale. Best producing blood, Sleepy Hollow stock. John Kitchen, Jr., Lafayette, Cal.

HOLSTEIN BULLS out of A. R. O. cows, sired by a son of King of the Pontiacs. Prices reasonable. J. H. Harlan Co., Woodland, Cal.

REGISTERED HOLSTEINS—32 high-grade Holstein heifers coming fresh this Fall for sale. E. E. Freeman, Route B, Modesto, Cal.

TWENTY-EIGHT high grade yearling and two-year-old Holstein heifers for sale; some bred. K. W. Abbott, Milpitas, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young Stock for sale. W. J. Hackett, Ceres, Cal.

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JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. G. G. McFarland, R. 2, Tulare.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

REGISTERED JERSEY BULLS from Register of Merit cows. D. F. Conant, R. "B," Modesto.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BREEDERS OF A. R. O. Holstein-Friesian cattle exclusively. Dirk Dairy Farm, Lemoore.

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REGISTERED JERSEYS — Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

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A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED HOLSTEINS—Golden West Herd, D. & H. Rowles, Modesto.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

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REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells live stock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb. boar. Ed E. Johnson, Turlock, Cal.

SWINE BREEDERS AND STOCK.

Over 500 California boys are raising purebred pigs in competition.

About $4,000,000 of California money goes to Idaho and Utah for live hogs every year according to D. O. Lively.

Peters, Lamson and Walker recently bought a Duroc gilt from Iowa, sired by Cherry Chief and out of a Proud Col. dam.

R. K. Walker expects to visit the leading eastern Duroc herds in July to get "some animals of the best type and breeding I can find."

Glenn county is getting another run of hog cholera. There are others. A survey of the situation will be made and a campaign of cholera extermination started.

Wylie Giffen, of Fresno, has recently purchased five registered Duroc sows and a boar from John Daggs of Modesto. They will be put on Mr. Giffen's ranch in Merced county as a foundation herd.

Both the Duroc and Poland China Futurities at the 1916 State fair at Sacramento will be new features. Many Duroc and Poland China breeders have saved some choice pigs from their spring litters for these classes.

A shipment of Berkshires from the Oak Grove Dairy Farm of Woodland and from A. B. Humphrey of Escalon has been put on the unplanted orchard land near Monroeville owned by the Kuhn people and now managed by W. S. Guilford.

BEEF, SHEEP AND HORSES.

The Whitehall Estates of Tracy recently bought a registered Hereford bull.

D. O. Lively is starting a 400 acre purebred Hereford cattle farm near Palo Alto.

The Porterville Alfalfa Co. recently bought 160 purebred Shorthorn yearlings from the Bay district.

An organized hunt is proposed for a bear which has been killing Starr Valley cattle.

The University Farm recently bought a Percheron stallion and seven fillies from the Paicines Ranch of Hollister.

Contagious abortion on the cattle ranges in some instances takes half the calves according to the U. S. Dept. Agr.

Two South American cattle breeders have been selected as judges for the International Fat Stock Show at Chicago.

The Elliott Brant Ranch of Owensmouth bought five Shorthorn bulls for $1500 from H. L. and E. H. Murphy of Perkins, May 20.

O. N. Shaw and Powell & Shaw of Holtville shipped several hundred lambs to the East recently, having sold them at $7 each, weighing 75 to 80 pounds.

D. O. Lively recently shipped 14 two-year purebred Hereford bulls to the Haleakala ranch in the Hawaiian Islands. He has also sold purebred swine, sheep, goats, and dairy cows to South America.

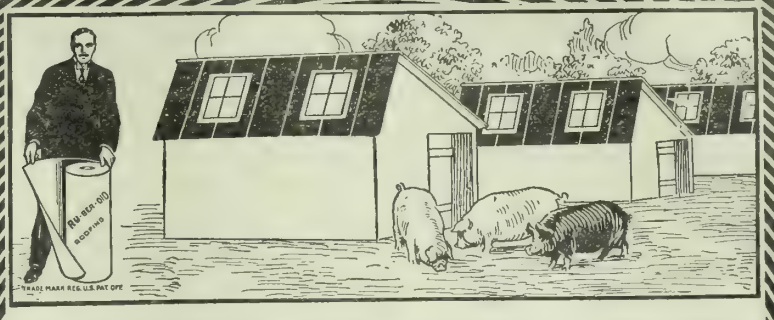
MISCELLANEOUS.

The Farmers Union of Stanislaus county proposes to erect a market pavilion in Modesto in which to hold regular private livestock sales on specified days of the week.

A Western Pacific stock train recently carried 28 carloads 783 miles from Sacramento to Salt Lake City in 30 hours, including stops at Marysville and Portola, where five of the cars were picked up at each place.

A new purebred stock firm is being organized under the name of Elder and Starkweather, which will breed sheep, beef cattle, and hogs on a ranch of two thousand acres on the Haggin grant, north of Sacramento. To start, about 200 purebred sheep (Lincolns, Shropshires, and Hampshires from England and Corriedales from Australia) have been purchased and are on their way. Also about 200 Lincoln-Rambouillet cross have been secured from eastern Washington. A car of purebred Hereford heifers and bulls is coming from the east; also some Berkshire and Duroc Jersey swine are to be shipped in.

The Toyon Farm Herd at Los Altos includes Finderne Netherland Fayne 2nd. The lowest producer among her first four dams made 28 pounds butter as a 2-year-old. Her dam and sire's grandam still each have better than 37 pounds, writes De Lancy Lewis.



Better Hogs Mean Bigger Profits

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[Subscribers wishing an immediate reply should send money order for $1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

BLOODY URINE AND SPASMS.

To the Editor: Of 30 calves, under two months old, which became sick, 13 died. In one lot, their urine was blood color and sometimes black as ink. They urinated often and much. It would sometimes be clear in the morning but bloody by noon. They craved water but had no fever. Their bowels were in perfect condition. They were greedy for milk until a few hours before death, which came in spasms about 24 hours after first symptoms. Those that recovered, shed hair in spots, principally on neck and shoulders. They seemed tender to touch on back over kidneys. In the second lot, none died and the urine was all right but a similar trouble affected the bowels. We have used the same feed successfully for 30 years. Everything is sanitary—plenty of wood ashes and creosote are used around the airy barns and corrals.—T. E. B. Gonzales.

[Personal autopsies would be the only way for me to make a positive diagnosis in this case. However the symptoms point to the creosote poisoning. Calves are prone to lick foreign substances, and they have probably taken up enough of the disinfectant to account for their death.]

HORN STUBS DO NOT HEAL.

To the Editor: On a bull dehorned a month ago, one side heals very slowly. The other is open and smells bad. Have been cleaning it with peroxide and carbolized water, then drying and using healing powder.—W. A. L., Turlock.

[Use pine tar freely on the horn stubs daily.]

HORSE LIES DOWN IN HARNESS.

To the Editor: A young mare often lies down while in team and seems in pain. Is usually all right while working but trouble comes when she stands. She eats well.—W. A. L., Turlock.

[Feed the mare one pint common molasses twice a day.]

HOGS EAT DIRT.

To the Editor: A herd of hogs in a half dry barley field has enough to eat but they eat a lot of dirt and sand, then die.—P. L., Bakersfield.

[This is depraved appetite due to lack of mineral substances. Give them all the charcoal they will eat as well as slaked lime.]

DOES NOT COME IN HEAT.

To the Editor: A young Jersey cow had her second calf Feb. 15 and cleaned all right, but does not come in heat.—A. C. N., Edenvale.

[Let this cow run with a bull and see if she does not come around of her own accord.]

CUT TEAT INFECTED.

To the Editor: On a heifer whose teat was cut off three weeks ago, the wound healed but the canal of the teat is sore, the milk flow stopped so have to use a tube. Sometimes I can squeeze a little bloody pus from it.—R. P., Stockton.

[This teat will always be worthless. To control the infection give potassium iodide in 2 dram doses, twice a day, dissolved in water.]

MARE INJURED IN FOALING.

To the Editor: The womb came from a mare after foaling Mar. 22. We put it back and kept her in a sling nine days washing with lysol to prevent inflammation. A week ago she began lying down most of the time. When she would get up she would be trembly, stiff, weak in the back, seemed trying to urinate five or ten minutes, then would step out very cautiously, breaking down in the back at times, lifting her hind feet as if string halted, is stiff in front, and short winded after getting up.—R. N. F., Copperopolis.

[The mare will probably succumb to the infection she has. Give one dram fluid extract nux vomica every six hours and 2 ounces fluid extract echinecia twice a day.]

BOIL ON MARE'S NECK.

To the Editor: A collar gall on top of a mare's neck developed into a boil. Have been syringing with castile soap and then with a Kreso solution, then applying a tablespoonful of powdered alum. Today I removed a spongy lump.—W. J. W., Kern.

[There is danger of a fistula forming. Paint the cavity daily with tincture of iodine.]

HORSE HAS WORMS.

To the Editor: My horse has worms and a ravenous appetite, and is losing flesh. Food does not seem to be assimilated. Hair is dull.—Sub., Los Gatos.

[Give the horse the following dose daily for six days: iron sulphate 2 drams, tartar emetic 2 drams, arsenic 5 grains. Then give one quart raw linseed oil.]

COW'S FEET SORE.

To the Editor: Last winter I apparently cured a sore between a cow's toes but this spring the same foot and another became affected and have an offensive smell. The corral is not muddy even in winter.—H. C. McK., Ukiah.

[This is foot rot. Stand the animal in a 2 per cent solution liquor cresolis compositus for an hour twice a day.]

RED URINE IN CALVES.

To the Editor: Of twenty calves eating skim milk and barley hay and 30 acres green pasture with plenty of water, have lost four in the past few days and the rest seem listless. The bladders of the dead ones were full of red water and the kidneys were not normal. Calves on hill pasture are doing fine.—A. C., Paicines.

[This is either blackleg or contagious pleuro-pneumonia which a careful autopsy carried further than you went should reveal. For the former trouble, vaccine is efficient; for the latter sanitation is the treatment. See page 576, May 1 issue.]

SURFACE IRRIGATION EXPOSITION DRAIN PIPE.

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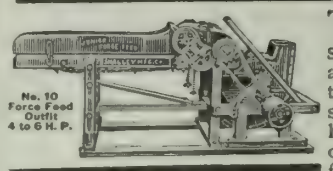
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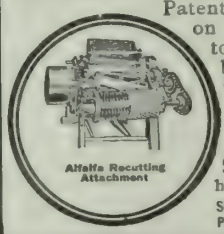


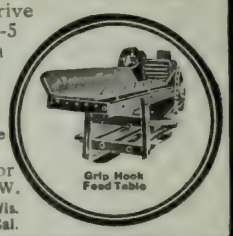
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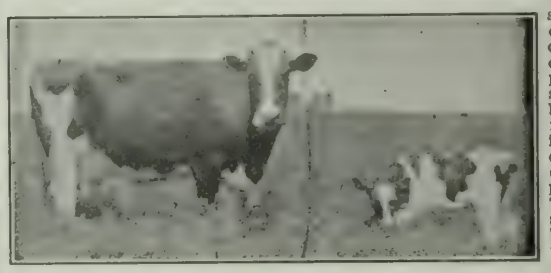
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ALFALFA MEAL FOR HORSES.

To the Editor: "What value has alfalfa meal for horse feed as compared with chopped or whole alfalfa hay?"—M. E. B., Acampo, Cal.

[Answered by Prof. F. W. Woll, University Farm, Davis, Cal.]

[I cannot see that alfalfa meal has any advantage over chopped or whole alfalfa as a horse feed; on the contrary, long hay is as a general rule preferable to either chopped or ground alfalfa for both horses, cattle, and sheep. The objection of the latter feed is, that they are dusty and more expensive than long hay. They can only be recommended as a part of the grain ration for horses when mixed with molasses or in the form of special molasses feeds, manufactured by reputable dealers, when sold at a fair price, say below that of wheat bran or rolled barley. Ordinarily, however, the best and cheapest plan is to feed long hay to horses, and let them do their own grinding. They generally have plenty of time and the necessary apparatus.]

FEEDING YOUNG CALVES.

To the Editor: What, how, and how much should I feed heifer dairy calves now a week old?—L. E., Stockton.

[Answered by F. Stenzel, Lorenzo.]

[Calves at that age should be fed whole milk until 3 or 4 weeks old, about 8 pounds (one gallon) per feed twice a day. Then gradually substitute skim milk and add a little cooked oil meal. Water, alfalfa hay, and grain should be kept before them at all times. The grain should consist of equal parts bran and rolled barley. When weather permits, they should be out in the sun.]

SWINE ON FRUIT FARM.

[Written for Pacific Rural Press.]

Purebred swine raising on a fruit ranch pays C. A. Cooley of Durham, Butte county. Mr. Cooley has been breeding purebred Poland-Chinas for six years and maintains a good-sized herd on his 67-acre ranch, which includes 30 acres of almonds, 23 acres prunes, and 10 acres olives.

By interplanting summer crops such as Egyptian corn, enough grain is grown for the hogs. This mixed in equal proportions with alfalfa meal and fed dry, is the main ration.

In years when fruit crops are short on the Cooley ranch, the income from the swine is doubly appreciated. In years of abundant crops the hogs dispose of waste fruit at a profit.

BERKSHIRES AT STATE FAIR.

The first Western American Berkshire Congress Show and Sale will be held this fall in conjunction with the California State Fair at Sacramento, Calif., Sept. 2 to 9. The California State Fair Board has agreed to make the premiums for Berkshires $600. To this is added $300 by the American Berkshire Assn. From present indications it looks likely that this will be the greatest Berkshire exhibition ever held in the West, surpassing even the great Panama-Pacific Berkshire show. Every Berkshire breeder in the West should begin now to select and fit one or more animals.

The Western American Berkshire Congress Sale will be held during the week of the show after the awards have been made; and many of the show animals will be entered in the sale, thus giving the buying public a chance to get prize-winners at their own prices. Selected animals from the greatest Berkshire herds in the West will be sold in this sale, each animal inspected and passed by a judging committee from the W. A. Berkshire Congress before being allowed to enter the sales ring. For further information write F. R. Steel, Sec.-Treas. W. A. Berk. Congress, Grants Pass, Ore.

CHEAP MILK COOLING.

[Written for Pacific Rural Press.]

An economical and practicable way of cooling milk to a lower temperature than is possible with well water is the one practiced on the dairy at the Stockton State Hospital.

Adjoining the milking barn at this dairy is the milk room in which a large coil cooler is located. Close by is a galvanized iron box, large enough to hold three cakes of ice. In the bottom of this tank is a set of pipe coils one end of which leads to the hydrant nearby and the other end to the milk cooler.

By keeping ice in the box at milking times, all of the water that goes through the cooler is brought to a low temperature by passing through the ice cooled coils in the box, thus greatly reducing the temperature of both the water and milk. The entire outfit is inexpensive and while not so cooling as brine, answers the same purposes under most conditions



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Shorthorn Bulls
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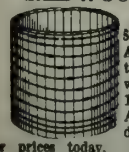
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Dear Sir:

This will acknowledge receipt of 2,200 cc. of your Hog Cholera Serum for which I wish to thank you for such prompt delivery.

We have been using your serum and virus the past year on more than 500 hogs and can truthfully say that we never have had such good success in vaccinating for hog cholera as we have had with your medicine. We have tried other serum and virus but have had poor success. With yours we have not lost more than 1 or 2% and in all these cases it has been partly our fault.

I wish I might impress the hog raiser that vaccination for this dread disease among hogs is the only sure and successful way to insure success. It costs so little and gives absolute immunity against cholera that it is the best insurance to be had and anyone raising hogs should not do without it.

I am more than pleased that you have a branch here in Los Angeles where we can get our serum fresh any day without sending east or even to Berkeley after it. Yours very truly,
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LICE, MITES AND FLEAS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

One ounce of prevention is better than a pound of cure in the prevention of lice and mites.

While chickens do breed lice with very little encouragement, they can be kept entirely clean and free from all the pests that assail them. During the molting season is a good time to commence. This should be done by dipping every hen in some good dip, such as Kreso Dip, No. 1, or creolin and water. These things do not soil the feathers, but if used right will kill every louse.

After that if the hens are dusted with a good insect powder once in two weeks regularly there will never be a trace of lice on them. Now this is not such an awful big job unless a man keeps a flock that runs into thousands, in which case he must find some easier method of keeping his hens free from these pests.

Where dropping boards are used this can be accomplished without touching the hens at all. Just paint the dropping boards with a mixture of pine tar, naphthaline flakes, and crude oil or black distillate, using all the naphthaline flakes the oil will absorb. After the hens go to roost if the odor can be confined by hanging something up in front it will be found more effective. Any good liquid lice killer will do the work if it is applied a few times until all the nits are caught.

Coal or wood ashes placed where the fowls dust themselves are also a good help, especially if some finely powdered tobacco stems are mixed with the dust, or powdered sulphur can be mixed in.

To Prevent Mites.—Never fail to spray the houses at least once a month in cold weather and twice a month in warm weather with crude oil or black distillate and crude carbolic acid in the ratio of one quart of the carbolic to one gallon of the oil. Now there are two ways of spraying, one is carelessly throwing the liquid on the boards, perches, and other places in the hit and miss style. After this, the mites still march along lanes that were missed and find the poor hens to feast on. A thorough spraying to be affectual, should take in the dropping boards, perches (under sides included), walls all around the sleeping quarters, and nests. If these places are sprayed right there will be no mites, but all knot holes and rough surfaces in perches and boards should be looked into carefully.

Fleas.—The same treatment will keep fleas down, salt water will kill fleas too, but it is very little cheaper than crude oil in most places and it dries up quicker than does the oil.

Lice on Young Chicks, Turks, etc.—The place to look for lice on young chicks, young turkey poults, etc., is on the head and around the throat. Take the poult or chick in your hand and go out into a strong sunlight, rub down the head the wrong way and the lice can then be seen as they are always black.

A small chick can stand but a very little of any kind of grease or oil so if you use a liquid remedy be sure to use it very carefully. A drop or two of oil of cedar put on the head will drive them away, but they will come back unless it is repeated. A good insect powder is really the safest remedy for chicks, well dusted over the head and throat, repeat at intervals and you will keep them away. If hens are dusted once a week, the chicks will be safe. If you notice chicks or poults with droopy wings look for lice if they act mopy, look for lice and be sure they are not hiding when you think there are none. Head lice are sure death to chicks. No matter how strong the chicks are to begin with, if lice are left on them they will pass in their cheeks.

MILK FOR POULTRY.

Milk is the most beneficial to hens when mixed in mashes, as then it can be served clean and counted as a meat-product. Creamery skim milk is worth five cents a gallon to any poultryman. Whole milk is not worth so much because of its higher fat content. When milk is skimmed by hand methods care should be taken to take off all the cream. Buttermilk is not so good for poultry as good fresh creamery skim milk, the University advice to the contrary. Whey is too good to throw away, but is less value than buttermilk; and when used should be neutralized by adding lime water to it in proportion of one quart to five.

Curd is perhaps the best form of milk that can be served to all young stock, including turkey poults, but it should be mixed with other foods as it is very high in protein and nearly all albuminoids. It is very easy to digest and chicks will eat a lot of it. Being so rich, of course it should be fed in proper quantities.

Nearly all forms of milk are better for a little sourness, but that does not mean that you can feed decomposed milk to young stock or old without causing a disturbance in the bowels.

SPOTS ON HENS' LIVERS.

To the Editor: My chickens have an epidemic, resulting in their death after a week or two of sickness. I find white spots on the liver. I feed my chickens twice a day on pure wheat, and pasture them all day in the open.—L. B. L., Suisun.

[Answered by Geo. H. Croley.]

[There are several diseases which show these symptoms, including aspergillosis and tuberculosis. However, as nothing is fed but wheat, which is practically all starch, the trouble is most likely due to lack of a balanced ration. These fowls should have some mash, including some meat and a variety of grains; also see that they have grit, shell, and charcoal, which are necessary to preserve their health.]

BROILERS OR ROASTERS?

To the Editor: I have 300 chicks of Easter hatch, Rhode Island Reds and White Leghorns. Will it be best to sell them as broilers or soft roasters, and what weight should the latter be? Is there any chance to sell pullets for laying?—Mrs. R. D. K., Richfield.

[The chances are that it will pay best to sell the Leghorns as broilers at 1 to 1¼ pounds and keep the Reds for soft roasters at 3 pounds. Our classified ads reach over 24,000 people, practically all farmers, or people who expect to farm soon. They are likely to buy your pullets quick. —Ed.]

SHRUNKEN BARLEY GREENS.

Many of our farmers have small shrunken barley; if they have not, they know who has; and as its grain value is about nothing, this can be used to furnish a constant and cheap supply of green feed with very little labor.

Soak the seed twelve hours in water, then pour the grain in boxes with draining space and cover the whole with sacks. It will need sprinkling and stirring every day until it commences to mat together, when it can be just sprinkled and opened up to the sun. At two or three inches high, feed the whole thing, a square foot per 25 hens. The barley need not be spread over three or four inches thick before sprouting. It can be let to grow until a foot high, and it makes more in green feed.

But it has been satisfactorily proven that if good feeding barley is soaked, and sprouted in a box without waiting for sprouts to turn green, it acts both as a grain and greens. In fact it is the better for egg production, but the sprouts should be a quarter to a half

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inch long. To get in just this particular stage takes about three or four days from time of putting in the box and it must be stirred and sprinkled. Stirring is to keep the barley from getting musty by overheating.

This is a great saving of labor over trying to get other field crops to grow in hot weather where there is little water, but it is not so economical in money as most of us must buy barley.

Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired **Heavy Winter Layers.** W. G. Smith, Prop., Corning, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396, Los Gatos, Cal.

BABY CHICKS—We will hatch during May and June, so order now and get them when you want them. All good strong youngsters from good layers. White and Brown Leghorns, Barred Rocks, R. I. Reds and Black Minorcas. Campbell Poultry Ranch, Campbell, Cal.

PLACE YOUR ORDER NOW for May delivery of White Leghorn Chix from Jackman's purebred, heavy egg-producers. You get the best at lowest price. $8 per hundred, $75 per thousand. Sunnyside Poultry Farm, R. 2, 1610 Vine St., Sacramento, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., INC., Poultry Supplies, San Francisco.

INCUBATOR CHICKS—White Plymouth Rock, White and Brown Leghorn. Highest class of stock bred to standard and to lay. If you are interested in the best send for catalogue. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

IT WILL INTEREST YOU—Our special circular and prices on R. I. Red, Black Minorca, White and Brown Leghorn chicks for June. Low price, high quality, prompt delivery, express paid. Roofden Poultry Ranch, Campbell, Cal.

BUFF ORPINGTONS—Eggs from high-class matings that have correct color, shape and large size. Choice exhibition and utility stock for sale. No chicks. E. J. TALBOT, San Mateo.

PLACE YOUR ORDERS with the SANTA CLARA HATCHERY for the different breeds of baby chicks and baby ducks. Joseph A. Bihn, Prop., San Jose, Cal., Route 6, Box 336C.

ORPINGTONS—BUFF AND WHITE—Black Minorcas and Carneaux pigeons. Breeding stock at half price as I am selling out. Mrs. Susan Swaysgood, Route 2, Pomona, Cal.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized, heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorcas, White Leghorn, stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

BABY CHICKS—Strong and healthy, from high-bred free-range White Leghorn stock. Prices on application. Western Hatchery, W. S. Waldorf, Petaluma, Cal.

HERE IT IS—White Rock baby chicks. $15 per 100. Hatching eggs, $1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ceres, Cal.

BABY CHICKS—Eastman's bred-to-lay Barred Plymouth Rocks from Hoganized and trapnested stock. Fairmead Poultry Farm, Fairmead, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and cockerels. B. C. Quessenberry, R. 4, Lodi, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs, $2 to $5. Chicks, pullets, cockerels. R. W. Stawetski, Route 2, San Jose, Cal.

TRAPNESTED LEGHORNS—White and Buff Stock Eggs, chickens. Arthur R. Schroeder, Box 179B, Mountain View, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

TURKEYS, DUCKS AND GEESE.

INDIAN RUNNER DUCKS—Imported Stock. Absolutely Pure-bred. Tested Layers. Breeding pens. 6 ducks and 1 drake, or separately. Fancy stock at reasonable prices; hatching eggs. W. R. Anderson, Lafayette, Cal.

HART'S BRONZE TURKEYS AND EGGS—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

MAMMOTH BRONZE TURKEY EGGS from selected stock. Also young Toms. M. M. Reiman, Planada, Cal.

PEKIN DUCK EGGS for hatching, $1.00 per dozen. L. D. Collins, R. F. D., 54G, Denair, Cal.

PHEASANTS—Golden and Ringneck. Eggs from April on. T. D. Morris, Agua Caliente, Cal.

HARES AND RABBITS.

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BELGIAN HARES—Young stock for sale. Hurd Bros., St. Helena, Cal.

INDIGESTION KILLS HENS.

To the Editor: Where can I get a book on chicken diseases? My chickens have diarrhoea. They have good wheat and pure water; their droppings are whitish. Some have died.—A. Z., Hylton, Nev.

[Answered by Geo. H. Croley.]

[We have a book, "California Poultry Practice," which contains a chapter on diseases of fowls, and remedies. In addition, it teaches how to care for fowls so as to prevent disease. If wheat alone is fed, this is probably the cause, as wheat is very starchy; fowls must have a balanced ration, such as mash, including some meat and a variety of grain; they must have a constant supply of grit, shell, and charcoal, which are necessary to preserve their health. Make proper change of food, and then for first week add 1 teaspoonful of sulphate of magnesia to every quart of drinking water.]

BUTTE COUNTY EXPOSITION.

The Butte County Spring Exposition at Chico May 22-28 which began last year as part of a street carnival, turned the tables on the carnival this year. Agriculturally, it was a livestock show represenative of the entire Sacramento Valley. Beef, hogs, dairy cattle, and horses made strong high quality classes. At the California Swine Breeders' Sale May 24, Durocs seemed as a rule of the best quality, and sold at highest prices, a sow having sold for $155. Good ring management was shown, in that information as to pedigree and show record was always quickly available. A few of the offerings showed that inferior specimens of the breeds had been used for foundation instead of being butchered before they could harm the purebred industry by breeding.

The C. L. Leonard Jersey sale brought $1780, or an average of $118. The Bank of Orland took several for its livestock clients. The highest price was $177.50 for a cow.

There were 300 awards to competing livestock. Cattle entries included Jerseys, Holsteins, and Shorthorns. Shorthorn honors were divided between the Brighton herd of the Murphy boys of Perkins and W. H. Hammond of Chico. The grand champion bull is the 2000 pound Colonel Courier recently brought from the East by the Perkins'. The grand champion female belongs to Hammond.

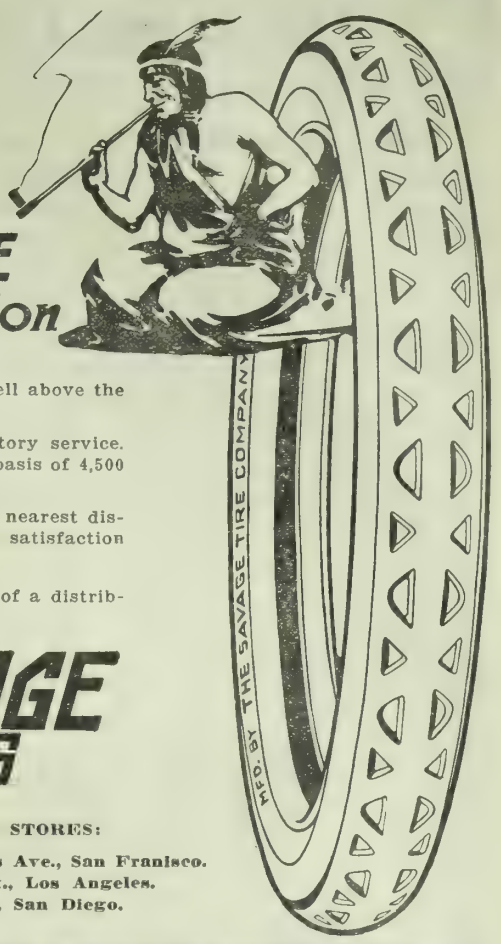
All sheep prizes went to J. G. Wannop of Chico for Shropshires.

Percherons and Shires were represented. Percheron prizes went to local breeders; Shire prizes to the Black Hawk Stock Farm of Burlingame.

Most of the Holstein awards went to the Henderson herd of Sacramento. Competition was keenest in the Jersey breed where J. B. and J. E. Thorp of Stockton, S. F. Williams of Chico, and C. L. Leonard of Glenn came out with colors flying. The grand champion bull is Alva Lady's La Foss Boy owned by Williams.

Berkshires, Poland Chinas, Durocs, and O. I. C.'s were entered for 96 prizes. Three of these prizes were for the best hog of any breed, age, or sex raised by a Butte county boy or girl. C. B. Cunningham of Mills won all O. I. C. awards. Berkshire prizes were well distributed between A. L. Stephenson of Los Molinos, the Murphy's and Jas. Mills Orchard Co. The biggest competition was in Durocs. The high winners belong to J. B. and J. E. Thorp, Stockton, Rucker and Coppin of Fair Oaks, J. K. Fraser of Denair Stanislaus county, and L. D. Collins of Denair. S. F. Williams, C. W. Williams, C. L. Van Schoiak, and R. B. Huffman, all of Chico, drew the Poland China premiums.

The San Francisco Post Office prints lists of farmers who have produce for sale, but they do not distribute them so that people know the possibilities. We recently asked a number on the list, covering the State, and all mailable agricultural products, whether they had received any orders through this medium. They replied unanimously that it was no good.



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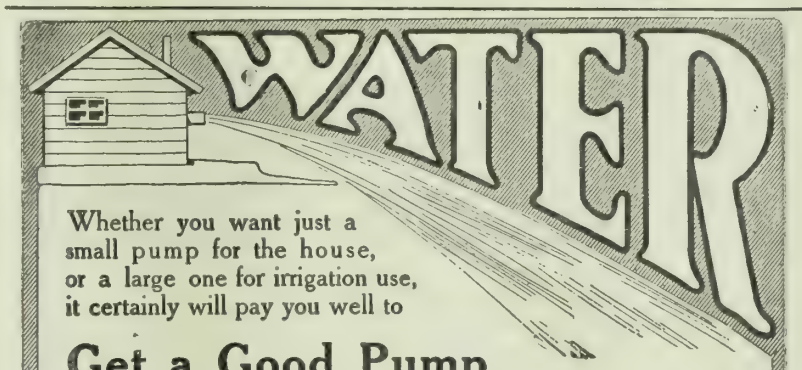
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The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends,

I had the privilege this week of attending a very pretty church wedding and as all of us are interested in weddings from one view point or another, I am going to write to you about it.

The church was beautifully decorated with palm branches and pink rambler roses, the roses being so arranged that they seemed to be growing on the palm branches. At the altar were Easter lilies and hydrangeas with more palm branches. The effect was not stiff, but more like a garden and with the exception of the Easter lilies, quite possible for any country church.

As the organist played the Wedding March, the bridal party entered, led by six young men as ushers, followed by six bridesmaids, two by two, then came the little flower girl, scattering rose petals and then the maid-of-honor who walked alone. The bride followed, escorted by her father to the altar where a groom and best man waited. During the beautiful marriage service, the organist played softly and at the conclusion of the service, which was not more than ten minutes long, again rendered the Wedding March.

The bride and groom led the bridal party down the aisle, followed by the maid-of-honor escorted by the best man and they in turn were followed by the bridesmaids, each escorted by an usher. The members of the families followed.

No wedding would be complete, without a description of the clothes worn—the bride of course was in white with long, white tulle veil and orange blossoms. The bridesmaids were dressed in the popular rainbow colors, each one different and wore little hats to match their gowns. They all carried old-fashioned bouquets made up of many varieties of flowers. As this was an evening wedding, the men all wore the conventional black. After the wedding, which many people attended, there was a reception and light supper at the bride's home to which the more intimate friends were asked.

Only the bridal party were seated here for refreshments, all other guests being served a buffet supper. The plan of not trying to seat everyone makes it easier to handle a large crowd.

Small boxes of wedding cake, tied with white tulle, were provided, so all the girl friends of the bride could have the privilege of dreaming upon it.

According to custom, the bride tossed her bouquet as she passed up the stairway to prepare for her wedding journey and the young lady who caught it is supposed to be the next bride. The guests pelted the bridal couple as they left with paper confetti and rose petals as well as rice.

Yours devotedly

Rosabella Best.

First Aid to Charity.—After charity has covered a multitude of sins the sinner ought to let them stay covered.—Memphis Commercial Appeal.

TO KEEP ON PUMPS.

Fasten a small piece of elastic two inches long across the heel inside, attaching the ends only. When the pump is drawn on, the elastic stretches tight over the ball of the heel and prevents its slipping. Or sew a piece of chamois or velvet ribbon to the lining inside the heel.

RAISIN AND RHUBARB PIE.

(Contributed.)

Have you ever eaten raisin and rhubarb pie? If not, you have missed one of the most delicious of pies, and here is the recipe for it:

2 cups seeded raisins chopped.

2 cups rhubarb, cut in half-inch pieces.

1¾ cups sugar.

Stir together and add one beaten egg. Place bits of butter on before adding the top crust. This is sufficient for two pies.

JELLY RECIPES.

[Written for Pacific Rural Press by Prof. W. V. Cruess, University of California.]

(See articles elsewhere.)

Loganberry.—Crush and place in double boiler without addition of water. Heat until fruit reaches about 190 deg. F. or over. Drain off free juice through jelly bag. Press out remaining juice and keep separate from free run. This cloudy juice may be filtered through the jelly bag. To each cup of juice add 1½ cups of sugar. Dissolve. Heat to boiling and boil until the liquid will "sheet" freely from the spoon or until 9 deg. F. above the boiling point of water is reached. Pour into glasses.

Orange-Lemon.— Six oranges and 3 lemons. Slice and barely cover with water. Boil over one hour without stirring, replacing from time to time the water that boils off. Drain off free run. Press out pulp; heat the press juice to boiling and let settle 24 hours. Pour off the settled juice and combine with free run juice. Add 1½ cups of sugar to 1 cup of juice. Boil till juice will sheet from a spoon or until 9 deg. F. above boiling point of water is reached. Let cool to about 180 deg. F. in the pot. Add a few drops of orange extract to flavor the jelly. Strain and pour into glasses.

Currant.—Crush, and add equal quantity of water, and proceed as with loganberries.

Other fruits can be made up by slight modifications of the above recipes.

Preservation of Jelly Stock.—Very often, due to the rush of the fruit season, or because sugar or glasses, etc., are not at hand, it is not possible to make as much jelly as desired. A way out of this situation is to sterilize the juice or jelly stock from the boiled fruit by placing it in fruit jars or cans and processing at 212 deg. F. as directed in previous articles on canning. Then, when it is desired to make jelly, simply open a jar of the stock, pour off the clear juice, add sugar, boil and make into jelly as you would the fresh jelly stock. Commercial jelly makers carry large supplies of stock in this way

ANNOUNCING ENGAGEMENTS

At one of the large universities the custom prevails of having the engaged girls of the senior class announce their engagements at the senior banquet, which is one of the events of senior week.

This year a unique plan was evolved. As the dinner progressed two big bunches of flowers were passed around the table. One of these bouquets was of orange blossoms, the other of bachelor buttons. As these passed, each girl selected a flower and by her choice announced her future state.

TO REMOVE GREASE FROM WALL PAPER

To remove grease and oil stains from wall paper, fold a piece of blotting paper, and in the fold spread French chalk. Fasten the edges together to keep the chalk from falling out. Place this over the grease spot and apply a hot iron, being careful to not scorch the wall paper. If the spot is not bad, apply a paste of French chalk and water. When dry, brush off and repeat if necessary.

PERSONAL HABITS.

When noted psychologists agree that personal habits are formed under the age of 20, it behooves all mothers to be exceedingly observing and critical (in a kindly way) of the young people of the household. Careless table manners, slovenly dress and incorrect speech indulged in during youth will be found very difficult of correction later in life.

BURNS.

For slight burns a solution of common baking soda and water will give relief, but for more severe burns sweet oil, lard, vaseline, or white of egg will relieve the pain. The object is to exclude the air so that burns should be covered as quickly as possible with soft cloths after applying the remedy.

DO YOU KNOW THAT

Life is a constant struggle against death?

The U. S. Public Health Service issues free bulletins on rural sanitation?

The defective citizen of today is ofttimes the unhealthy child of yesterday?

Every man is the architect of his own health?

It's the baby that lives that counts?

Tuberculosis is contagious?

The full dinner-pail, the open window, the clean well, make for health?

PREVENTING SPIDER WEBS.

To the Editor: Is there any way to keep cobwebs from the house? I brush them off and spray them two or three times a week, but they still come back. There are some trees about 12 feet from the house.—A. P., Turlock.

[Who can help this reader?—Editors.]

FLORAL DEPARTMENT.

By Geo. N. Tyler.

House Plants.—No plant should be kept at the same degree of moisture at the root all the time, (except aquatics), the cyperus alternifolius or common umbrella plant, for example. A plant that does not dry out in a reasonable length of time has no feeding roots. Nine people out of ten, if their plants start to go back, give water and then, if they show no improvement, more water, and finally drown them or rather rot all the roots, so there is nothing to sustain the top. If your plants drop the leaves or begin to get light colored, it is a sign of too much water. Now I'll tell you why some plants do well for some, and go to the bad for others. The feeding roots of a plant are against the side and bottom of the pots, if you stand them in saucers of water you rot the feeding roots. Then again, if you have them in the dry atmosphere of a living room, the pot which is porous dries out, and the feeding roots suffer.

All plants, with few exceptions, like water on the foliage and it is a good plan to take them out twice a week in the hot summer months and spray the foliage. Here is a way you can grow most varieties of house plants, ferns, palms, etc. Take a pot two sizes larger than the one your plant is growing in, put some coarse material in the bottom to make the two pots level, fill in the space around the sides with moss and keep it damp. This prevents the feeding roots from drying out, and also gives out a moist atmosphere around the plants, which greatly benefits them. This is the only way you can make any success with the maiden hair fern.

For scale on palms and some varieties of ferns, take pure grain alcohol and go over your plants with a camel's hair brush, touching each one, afterwards washing off with clear water, and it will quickly rid your plants of scale, and will not injure the most delicate plant.

Your plants at this time of year should not have the direct rays of the sun, they will do best in an east window.

Here is a list of plants that do well in the house: Aspadistra for halls and dark places. Palms, Kentra fosterraria and belmoriana, most varieties of ferns—especially the neprolepsis or sword fern family, which includes Whitmanii, Boston, Smithi, Pearsonii, Tuberosa, etc.

The anthericum or soap plant (some call it the air plant) both green and veriegated does extremely well and the old umbrella plant, is fine if grown in water.

If your plants have been growing long in one pot, they are greatly benefited of you scratch in one teaspoonful of fine bone meal to a five inch pot. This does not apply to ferns.

Delay Explained.—"What are you doing there, Ellen?" "Excuse me, miss, but my apron caught in the door." "But you left the room ten minutes ago!" "Yes, miss, but I only just found it out."—The Passing Show.

THE HOUSE OF PAIN.

Unto the Prison House of Pain none
willing repair—
The bravest who an entrance gain
Reluctant linger there—
For pleasure, passing by that door,
stays not to cheer the sight,
And sympathy but muffles sound and
banishes the light.

Yet in the Prison House of Pain
things full of beauty blow—
Like Christmas roses, which attain
Perfection 'mid the snow—
Love, entering, in his mild warmth
the darkest shadows melt,
And often, where the bush is deep,
the waft of wings is felt.

Ah, me! the Prison House of Pain!—
What lessons there are
bought!—
Lessons of a sublimer strain
Than any elsewhere taught—
Amid its loneliness and gloom, grave
meanings grow more clear,
For to no earthly dwelling-place
seems God so strangely near!
—Florence Earle Coates, in
"Lyrics of Life."

A FABLE.

"Put the young horse in the plough," said the farmer, and very much pleased he was to be in a team with Dobbin and the gray mare. It was a long field, and gayly he walked across it, his nose upon Dobbin's haunches, having hard work to keep at so slow a pace.

"Where are we going now?" he said when he got to the top. "This is very pleasant."

"Back again," said Dobbin.

"What for?" asked the young horse, rather surprised.

But Dobbin had gone to sleep, for he could plough as well asleep as awake.

"What are you going back for?" he asked, turning around to the old gray mare.

"Keep on," said the gray mare, "or we shall never get to the bottom, and you'll have the whip at your heels."

"Very odd indeed," said the young horse, who thought he had had enough of it, and was not sorry he was coming to the bottom of the field. Great was his astonishment when Dobbin, just opening his eyes, again turned and proceeded at the same pace up the field again.

"How long is this going on?" asked the young horse.

Dobbin just glanced across the field as his eyes closed, and fell asleep again as he began to calculate how long it would take to plough it.

"How long will this go on?" he asked, turning to the gray mare.

"Keep up, I tell you," she said, "or you'll have me on your heels."

When the top came and another turn, and the bottom and another turn, the poor young horse was in despair; he grew quite dizzy, and was glad, like Dobbin, to shut his eyes, that he might get rid of the sight of the same ground so continually.

"Well," he said, when the gears were taken off, "if this is your ploughing, I hope to have no more of it."

But his hopes were vain; for many days he ploughed, till he got, not reconciled to it, but tired of complaining of the weary, monotonous work.

In the hard winter, when comfortably housed in the warm stable, he cried out to Dobbin, as he was eating some delicious oats: "I say, Dobbin, this is better than ploughing. Do you remember that field? I hope I shall never have anything to do with that business again. What in the world could be the use of walking up a field just for the sake of walking down again? It's enough to make one laugh to think of it."

"How do you like your oats?" said Dobbin.

"Delicious," said the young horse.

"Then please remember that if there were no ploughing there would be no oats."

This little fable is as good for boys and girls as for horses. Can you find the moral?—Our Dumb Animals.

PICKLED WALNUTS.
English Method.

Please give receipt for black walnut pickles.—V. P., Dixon.

Make a brine sufficient to cover the walnuts, using 6 ounces of salt to a quart of water. Take off the scum, which will rise as the salt dissolves, and throw in the walnuts. Stir them night and morning. If they are wanted for immediate use leave them in 12 days. Otherwise drain them from the brine in 9 days. Spread them on dishes and let them remain exposed to the air until they become black. This will be in 12 hours or less. Make a pickle with a good half-gallon of vinegar, 1 teaspoon salt, 2 ounces black pepper, 3 bruised ginger roots, a drachm of mace, and from one-fourth to one-half ounce of cloves and 4 ounces mustard seed to each 100 walnuts. The cloves, if desired, may be stuck into 3 or 4 small onions. Boil these ingredients together 5 minutes, have the walnuts ready in a stone jar and pour the vinegar over them as soon as it is taken from the fire. When the pickle is quite cold, cover the jar securely and store it in a dry place. Keep the walnuts well covered with vinegar and always boil any vinegar which may be added to them.

The walnuts for this pickle must be picked while a needle can still pierce through them. As soon as the inner shell has formed they have ceased to be in a proper state for pickling.

Dreams Come True.—"Did you ever dream of being a pirate when you were a boy?" "Oh, yes. Isn't it queer? Now, I'm in the prosaic business of managing an automobile repair shop." "Umph! You didn't miss it so far."

NO MORE ANTS



KELLOGG'S ANT PASTE
MAKES ANTS DISAPPEAR
AT ALL DRUGGISTS

The STEPHENSON
Patent Cooler
No Ice Required

Perfect Ventilation Absolutely Sanitary



Awarded first prize wherever exhibited. If not for sale at your dealer's, write for particulars and prices.

L. Anderson Co., Mfrs.
MARTINEZ, CAL.

Proper Feeding War Started by Women

NEW YORK, February 27.—Prominent women representing all parts of the country have been appointed members of a special committee to organize the campaign undertaken by the National Housewives' League to build up the health of the nation through proper feeding as its contribution to the preparedness movement, it was announced here tonight. Every woman's organization in the country will be urged to take up the propaganda.

Nutrition Experts recommend chocolate as one of the most nutritious and delicious of foods. Health—and economy—follow the daily breakfast cup of strength-supplying

GHIRARDELLI'S GROUND CHOCOLATE

In ½-lb., 1-lb. and 3-lb. hermetically sealed cans. There's a double economy in buying the 3-lb. cans.

D. GHIRARDELLI CO.
Since 1852 San Francisco

Preparedness
The Girl from St. Elizabeth School
(Episcopal)



will invariably hit the mark in body, mind and character, because she has been prepared for any position. How and Why is explained by a visit to the School. Located on Mt. Washington. Descriptive folder on request. Special rates for summer session.

St. Elizabeth School
3825-55 San Rafael Ave., Los Angeles.

FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS

San Francisco, May 31, 1916.

WHEAT.

The holiday this week caused a general suspension of operations in the local grain market for several days, and there has not been enough business to permit any change of quotations. The general situation shows little change.

Cal. Club, ctl.	$1.60 @1.65
Northern Bluestem	1.87½ @1.90
Northern Red	1.85 @1.95

BARLEY.

Both spot and future business has been extremely dull for the last week, with holders and buyers somewhat apart in their views. Prices show no further change.

Shipping, ctl.	$1.37½ @1.40
Choice Feed, ctl.	1.30 @1.35

OATS.

Jobbing sales for current feeding requirements are keeping up fairly well, but there is little important business in the local market, spot offerings being very moderate.

Red Feed	$1.35 @1.37½
White	1.55 @1.60

CORN.

There is a fair amount of Eastern coming in on orders for milling firms, but otherwise the movement is of a small jobbing nature. Egyptian, etc., find a good demand at many country points, but the amount passing through this market is limited, and variations of quality make it difficult to give a quotation that will apply generally.

Eastern Yellow, ctl.	$1.80 @1.85
Milo Maize	1.40 @1.45
Kaffir	1.60 @1.65
Egyptian	1.45 @1.50

BEANS.

The buying movement that started about the first of the month still continues, and dealers, who have been holding considerable stock, are in hopes of making an early clean up of most varieties. Prices are still advancing, though not as much as last week. Both small and large whites have taken another jump, and limas also are stiffening up, though there is still a good deal of stock in the south. The close clean up of small whites is giving tepary beans a chance, but they have found little favor with the consuming trade, and according to local reports few people know how to prepare them so as to make them desirable food.

(On wharf, San Francisco.)

Bayos, per ctl.	$5.00 @5.25
Blackeyes	2.90 @3.00
Cranberry Beans	4.85 @5.10
Horse Beans	3.00 @3.25
Small Whites (south)	7.00 @7.10
Large Whites	6.40 @6.60
Pinks	5.10 @5.25
Limas (south)	4.90 @5.00
Red Kidney	6.50 @6.75
Mexican Reds	4.90 @5.25
Tepary Beans	4.00 @4.50

SEEDS.

Melilotus Alba, lb.	23 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	5 c
Soy Beans	6 c
Canada Peas	5¼ @6 c
Alfalfa, per lb.	22 @24 c
Sudan Grass	35 @40 c

HAY.

Arrivals still consist mostly of old hay, including no choice red oat, and but little desirable wheat hay. Offerings of new hay, however, are gradually increasing, and the quality is reported exceptionally good, much of the volunteer being almost as good as red oat. The harvest is well under way, and while the crop is showing up better since the weather turned cooler, and a good deal of grain in the Sacramento Valley is being cut for hay, it is no means certain that the crop will be up to normal.

No. 1 Wheat	$13.00 @16.50
No. 2	12.00 @14.50
Tame Oats	12.00 @18.00
Wild Oats, new	8.00 @11.00
Barley, new	9.00 @12.00
Alfalfa, new crop	8.00 @12.00
Stock Hay	6.50 @ 8.50
Straw, per bale	.25 @ .40

FEEDSTUFFS.

While local trading is rather dull, the consuming demand is very fair for this time of year. Bran and middlings are both higher, as the present output is limited.

(Wholesale prices, per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$22.50 @23.50
Alfalfa Meal, per ton.	20.00 @21.00
Alfalfa Molasses Meal, per ton	21.00 @22.00
Bran, per ton	26.00 @28.00
Oil Cake,	Nominal
Cocoanut Cake or Meal	23.00 @25.00
Cracked Corn	40.50 @41.50
Middlings	35.00 @36.00
Rolled Barley	29.00 @30.00
Tankage	45.00
Rolled Oats	29.50 @31.00

VEGETABLES.

String beans are decidedly firm, with light offerings from the Bay district, and prices are up to 6c. Peas are easier, but still fairly high, with limited supplies, Artichokes are going off crop, and few are offered. Tomatoes have dropped sharply, as native stock will soon be in good supply, though arrivals so far have been light. Green corn is in liberal supply and much easier, though some fancy stock sells up to 50c.

Cabbage, ctl.	$1.75 @2.00
String Beans, lb	5 @ 6 c
Summer Squash, box	75 @90 c
Peppers, bell, lb.	15 @20 c
Rhubarb, box, Bay	40 @75 c
Asparagus, box,	1.00 @2.25
Lettuce, small crate	50 @65 c
Eggplant, lb.	10 @15 c
Peas, lb.	4 @ 5 c
Tomatoes, lugs,	1.50 @2.00
Green Corn, doz.	15 @25 c
Okra, lb.	20 @25 c

POTATOES AND ONIONS.

Old potatoes are scarce and firm, but new Delta stock has dropped sharply, with rapidly increasing arrivals and most offerings of good quality. Dealers say the reports of frost damage are greatly exaggerated, but it is evident that the output will be considerably curtailed, and with a shipping movement to other states beginning, no great decline is expected. Onions are stronger.

New Potatoes, ctl.	$1.75 @2.25
Oregon Burbanks	1.65 @1.85
Onions, red	1.75 @2.00
Australian	2.50
Garlic, per lb.	5 @ 9 c

POULTRY.

The local demand is about normal for this time of year, while arrivals from nearby points are much of the time in excess of requirements, and clean up slowly at rather easy prices. The general list is about as before.

Broilers, 15 lbs. to doz. and less, lb.	22 @23c
do, over 15 lbs. to doz.	25 @28c
Fryers	25 @30c
Hens, extra, per lb.	20c
Small	17 @18c
Smooth Young Roosters, per lb	25 @28c
Squabs, per doz	2.00 @3.50
Geese, per pair	2.25 @3.00
Ducks, young	Nominal
Old	15 c
Belgian Hares	9 @10 c

BUTTER.

Butter has eased off a little in the last few days, but no great decline is expected, and a good deal of stock has been shipped north. The Eastern movement seems to have stopped for the time, but it is felt that the continued demand in the East will tend to stiffen prices; while the early shipments have given little opportunity for storing, and this will mean a larger demand later on.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	25½	25½	25½	25	—	25
Prime Firsts	25	25	25	24½	—	24½
Firsts	25	25	25	24	—	24½

EGGS.

Extras have dropped back a little, but on the whole the market is firm, with production light in many sections, and the Los Angeles market is offering high prices.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	24	24½	24	24½	—	23½
Sel. Pullets	21½	22	22	22	—	21½

CHEESE.

Flats are a little firmer than last week, all offerings being readily disposed of. Monterey cheese shows some easiness, though values are fairly well maintained.

Y. A.'s fancy	14½c
Fancy Calif. Flats, per lb.	14 c
Monterey Cheese	16 @17 c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	26	26	27	27	27	27
Eggs	24	24	26	25	25	26

DECIDUOUS FRUITS.

The general demand for fresh fruits has picked up noticeably during the last week, and the daily arrivals in most lines clean up well at satisfactory prices. Cherries hold firm, with an active Eastern shipping movement; most of the arrivals being of attractive quality. Apricots are in much better supply, but with better quality the demand has increased, and prices are higher. Peaches are somewhat lower on larger offerings, while figs sell at stiff prices. Clyman plums are appearing this week. A few green apples are offered, while there is still considerable old stock in storage. Currants and gooseberries remain firm, and strawberries are higher, while larger supplies have brought a decline on all other berries. Cantaloupes are scarce and sell off quickly at a good figure, while watermelons move rather slowly.

Currants, chest	$4.00 @6.00
Loganberries, chest	4.00 @5.00
Gooseberries, lb.	.05 @ .10
Blackberries, crate	.90 @1.00
Raspberries, chest	8.00 @10.00
Strawberries, chest	4.50 @7.00
fancy, chest	7.00 @9.00
Apples, old	.75 @1.00
green, box	.65 @ .75
Cherries, black, 10 lb. bx	.70 @ .95
White, do	.50 @ .85
per lb. black,	.07 @ .11
White	.03 @ .05
Apricots, crate	1.00 @1.90
Peaches, crate	1.00 @1.50
Figs, black, box,	1.75 @2.00
White	1.25 @1.50
Plums, crate	1.00 @1.50
Cantaloupes, standard crate	3.50 @4.00
Watermelon, lb.	.04 @ .05

DRIED FRUITS.

Local packers continue to report nothing doing in the dried fruit market, as they are unwilling to meet the views of growers in some of the most important lines, and indeed characterize the prices asked for apricots and prunes as out of the question. Peaches are nominal, as packers are unwilling to quote until the Association names its prices. There are very few pears left on the market, with nothing doing yet in futures. Spot prunes are pretty well cleaned up, and new prunes are not yet moving, as few growers are willing to sell. The fig crop is rapidly being contracted, with prices firmly maintained; and apples show a little more strength than for some time past.

Packers, though admitting the prospect for success of the Peach Association, hold that the attitude of growers on apricots and prunes is entirely unjustified by conditions, and that the prices asked will shut off the demand; and they naturally refuse to make speculative purchases under the present conditions.

Apples, old crop	6¼ @6½c
Apricots, per lb., 1916	10 @11 c
Figs, white, 1916	6½ @ 6¾c
Black, 1916	5 @ 5½c
Calimyrna, 1916	9 @10 c
Prunes, 4-size basis, 1915	5 c
1916	5 @5¼c
Peaches,	Nominal
Pears	5 @6½c

(Associated Raisin Co. Prices)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6¾c
London Layers, 3-crown, 20-lb. box, 1916	$1.30
Imperial Clusters, 6-crown, 20-lb. box, 1916	2.75
Bulk, layers, 50-lb. box, 1916	2.75

CITRUS FRUITS.

The orange markets in the East are from 10 to 25 cents per box higher than a week ago. Shipments of navels and valencias are going East in good volume. At New York on Monday, May 29, navel oranges averaged on auction from $2.70 to $3.90 per box; valencias from $2.45 to $4.25; sweets from $2.75 to $3.15; lemons $4 to $4.55 per box. Other auction points paid about the same as the above. Navels are nearly all shipped from the southern part of the State and valencias are going forward rapidly.

The price on the smaller sizes of fancy navels at San Francisco has again been marked up a little, as offerings are diminishing, though there is no great demand here. Valencias are coming in more freely, with prices as last quoted.

Oranges, Navels	$1.75 @3.15
Valencias	2.75 @3.00
Grapefruit	1.50 @2.50
Lemons, box	1.75 @3.50
Lemonettes, box	1.25 @1.75

HONEY.

Values stand about as before. New honey is quite firm, and so far all that has come in has found a ready market, as the old stock is pretty well off the market. The outlook is

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, May 29, 1916.

The early ripening of the Deciduous crop is decidedly noticeable this season and varieties that are now moving and that have already arrived in the East, at this time last year were not ready for shipment. The Standardization Law in certain districts is holding back some shipments that, without legal restrictions, would already have been on the market in a condition unfit for consumption.

All fruits are carrying better this season, due in a measure to the quality and to the dryness of the weather. There are very few rejections in the East and the demand is active on all varieties. The following prices have ruled for the week:

New York: Tartarian cherries averaged, $1.60; Royal Anne, $1.50; Bing, $2.30; Rockport, $1.05; Bigarreau, $1.40; Republican, $1.52; Oregon, $1.57; Seedling Apricots, $2.57; Pringle, $1.50; Newcastle, $1.65.

Boston: Royal Anne cherries, averaged $1.65; Tartarian, $1.90; Republican, $1.70; Bigarreau, $1.60; Oregon, $1.75; Bing, $2.52.

Special Livestock Market Report.

Sheep.—The most pressing shortage of mutton ever seen; none in town and very little hope for the early future. At Portland, a fair run; top price wethers $8.25; lambs down to $9 per cwt.

Hogs are coming freely to San Francisco and Portland, mostly from dairy farms. 5000 into Portland May 29, selling $8.65-$8.85. Most eastern markets lower than last week.

Cattle plentiful supply, poorer quality than last year, less inside fat. Scarce at Portland, mostly California grass stuff with Mexican steers beginning to come. California stock top prices, $8.50 but mostly $8 to $8.25. Supply considerably heavier than last year.

Wool local market still very strong. No real change in values. London sales opened 5 to 10 per cent higher all around. Australian sales suspended for few days.

uncertain, reports of a light crop being favorable for rather firm prices throughout the season.

Water White, comb	14	@16	c
Amber	10	@12	c
Water White, extracted	8	@ 9	c
Light Amber, new	4	@ 6	c
Dark	3½	@ 4½	c

HORSES.

Only a small sale of miscellaneous middleweight stock is being held here this week, and dealers say the market is duller than for some years, even heavy horses finding less demand than usual. Values, however, are well in line with the old quotations. The country market is strong, as Eastern buyers for military purposes are scouring the country, picking up all light and medium weight horses at higher prices than local buyers can pay. The United States Army has been buying considerable stock, but the principal contracts have gone to Seattle, Reno and Kansas City. Orders for a few carloads, however, have been placed with local dealers.

(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs. and up	$ 250
Drafters, 1550 to 1650	150@200
Chunks, 1350 to 1500 lbs	150@1.75
Wagon horses, 1050 to 1350 lbs.	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@ 75
Farm wdrkers	50@100

DRESSED MEATS.

(Wholesale prices to dealers.)

Steers	11	@11½	c
Veals, large	12½	@13	c
Small	13	@14	c
Prime Wethers	14	@14½	c
Spring Lambs	16	@17	c
Hogs	11	@12	c

LIVE STOCK.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)

Steers, No. 1	7¼	@7½	c
No. 2	6¾	@7	c
Cows and Heifers, No. 1	6	@6¼	c
No. 2	5½	@5¾	c
Bulls and Stags	4	@5	c
Calves, light	7½	@8	c
Medium	7	@7½	c
Heavy	6	@6½	c
Hogs, grain-fed:			
100 to 150 lbs.		7¾	c
150 to 250 lbs.	8½	@8¾	c
250 to 325 lbs.		8	c
Prime Wethers	7	7¼	c
Spring Lambs, f. o. b. country points	$5.00	@5.25	

WOOL

(Prices paid in the country.)

Red Bluff, year's	25	@27	c
Sacramento Valley, y's	19	@35	c
Mendocino, year's	30	@31	c
Mendocino, 7 months'	25	@26	c
Southern, year's	18	@21	c
Southern, 7 months'	15	@18	c
Imperial Valley, year's	17	@19	c
Imperial Valley, 7 mos.	14	@15	c
Nevada	21	@23	c

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	28.60	28.00		28.20
" 9	25.33	26.66	26.00	28.10
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	28.66	36.33	28.00	36.66
Feb. 6	26.68	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25
" 20	29.00	32.00	27.16	32.00
" 27	29.10	30.90	27.00	35.25
March 6	27.00	24.08	25.25	24.16
" 13	24.66	29.91	24.00	28.83
" 20	23.00	28.33	22.50	27.16
" 27	22.91	28.50	23.00	28.08
Apr. 3	23.00	28.50	22.23	28.83
" 10	23.08	29.31	22.00	28.00
" 17	23.00	27.33	22.00	27.50
" 24	23.00	25.25	22.00	25.00
May 1	23.08	24.33	22.00	25.33
" 8	23.00	24.10	23.08	25.00
" 15	23.16	22.25	22.00	20.83
" 22	23.75	23.16	21.96	22.50
" 29	23.08	24.16	21.83	24.58
June 5	23.90	——	23.00	——

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 30	28.16	36.33	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50
" 13	23.00	28.90	25.10	28.00
" 20	23.60	23.66	23.58	20.33
" 27	21.40	20.30	20.80	18.50
March 6	20.50	18.33	19.00	18.00
" 13	20.66	19.50	19.00	18.91
" 20	21.00	20.00	19.66	19.08
" 27	20.83	21.41	18.50	20.83
Apr. 3		21.75		21.00
" 10		22.00		21.00
" 17	22.00	21.16	23.08	20.91
" 24	21.80	21.83	22.25	22.58
May 1	26.16	21.00	22.00	22.58
" 8	23.33	21.20	22.00	21.41
" 15	23.58	24.58	23.00	25.66
" 22	23.58	25.46	23.00	25.00
" 29	23.50	25.33	23.00	26.50
June 5	22.50	——	20.70	——

Publisher's Department

In renewing her susbcription to the Rural Press, Mrs. M. L. Ward of Occidental, says: "I think it a very valuable farm journal. Every article is interesting. At present we are more than interested in your rural credit articles. We think rural credits is the State's greatest need."

In our next issue we will devote considerable space to the sheep industry of California. This branch of agriculture has been neglected by farmers, especially on the small ranches, but the high prices of mutton and wool are commanding attention. Prof. Wickson is now preparing a special article and we have several written, especially for our next issue.

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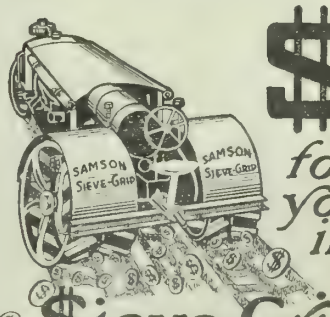
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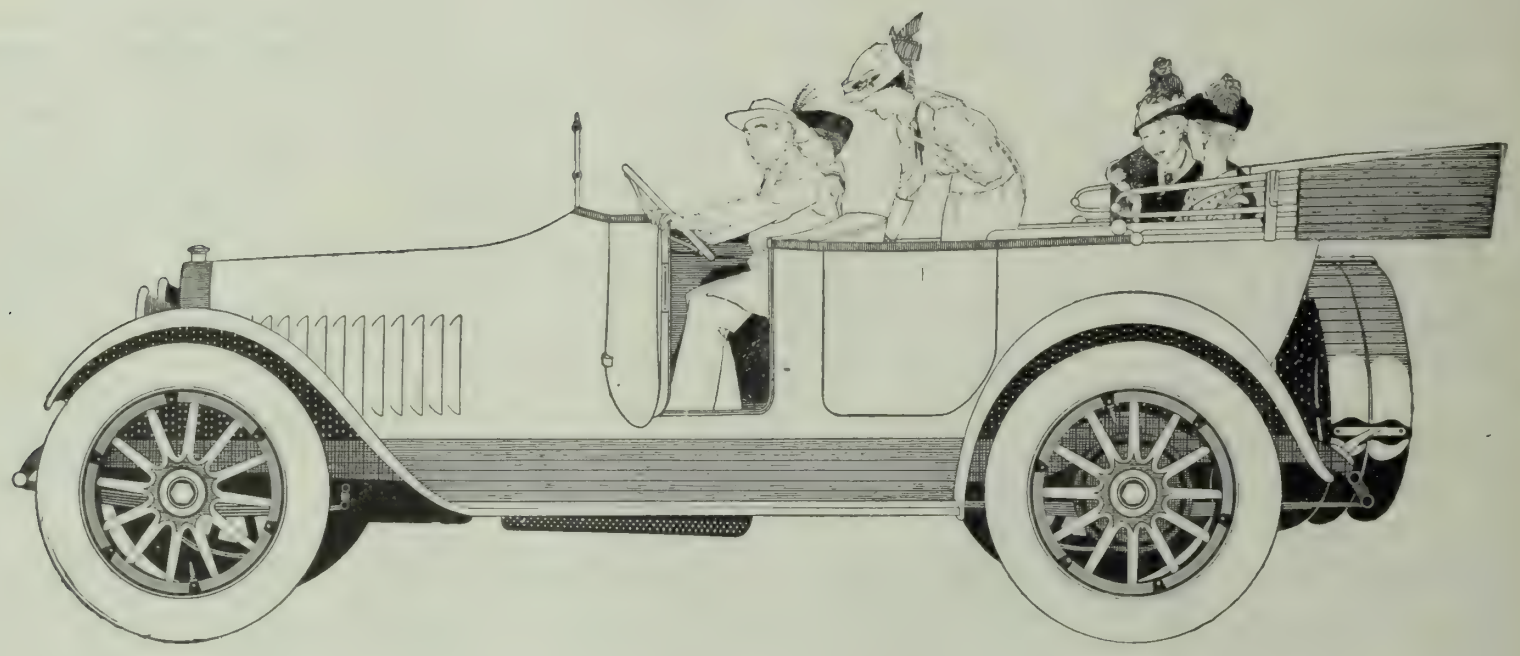
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Vol. XCI—No. 24 Forty-sixth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO JUNE 10, 1916. LOS ANGELES

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What Sheep Did for California.

Ninth of a series of sketches in which the Editor presents suggestions drawn from long experience, of what Californians should think and do for the advancement of California Agriculture.

DOMESTICATED sheep were brought to California by the Franciscan padres, and by the soldiers who attended them on their mission-founding enterprise, in 1769. This introduction expanded into a large, rude form of sheep husbandry very quickly. An early writer says: "Between San Diego and San Francisco in 1825 there were at the missions 1,003,970 sheep, and at the ranches away from the missions as many more." We are aware that these figures are impeached by later historians as exaggerations, but that concerns us not; we are dealing with the conception of the facts which exerted an influence in the early years of American occupation, and that was that the coast district of California had been a very great sheep country.

Why So Many Sheep at the Missions?—Another conception of the early days is interesting, and that is that the American pioneers found a most lofty purpose in the mission sheep-husbandry, and were so exalted by it that they forgot the services of the sheep in providing food for hungry soldiery and Indians and in supplying vast numbers of pelts and much tallow for sale to coast trading ships from Atlantic seaports. They looked upon the padres' sheep as a direct Christianizing agency, for one writer says this:

"The Mission fathers reared their sheep solely for the purpose of obtaining a textile from which to fabricate garments for the savages as an auxiliary means of proselyting. Therefore they undertook sheep husbandry on such a scale, that in no long time, the rude inhabitants who flocked to the missions were clothed in garb more fitting their advent among those of Christian civilization."





Suggestions of California sheep on an upland range and in such rough shelter as serves well in a mild climate as protection during the short storm spells.

Here, too, the picturesque conception of the pioneers has been pierced by later historians, who have rummaged through the narratives of travelers adventuring among the California sheep farmers of a hundred years ago. Not only do they forget to record the existence of any such tailoring establishments as would be required to fabricate for the Indians the elaborate and ornate costuming of the Spanish dons, but they distinctly repudiate the capability of such weaving outfits as they saw to produce Christian apparel. Though these narrators do say that they saw, "at the larger missions, as many as two hundred or more women and girls at a time, spinning and weaving," they pronounce the resulting fabric suitable for coarse blankets, but unsuitable for clothing, because it lacked the process of fulling. They say that the soldiers and their families would have been naked at times but for the clothes brought by the traders. Thus it becomes pretty clear that the only weaving was for blankets, or, possibly, father and mother Hubbards, which could be easily fashioned from such a fabric, the coarseness of which would not offend an Indian—for epidermal irritation has always been recorded as an aboriginal pastime. But the classification of such costumes as Christian clothing could never prevail except in the competent imagination of the California pioneers. However, it may be granted that the mission sheep did produce Christian clothing, but very indirectly, and then not for the Indians. The sheep gave the covering of their backs and kidneys for trade with ship captains, who brought fabrics and finery of all kinds for the personal adornment of the soldiers and rancheros, and the families of both. The recent converts from paganism probably secured neither pants, shirts or skirts until such garment had been well tested by their over-lords, spiritual and temporal.

A Very Small Bequest. — What, then did the Americans inherit from the Mexico-Spanish regime? Very little indeed. Though the pioneers believed that there had been two million sheep grazing the coast lands in 1825, so many had perished for their pelts and tallow during the secularization of the mission properties, and so many were probably required to appease the appetites of the first run of gold-seekers in 1849, that the first census taken of the new American state in 1850 records the existence of only 17,514 sheep—or less than one per cent of the number said to exist twenty-five years before.

And what was the character of these few sheep? J. E. Perkins, secretary of the first California Sheep and Wool Growers' Association, which was organized in 1860 (as will be farther noted later), left this record of the mission sheep, which were then called "natives":

In size, form, vigor and disposition they were all that is undesirable—shearing two to two and a half pounds of coarse, uneven, kempy wool, suited only for the coarsest fabrics and scarcely worth the cost of sacking and transporting to market. Yet it is from this basis that our flocks of the present day have mainly sprung, and we owe to this basis the demonstration of the suitability of our climate and grasses to the growing of superior sheep, to which we are now approaching.

We are evidently to credit our picturesque predecessors of the Spanish regime with a demonstration to be made good use of and a foundation to rise away from as rapidly as possible.

The First American Decade.—It is probably not generally known to this generation how energetically, enterprisingly and swiftly the American pioneers lifted sheep husbandry in California to greatness in State development and to national importance. "California for sheep!" was the cry which followed first the world-stirring outcry: "California for

(Continued on page 698.)

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EDITORIALS

THE WEEK.

WE ARE experiencing this year the advantage of a cool springtime following an omission of late rains. It has occurred before and always to the advantage of most crops. If it is true, as often said, that it is the late rains which make the crops, it is also true that when such late rains fail, a cool spring can save the crops. Not only is there more grain and hay being harvested than would be expected from the rainfall record, but there is plumper grain than in some years when fair spring rains alternate with hot drying winds. The plants seem to say by their behavior and performance: if we get the ground filled below we would prefer to draw it up for slow growth during small evaporation than to have ordinary spring showers alternated with heat, which at the same time forces growth and robs it by rapid evaporation. And the same conditions seem to serve well the summer-ripening fruits. In the interior valley we never saw cleaner, stronger foliage of tree and vine than during a run to the Fresno district last week. And this was true even where a good load of fruit was being carried. As shown by reports on another page of this issue, there is wide variation on the probable fruit yields at different points, but fortunately, on the whole, there will be some compensation for less tonnage in higher grades and good prices.

The occurrence of Memorial Day last week brought out some interesting facts about California's resources in veterans of '61 to '65. It seems that the "thin blue line, which grows thinner every year," does not apply to California, where the Grand Army has grown no less in twenty years, while there has been a loss of 50 per cent in the Eastern departments. The California department is recruited by immigration to some extent, but it is also held that "the old soldiers come to California to die, and when they get here they find a new interest in life that makes them change their minds and keep right on living." At a recent Grand Army parade in Washington the people in the reviewing stand declared that the veterans from California stood straighter and marched with firmer step than all the rest. California is surely a grand place to await the sunset.

PORCINE PREPAREDNESS.

WE HAVE pulled so much wool over this issue that a few bristles are needed to keep it from going soft. Therefore, we turn to the hog and express our satisfaction that the grunts which our associate editors have kept up for months past, about doing better things with hogs, are now rapidly connecting up into a shrill squeal. Things seem to be moving now toward a systematic effort to realize our opportunities in the line of swine growing and local manufacture of pork products. This effort seems to cover, first, the needs of growers who have the knowledge and enterprise to turn off good hogs—few or many, according to the conditions under which they work; second, to get clear of local buyers, who practice all sorts of greedy exactions and iniquities, which prevent growers from getting value which belongs to them; third, to give those packers who play fair a chance to get all the good hogs which they can use to keep their manufacturing establishments and capital profitably busy; fourth, to secure both for growers and local packers of the right kind, the advantage of local consumption and such export as may be developed from California shipping points. These are some of the planks of our pig-platform, and they will be found more closely related to California prosperity than some of the planks which the political carpenters will be smoothing off this summer for the presidential platforms. At any rate, we are going to preach a little from those four planks right now, for they seem to us to constitute fundamental issues in securing the preparedness which will enable us to meet the problems which must be first solved. They may not be all that must be done in the future. Our readers should remember that practical progress does not usually consist in doing everything at once, but rather in doing one thing after another, as one gets wisdom and strength for it, and in this way to attain at length the last thing which makes the job complete.

TO GET THE GROWER HIS DUE.

WE TAKE it for granted, of course, that the hog-grower knows how to grow a hog which will entitle him to some dues. We pass over silently all those fundamentals of wisdom, insight and emotion which make a man a hog-expert and hog-lover, and of which you can get the biggest two dollars' worth in the world by buying Guilford's "California Hog Book." If a man does not know and feel the things which are written in that book, no decent hog owes him anything, and we are not fool enough to try to help him collect where nothing is due. But suppose he does know and feel these things, and has a bunch of hogs which show that he does, what shall he do with them? That is where we begin. We know well enough how a man feels sitting on the fence with the sun burning his back and his belly caving in, after some smart Alexander of a buyer has made him a call, cussing all hogs in general and his bunch in particular, and ended by offering him a price which will not cover the breeding and board of them. And we know also how he feels later, after he has figured the freights and commissions on a small lot of hogs sent to the city, and finds he may not have enough left to pay for the boar which made them. No wonder he cries out: "There ain't nawthin in hawgs!" and kicks the house cat out of the rocking chair to get even with the animal kingdom!

Brethren: such things ought not so to be, and they need not, if you will produce hogs which manufacturers can use to advantage, and you arrange to sell them in a business-like way. There are probably different ways to do this, according to local conditions, but here is one way in which it is now being done. In Minnesota they had on January last about 150 neighborhood stock-selling associations. The members appoint as manager some man living at a convenient point on the railway. On a certain day (usually one day in each week) the members send their small consignments of stock to the shipping point, where the manager takes charge of them, assembles them in car-load lots and despatches them to the primary market. Before being loaded on the cars each member's stock is ear-marked, weighed and recorded in the manager's books; and when the returns from each car-load are received from the commission agent in the primary market the proceeds are distributed to the members on the basis of these records. And this is the way it works out, according to a recent statement by Prof. Weld of the office of markets and rural organization of the U. S. Department of Agriculture:

In 1913, the last year in which particulars were collected, the total value of live stock marketed through the associations then in operation (115 in number) was about $6,000,000. The number of head of stock sent to market was as follows: cattle 3,300, calves 30,000, sheep 15,000, pigs 250,000. The chief market for Minnesota live stock is South St. Paul, and prices throughout the State are based on the prices current in that market. It has been found that local cattle-buyers pay farmers from 50 cents to one dollar per hundred pounds less than South St. Paul prices, while by shipping through their own associations the farmers receive on an average about 33 cents less than market prices. The saving, therefore, is considerable; and as associations are easily formed and easily managed they are rapidly increasing in number and dealing with a constantly increasing proportion of the Minnesota live stock business.

This means that the growers secure, by associated shipping, service for 33 cents, which the local buyer charged them 50 cents to $1 for. It is possible that even greater economy could be realized by more direct trade. We are not expounding the situation, but merely giving a concrete suggestion.

THE HOGS WHICH ARE WANTED.

WE HAVE had the advantage of seeing some business correspondence on the subject of the hogs which packers, who are now engaged in the effort to make popular products out of California hogs, find to serve best their business purposes. As the letters were written personally from a hog-user to a hog-grower to guide the latter in his business of making marketable hogs, it may perhaps be taken as having superior inwardness to writing undertaken for propaganda purposes. It looks to us like the real thing in local hog commerce, and we outline the points made:

Hogs fed on milk from tubercular cows must be discounted in price because the packer has to stand the losses from condemnation by inspectors. This has run in some lots as high as six per cent. Losses on stubble hogs are less, and when our receipts are largely dairy hogs we can soon tell the difference.

The hogs we like best weigh in the vicinity of 200 lbs. At times there is good demand for light hogs for block trade, although lighter weights, say 100 to 150 lbs., usually sell at some discount as compared with the heavier hogs.

California hogs are not forced as they should be, and, age for age, the California hog does not weigh as much as the hog handled in sections where the business is on a better basis. As a result we are obliged to handle at all seasons of the year a large number of hogs not properly fitted for the market, and to get a share of good weights we are obliged to include a number of these light, poorly nourished and unfinished hogs, which are dear at any price. Cured meats from these undesirable hogs cannot be put out under our regular brands, but must be sold to peddlers and other cheap buyers, who sell them to a trade which is not particular what it sells.

Dressed weight on the run of local hogs does not compare with that of Eastern hogs. There the buyer is reasonably sure of his net weights; here there is no way of telling whether the hogs will dress out 73 per cent or 77 per cent, and this variation is equivalent to 50 cents a hundred on the dressed weight.

With our limited population the demand for trimmings, spareribs, hearts, tails, etc., is comparatively small, and large quantities of them have to be shipped for sale at the East at low net returns, or put in our rendering tanks. The difference in the return for these small cuts will run from 25 cents to 30 cents per hog in favor of the Eastern packer.

Although we think well of the California cured meats there is still much prejudice in favor of Eastern. We hope to reduce this is soon as we are able to put out a really first-class selection of California cured meats, and we propose to tell both dealers and consumers that they are getting California cured stock. We must look for expansion in the packing business in California through an increase in the number of marketable hogs, and still more through an improvement in their quality, and only through the individual efforts of the hog-raiser can this condition be realized.

If you ship to packers in carload lots, you are not dependent on local shippers, and there is no reason why you should not get the highest market prices.

This looks to us like a heart-to-heart talk from a man who has outfit and capital to use a vast number of California hogs, and is disposed to stake his enterprise on the chance of popularizing first-class California pork products. It may not cover everything involved, but so far as it goes it seems frank and rational, and it is up to the hog-raisers to look into it and, so far as it is true, to give it weight in their producing plans and policies. And the best way to find out how far it is true and pertinent is to gather together in neighborhood groups, affiliate with the State Swine Breeders' Association, and root over the whole field. We believe California can be greater than any other State in swine breeding for pure-breds, in the production of commercial hogs and in the supremacy of pork products. The first thing is to know how and the next thing is to do it. But no man nor hog can do it alone.

By The Editor

Queries and Replies

INQUIRERS MUST GIVE FULL NAME AND ADDRESS.

POPULARIZING OUR PORK PRODUCTS.

OF COURSE the prime requisite is to make them at least as good as any other. Then, so far as the local demand goes, build on patriotism aroused by publicity. Every one of our State products, which are now winning world-fame, had first to overcome local damnation, and they all succeeded in doing this in the same way—first, by improvement efforts, which made them better than others, and then by publicity efforts, which forced people to know it. The hog interest has a great advantage over all other interests in achieving the necessary improvement. It would not take much more than a year to wholly change over all the bad hogs in the State, for two crosses of the right kind would deliver the goods. It ought not to take longer than that to change over the feeds and feeding policies, which may need to be changed to get the right kind of hogs and the proper care to make the better feed effective. If there were any way to be sure that this very quick, and often easy, thing would be done, the publicity campaign would not bring results too soon if it should be begun at once. But of course reforms do not come that way. They come, one thing after another, and the first thing is to organize and exhort for better hogs and to clear the way for profitable sale of such hogs, for these things take more time. It takes more time to make over a man than a hog; therefore, you have to begin on a man. And when you get a man converted and working with his fellowmen toward ends which command his enthusiasm, you have also started well the publicity campaign. For the way to get Californians to appreciation of California hogs is to awaken their interest and engender among them conversation and disputation on the subject. Fill the countryside with pig clubs, the larger towns with pig conventions and the fairs with exhibits and demonstrations, and you will soon dispose of the prejudice that California hams and bacon cannot be good. If you start to frying good California bacon in a State fair pavilion, you will draw to your side everything which has the semblance of a man—even some of the portraits in the art gallery may be near enough to nature for that. And all this means that the Californians who put money in hogs for the purpose of drawing more money out of hogs must do exactly what every other group of California producers is doing, with greater or less success, at this very moment, and that is: get together and squeal!

Potatoes in Los Angeles County.

To the Editor: What is the proper time to plant potatoes in this locality for sale as seed potatoes; also as to the width between rows and the depth they should be covered? I have received conflicting advice from neighbors and write you for information that is reliable. I am planning to plant on gound now being graded after taking out 30-year old seedling walnut trees. When the potato crop is harvested I expect to sow to alfalfa, and would like to know when the seed should be sown and whether the Peruvian alfalfa does better in this locality than the ordinary kind.—I. W. M., Los Angeles.

We would prefer not to plant as late as this unless the land is moist and low and near enough to the coast to get some moist cool air. Except where the air is cool and moist and the soil amply supplied with moisture, midsummer potato planting is risky. The safest planting is earlier in the season so the crop can make winter growth, or later in the season, say in August or September, for autumn growth—in places where sharp frosts are not to be expected. You see it is reasonable that your neighbors should give you conflicting advice for each of them is speaking from a different line of experience had under different local conditions, probably. If you think your conditions justify the risk, make your planting furrows about 30 inches apart, drop the seed about 10 inches apart in the furrow and cover four to six inches, according to soil character and moisture—deeper in lighter, drier soil. Keep the surface flat as possible and loose by cultivation. Irrigate in furrows midway between the rows and do not let the surface flood. Keep the tops growing evenly; do not let them stop and start again by irrigation.

Alfalfa can be sown at any time of the year in your region, except in very high or low places where frosts may be sharp. Probably from October to February is the best period, avoiding of course spells when heavy cold rains may be on. You can watch the clouds and the soil with more profit than the calendar. We are not yet sure that any alfalfa is better, on the whole, than the common variety which came to California from Chile over 60 years ago and which now constitutes nearly all our acreage.

Determining Sex of Offspring.

To the Editor: Is there any known way to make cows have heifer calves? We read in Genesis that Jacob took colored rods and put them in the water where the cows drank or stood looking at the reflection in the water about the time they were being served and the calves were streaked, speckled and spotted. Of course we do not know for sure, but believe those old timers were better posted on cattle than the present cattle farmers.—G. R., Orland.

Jacob was surely some jockey and played his poor old father-in-law in a way that was morally shocking and you are probably right that jockeying has not improved since his day. But if Jacob would do his relative in that way how can we have any faith that the explanation which he gave to the corral loafers of his day was true? We believe that his story was a blind and that he put over on Laban's dams sires of brindled ancestry and got more stars and stripes that way than he could by building lath-fences all the way from Succoth to Padanaram. However, as you say, we really know very little of what was actually done in those days and we do not know much more about the crooked things which are, even now, being worked on us.

But experience is that marking through prenatal influences is probably easier to accomplish than determining sex of offspring and Jacob did not claim to manage that. Some of the theories are given on page 85 of our "Second Thousand Answered Questions in California Agriculture," but none of them has been demonstrated to be workable.

Getting to a Real Market.

To the Editor: I would like to know why there is such a difference in the prices of products in the short distance of 160 miles. You quote the price of barley in San Francisco at $1.30 to $1.40 per ctl. New barley was sold here yesterday for $1.10. A person could purchase a big auto-truck capable of drawing 5 tons down the State highway and make $200 a trip. Automobiles run from here to San Francisco in six and seven hours. I do not know how long a truck would take.—Subscriber, Orland.

We cannot figure it as you do. Suppose the truckman should make the whole difference between $1.10 and $1.40 for barley, and suppose the barley selling at $1.10 was gilt-edge brewing and therefore worth the highest price, the total possible gain would be 30c per ctl. or $6 per ton and the whole increment on five tons would be $30 and not $200. But that, or even any considerable part of it, is too much for the grower to give away. Therefore it is up to the growers to get together and find out just how much they are losing to local buyers because they do not assemble their products and get them to real markets at carload rates, or because they do not deliver their own stuff at primary markets. This is a great fundamental question with all producers. It can only be answered by organization, inquiry and action.

Why So Much Spraying?

To the Editor: In correspondence about buying an apple orchard in another county, we are informed that the trees have their first crop this year and "they have been sprayed four times already." Is it not hazardous to buy an orchard which requires so much spraying? Is there not something awful the matter with it? The knowledge we have acquired of apricots and prunes in the Santa Clara valley does not seem to carry us very far in an apple orchard.—W. L., Santa Clara.

The persistent spraying in this case simply indicates that the owner of the orchard is on his way to a sound apple crop. He is spraying to kill the apple worms as soon as they hatch from the eggs, so that they shall not get out of his reach by boring into the fruit. Such spraying is the price of success in growing apples and pears, and there is nothing awful about it. You are right in your observation that successful growth of one fruit may not mean preparedness for the growth of another fruit. The requirements of each fruit must be diligently studied.

Topping Onions.

To the Editor: I would like to ask if there is any method of topping onions other than by hand? When is the best time to top them?—G. P., Selma.

We know only the usual hand and knife method. It is usual to puli two or more rows laying the onions near to the standing rows and placing the next pulling over them, leaving the pulled onions in long continuous piles across the field. If the tops are well dried and shrunken, topping can proceed immediately; if not a short time in the piles will fix them for topping. California has great advantage in dry summer and autumn air which promotes curing and hastens condition for sacking in the field without house drying. There is no best time for topping; it depends on the condition of the bulb and of the weather prevailing.

Failing Prune Tips.

To the Editor: I send specimen of a discolored tip of a prune branch. I have about ten trees affected in vicinity of others having healthy green color. Will you please diagnose trouble and advise remedy.—C., Chico.

We find no sign of local disease in the tip except a little shot-hole on some of the leaves—not enough to cause the trouble. The affected trees may be standing in bad places and may have suffered some partial root injury. We should cut back the failing tips if the trees are young; on old trees we should wait for the later growth to take the place of the failures—unless the trouble should be following down the branch, and then cut in ahead of it.

Flax Growing.

To the Editor: I am thinking of putting in some flax. When is the time to sow on a dry farm? I saw fine flax grown in Canada and I do not see why it would not do well here.—G. R., Orland.

Flax is about as easily grown in California as barley and is handled with the same machinery—the separator being properly screened for it. It is a winter grower in California and has to be sown in fall or early winter to grow on the rainfall. As flax is not a feed grain, you ought to know something in advance who you are going to sell it to. Therefore intending flax growers should have some understanding with the oil mills, which are the only consumers of large quantities.

Carobs.

To the Editor: Has the tree Algaroba ever been grown in this State? If so, with what success? If not, what do you think of its possibilities?—R. T., Gilroy.

You probably refer to the carob, or St. John's Bread (Ceratonia siliqua). It has been introduced from time to time since pioneer days and old bearing trees can be found in many valley and foothill situations. It does exceedingly well and is handsome for ornamental planting and would be profitable for stock feeding according to standards prevailing from prehistoric times in Asia Minor. It can be purchased from California nurseries carrying ornamental trees in variety.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., June 6, 1916.

STATIONS	Rainfall Data: Past Week	Rainfall Data: Seasonal To Date	Rainfall Data: Normal To Date	Temperature Data: Max'm	Temperature Data: Min'm
Eureka	0	38.99	45.28	58	42
Red Bluff	.04	20.21	24.69	94	48
Sacramento	0	18.28	20.00	94	44
San Francisco	0	27.12	22.16	76	48
San Jose	0	16.31	16.75	90	40
Fresno	0	11.72	9.65	96	46
Independence	0	10.34	9.51	90	—
San Luis Obispo	0	26.89	20.48	82	42
Los Angeles	0	19.92	15.57	74	50
San Diego	0	12.55	10.01	66	52

How a Stock Breeder's Son Made Good.

What a pioneer sheep and cattle breeder did for the State and how, by intelligent management, a son has successfully carried on the work.

[Written for Pacific Rural Press.]

"When the late J. H. Glide founded, he founded well." Such was the expression of a California pioneer in recounting the important part the Glide Merino played in the early development of the sheep industry.

Later, as we interviewed his son, T. S. Glide, at his home ranch near Davis, from which he directs in detail the handling of his large flocks of sheep and herds of cattle, we appreciated the words of the old flockmaster. But while the pioneer had known the early Glide for his constructive sheep and cattle breeding, we were beginning to know him for his ability to raise a son—one who could take up the work where the father left off.

Likes Something Alive.—That he did found well in family as well as in livestock is shown by the younger Glide's, "No, I haven't any orchard, except a small one for family use. I'd never be satisfied on a grain or a fruit ranch. I like something alive. Animals keep you interested in your work."

Thornton Glide breeds Rambouillet and Shropshire sheep and Shorthorn cattle; because, like his father, he believes in them. He runs them on range land, because it is the most economical way. He is constantly striving to improve them by selection and breeding in order that he may have the best, as did his father.

The Father's Work.—Many of our readers know the Glide story; how the father came to the State in the early days and raised sheep in preference to mining gold; how he exerted a decided influence in the present French Merino type of sheep by breeding and selection; how this type was eagerly sought by range sheep raisers in all parts of the world; how he acquired immense areas of perhaps the best stock ranges in the State, gradually founding herds of Shorthorn cattle and flocks of Shropshire sheep; and how he came to be recognized as the premier breeder of livestock in his State, on the Coast, and in many ways in the entire country.

The Son Carries It On.—Thornton Glide started for himself in 1906, his mother retaining the cattle while Thornton and his brother took the sheep. In 1911 he also took the management of the cattle herds, picking 30 registered cows from the show herd before the Glide dispersion sale of 1911.

Between the lowlands adjacent to the Sacramento river and the mountain range back of Winters lay a strip of country 30 miles long. To fill this gap T. S. Glide made one of the few improvements in his father's system. He purchased 600 acres of upland, where his present home stands.

One Improvement.—Here he developed water, planted alfalfa, erected modern barns, a silo, and a comfortable dwelling. It is on this place that you find the show flocks and herds; and hundreds of young bulls and rams during sale season. Being midway between the two ranges it is also headquarters for the entire holdings of T. S. Glide.

It is here that the champions and other prize winners shown at the principal livestock shows under the Glide colors have been developed in recent years, except a few Shropshire sheep which were imported from England.

And it is this winning by Glide-grown and developed animals that is most prized by T. S. Glide; for it not only demonstrates the quality of the foundation flocks and herds, but it indicates that the son has been successful in perpetuating the quality of Glide sheep and cattle. Every grand champion Shorthorn at the hundreds of young bulls and rams which annually leave the Glide ranch for range service.

A Continuous Supply of Feed is an important consideration, in which also the senior Glide founded well.

Principally this is furnished by the lowlands, or tules. Much of this is overflow land; and as the water recedes in the summer months it leaves in its wake a green carpet of grasses on which both sheep and cattle pasture.

Late in fall and after winter rains have started, the flocks and herds are taken to the mountains, 30 miles distant, where another supply of nutritious green feed is growing; and where they are kept throughout the winter. Here they get added ruggedness which is a requisite of the range grower of beef and which



Scenes on the T. S. Glide ranch—Upper: Turning ranch over to University Students. Center: A Glide-bred Shorthorn just off the range. Lower: Merino and Shropshire ewes, residence in the background.

State Fair for the last 10 years has been a Glide Shorthorn and all but two of them have been Glide bred and raised.

Uses Prize Winners for Breeding.—With both sheep and cattle, the show ring has been but a stepping stone in the breeding operations. Long before his death the senior Glide decided that to maintain registered cattle in such large numbers as he required was too costly to be practicable. Accordingly the registration papers for most of his herd were destroyed.

That left the range stocked with purebred cattle; but did not necessitate the heavy expense of caretakers and herdsmen. To still further improve the quality of these cattle and sheep, smaller but representative show herds and flocks of registered animals have been kept.

The chief function of these has been to provide sires for the range flocks and herds. With but one exception all of the champions in the show ring have been used as sires on the range stock. This is why uniformly high quality prevails in the few breeders are so well able to supply.

The health of the Glide cattle is also an interesting point. Every tuberculin-tested animal has proved to be a non-reactor. All of these tests have been made by State or Government veterinarians.

While the ranch is one of the largest breeding establishments of its kind in the State, the selling of breeding stock is by no means the only revenue derived. Each year lambs, fleeces, and beeves are marketed in large numbers; for only the best animals are sold for breeding.

As we approached the barns to look at the show herds and flocks, we noticed an unusually large crowd in one of the corrals. "Those," Mr. Glide remarked, "are boys from the University Farm. They make several trips a year over here and I turn the ranch over to them. They need some place like this to study types and practices; and I'm glad to be of service. They are sincere in their desire to learn; otherwise they wouldn't pedal way out here on bicycles."

THE BASQUE SYSTEM OF SHEEP HERDING.

[Written for Pacific Rural Press.]

The Bedding Out, Blanket or Basque system of sheep herding as practiced almost entirely by Nevada sheep raisers is the most economical method of herding on open range lands according to the Forest Service of the U. S. Dept. of Agr.

Their experiments under the Basque system show a saving of 10 to 50 per cent in feed and a greater gain in lambs, of .05 pounds a day.

This system was originated by the Basco sheep herders who operate extensively in Nevada both for themselves and the American flock masters.

There are two ways in which the Nevada Basco herds his flock. One is to establish a camp as near the center of his feeding grounds as practicable. From here he works out in all directions, doing his cooking at the central camp, but after the first night sleeping away from camp with his sheep. This keeps the flock on new feed all of the time and does not necessitate driving them to and from camp night and morning. The latter method always occasions loss in feed and weight. Sometimes he works out from a central camp in this manner two weeks. Other times not so long.

The other method of Basque herding is for the Basco to bed out wherever night overtakes him. Each morning he breaks camp loads his outfit on a burro and starts his flock in the general direction of the next water course for the next night's camp.

Gradually, by both these methods, the flocks are moved from the winter quarters in the lower sections to the high mountain ranges, following the green feed as it becomes available till fall when they again move down to the lower altitudes.

While conditions are more adverse and the ranges more heavily stocked in Nevada than in California, sheep owners here are being urged to practice the Basque system that their ranges may have a heavier carrying capacity and that their lambs may be more economically produced.

WASHING WOOL.

To the Editor: Will you please tell me how to get the grease out of sheep wool?—E. B., Cayucos.

[Wool washing on the sheep's back is practiced in humid countries using stream water when it is running warm and the weather also warm. The sheep are actually washed in the stream or in long vats the width of a sheep, in which several can be put at a time, tandem fashion. Only pure water is used in such practices. The old Spanish method was to wash fleeces after shearing, with ordinary soap and water, and if one wanted a little wool for home spinning he could still do that. But, commercially, no wool grower washes wool. That belongs to the scouring establishments whose expeditious and cheap processes no grower could profitably imitate. If our correspondent wishes a home-use method of washing wool perhaps some reader will give advice on that subject.—Eds.]

Breeding Dual-Type Range Flocks.

[Written for Pacific Rural Press.]

The 1916 way of spelling sheep is D-o-l-l-a-r-s. This is perhaps the spectacular way of putting it, but it is the way nine-tenths of the people one talks to are thinking.

This condition holds true whether you talk to the man already "in," or the man who has fond hopes of getting "in"; the man with a large acreage of cheap land, or the one with a small acreage of high-priced land. In fact, it is difficult to classify them into "ins" and "want to get ins," for the very good reason that those who have sheep are trying to get "in" stronger.

Lambs Do It.—The lamb is the dominating influence in the present cry for more sheep, for his value has jumped from an almost inconsequental one-third of the sheepman's income to about two-thirds; and wool, even at present startling high prices, has to be content as a poor second.

These comparisons are based largely on the business of the large flock master, for while we are rapidly drifting toward sheep on the small farm, the present sheep profits are being reaped by the large operator.

But the fact that he is "in" doesn't in all ways simplify his troubles. On the contrary, the new order of things upsets the breeding system which dates back to the beginning of the American in the sheep-raising business in California in the early 60's.

Must Be Herders.—As far back as history goes in this State, the range-grown sheep has been of Merino breeding. Attempts have been numerous, and one might say continuous, to cross out the Merino blood by the introduction of other breeds, but always it has been necessary to revert back to that breed as a base, for the very good reason that none of the downs or coarser-wooled mutton breeds have developed herding qualifications to meet the range conditions.

As one gray-haired flock master recounts, "Instead of staying with the band, a Black-face seems to try to slip away and hide out." And to the shepherd on open range, nothing is more disconcerting than a flock of sheep that will not band well.

While their good herding propensities were responsible in a large measure for their popularity, the Merino was naturally a wool sheep; and by careful breeding and selection, together with favorable market differential between wool and mutton, both the Spanish and French Merino has been improved in size of carcass, ruggedness, quality of wool, and size of fleece.

To accomplish all of this improvement, years of work were required, intermingled with discouragements, changing demands from the manufacturer, legislative and range troubles, which space here forbids recounting; but which are still vivid in the minds of all sheep growers.

All of those struggles were mainly for wool. The American people had not yet become converts to mutton as a table delicacy, and the two or three year old wether who had yielded two good, full-year fleeces of wool before being sent to the shambles and the unfit ewes, supplied the market demands for mutton, even though they were of wool, rather than mutton breeding.

Consumer Particular.—The American consumer doesn't want heavy mutton. And that is the way sheep authorities account for the present popularity of the lamb in the market and the corresponding high price it has been bringing.

No More Wethers.—This develops the fact that the day of the wether is over. It has also incidentally developed a great, new source of profit to the range flockmaster whose open range affords transportation possibilities in reaching the lamb market. But it makes another complex breeding situation, equally as trying and perhaps more so than the breeding in and ironing out of wrinkles for wool in the past.



Ellenwood and Ramsay's flock of Romney, Lincoln, Merino, cross-bred ewes to be top-crossed with Corriedale rams, in the hope of getting a larger ewe, shearing a good quantity of wool, that will produce a quicker maturing lamb.

Not knowing whether the lamb factor was a permanent one or not, and facing a none too certain tariff revision on wool, the tendency has been to deplete the ewe supply by breeding to mutton bucks almost exclusively, the progeny of this cross going to market at an early age, rather than into the range band of ewes for future breeding purposes.

True, many far-sighted growers have kept up their ewe bands, both in Merino quality and numerically, by keeping two distinct bands; one, the larger, being bred to down or mutton bucks for the production of lambs; and the other, the smaller, being bred to Merino bucks, from which ewe lambs are taken to replenish the range flock of ewes.

Notwithstanding that this system allows of playing both ends against the middle it is not altogether satisfactory, because the first cross lambs are neither as large or as early maturing as the strictly mutton breed lambs. Neither does this first cross prove desirable for wool, so more attention has to be paid to the fleece as well as the lamb.

The Present Need.—Epitomized, the following extract from the National Wool Grower outlines the apparent need of the range flock master at this time. It says, "There is an imperative demand for a ewe with a large frame, good flocking tendency, capable of producing a lamb that is hardy and that will fatten cheaply, and herself producing a paying fleece—one that will protect her during the winter with density, to exclude our cold winds and the dirt they carry, and also of sufficient length of staple to make it always in demand at top prices."

Perhaps the Merino will arise to this occasion as they have to other occasions in the past. In fairness to them, it must be said that the great majority of flock masters in this country are pinning their faith to this possibility.



The claims for the Corriedale are that they have a large frame, are of good flocking tendency, produce large early maturing lambs and a long staple wood.

On the other hand, there are those who believe the New Zealand shepherd has developed a breed during the past 50 years that already fits the specifications. This is the Corriedale, sometimes termed a cross-bred; but in reality a breed by itself now, after continuous inbreeding and selection for many years.

Originally, they were produced by crossing either the coarse-wooled Lincoln or the Leicester onto the fine-wooled Merino. After the first cross, inbreeding was practiced with the progeny, and now it is claimed for them that they shear a long staple medium wool, are of large size with good herding qualities, able to raise a lamb that matures quickly, and makes good mutton.

A California Experiment.—The firm of Ellenwood and Ramsay of Tehama county was the first one to do any experimental work with this new breed, they having imported rams from New Zealand to be top-crossed on Romney, Lincoln, and Merino cross-bred ewes.

Like many present-day summer ranges, the one owned by this firm lies adjacent to transportation facilities, making it possible and highly desirable to market their lambs in mid-summer, direct from the range.

They believe that the Corriedale will be an improvement for their condition over the Merino, because the latter, at present, does not produce the early and quick-maturing lamb, and because they believe the demand of the manufacturer will be for a coarser and longer stapled wool in the future.

They recognize that the Corriedale in itself is not so good a mutton sheep as the regular mutton breeds, and they do not propose marketing the straight Corriedale lambs. On the contrary, they will maintain two bands, as they have previously done with Merinos.

Summed up, Mr. Ramsay has the following expectations of these sheep in California: that they will produce a good quality of wool, now preferred by the manufacturer, that they will produce a more profitable lamb, and that they will prove equally as desirable a herding sheep as the Merino.

After all is said and done, the present market situation has developed a new phase of breeding which seems to say to the prospective raiser, "Pay your money and take your choice." Unless the Corriedale proves a practicable solution of the problem, sheep raisers who operate on large areas of cheap land will probably continue with the Merino, sacrificing some on the lamb, but maintaining the wool-bearing and herding qualifications. The latter two will always be factors.

SHEEP POSSIBILITIES.

[Written for Pacific Rural Press.]

Is the sheep industry at its apex? Is it a good time to go in or a good time to stay out?

To answer these questions intelligently, the markets should be considered. Both locally and nationally Americans are becoming mutton eaters. Present living conditions call for small cuts and roasts. Mutton answers this purpose. The European war has proved a prodigious waster of wool; and industrial activity at home has promoted the more general use of wool in America. As to the world-wide supply, Roscoe Wood, writing in the Breeder's Gazette, says this: "Sheep raising and wool growing are declining in nearly every part of the world. Drouths have materially reduced Australia's wool production. South America's sheep population is decreasing. In our own country the range is being continually curtailed. While foreign wools affect domestic prices, the foreign competition of mutton has little influence on the price of lamb; for the quality of the frozen lamb from the Antipodes or the Argentine practically prevents it from competing with fresh American meat."

What Does It Cost to Produce Crops?

Suggestion of a basis for estimating cost of production submitted for approval or criticism by those who have considered the subject by study or through experience. Discussion is invited.

[Written for Pacific Rural Press by Prof. R. L. Adams.]

It seems to me that a study of cost of production constitutes the first step in a consideration of what a farmer should receive. The second step is to investigate whether he does receive that to which he is entitled, and if not, whether he can so regulate conditions as to secure it.

Elements of Cost.—Viewing farming solely as a business—eliminating for the time being the home aspect—and requiring from the product those items which any business man expects of his business, the items which enter into the cost of production are:

1. Cost of labor, material, taxes, and insurance required to grow and market the crop.

2. Interest on all investment, including land at present market value under forced sale, equipment, and operating capital.

3. A sum to offset depreciation of working capital wherever it occurs, as the wearing out of implements and buildings, and the aging of work stock and live stock.

4. A sum to constitute a sinking fund or emergency fund, to cover damage from fire, flood, drouth or accident.

5. A sum for management or executive ability.

A review of these items indicates that a farmer who secures a price sufficient to cover these five things—provided everything has been included which should be considered—receives payment for his time and labor, replacement of his investment where diminishing values may occur, and interest for the use of his capital.

Factors of Cost.—Viewed in this way, it is evident that with those crops limited in production by soil, climate, water, or acreage, thus resulting in a market demand greater than the supply, the price received by the grower may be greater than his cost—a bonus, which is one of the attractions of specialized farming. Such a man can usually take care of himself. But the man who is receiving less than his cost of production needs consideration. His betterment can be brought about many times not alone by better markets but in many cases by one or more of a number of ways which are well known to the general farming public. For instance, in individual cases, relief may be brought about by one or more of the following: (1) Improvement in labor conditions; (2) better financing; (3) increase in acreage; (4) change in cropping system; (5) increase of soil fertility; (6) better transportation facilities; (7) standardization of farm products; (8) reduction of land values; (9) inspection of products; (10) reduction of overhead expense; (11) reduction of operating expense; (12) introduction of live stock; (13) more intelligent management; (14) elimination of leaks.

Let us investigate, with figures assumed for the purpose, although even at that they are approximately correct, the cost of producing a box of apples, a sack of barley, and a box of oranges.

Apples.—Taking up the items as mentioned above for the usual crop of 150 packed boxes, we find that the cost of caring for a mature orchard—pruning, spraying, harvest, packing and hauling to market, runs about $94. This figure includes interest and depreciation on work stock and implements, but not on buildings, fences, irrigating plant (if one is present) or similar improvements.

The usual producing orchard is worth under present market conditions, about $800 per acre with all improvements. Seven per cent interest upon this valuation adds $56 to the acreage cost.

Depreciation for a one-man orchard, assuming that an experienced man should handle one hundred acres, will amount, let us say, to about $3 per acre when irrigation is not required.

Five hundred dollars is stated to be the extent of a sinking fund to be set aside on one hundred acres of apple land, hence a $5 per acreage charge is to be included.

If $1,800 is required to pay a good man for running one hundred acres, a further charge of $18 per acre is necessary to cover management.

The sum total thus secured amounts to $166 per acre as expense for the usual producing land. On the basis of 150-box yield, the cost per box is $1.11.

Barley.—In general the usual ranch devoted solely to barley production apparently averages about one section of growing grain annually. If the land is cropped two years in three, a total of 960 acres is required. The work stock, implements, wagons, and the like, necessitate an investment of $3,000. Cash for operating expense amounts to about $4,000, for a crop yielding an average of 12 sacks (1300 lbs) per acre.

Taking up the items in the same way as for apples, the figures stand, per acre:

(1) Cost of labor, material, taxes, etc., $6.93; (2) interest at 7 per cent, $ .77; (3) depreciation, $ .56; (4) sinking fund, $ .31; (5) management, $1.50. Total cost of cropped acreage, $10.07; add for working fallow land, $ .31; total cost, $10.38.

Dividing the cost—$10.38—by the yield—12 sacks—the cost per sack amounts to 87½c.

Oranges. — In similarly figuring the production cost of oranges, a good yield is assumed to be 400 packed boxes; the usual yield, 230. Out of 100 commercial producing orchards, not over 12 to 15 will produce "good" yields; and 40 to 50 "usual" yields. A very few of the remainder produce more than 400. The average value of the good crops, in the picking boxes, is figured at $700 per acre; $400 in the usual orchard.

The operating cost, upkeep, and harvest is averaged at $360 and $275 respectively; management, interest on operating capital, and depreciation $75. This leaves $265 as interest on investment in land, buildings and permanent improvements on good orchards. This pays 6 per cent on a valuation over $4400 per acre. For the usual orchard, $90 is left for interest on investment. This would make the value of the orchard not over $1500 per acre.

The time is ripe for a careful investigation into costs, based upon a unit farm for each of the principal lines of agriculture. What figure shall cover investment, interest, depreciation, management and entire cost of production should be known.

A carload of Lindsay Valencias sold lately in Boston at $4.35.

A knowledge of the cost of producing crops should be the first step in determining the price a farmer is entitled to receive for his product. During these days of agitation for better prices, much talk about the 27 cents, 35 cents, 46 cents, or whatever the figure may be that constitutes the farmer's share of the consumer's dollar, and a pretty widespread feeling that something should be done, how much thought is paid to what constitutes the real rights in the matter?

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32x3½	9.95	2.25	2.45
34x3½	10.95	2.30	2.55
36x3½	12.05	2.40	2.75
30x4	13.20	2.80	3.10
31x4	13.85	2.85	3.20
32x4	14.05	2.95	3.30
33x4	14.70	3.10	3.40
34x4	14.95	3.15	3.50
35x4	15.65	3.20	3.60
36x4	15.85	3.30	3.70
34x4½	20.25	3.85	4.30
35x4½	20.85	3.95	4.35
36x4½	21.25	4.10	4.50
37x4½	21.90	4.15	4.60
35x5	23.65	4.70	5.20
36x5	23.95	4.90	5.35
37x5	24.90	4.95	5.45

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Fruit Crops and Markets.

[Written for Pacific Rural Press.]

Frost, wind, and disease have reduced many crops since the last report. Rains cracked the cherries but they are mostly gone. Rains early in the season rotted apricots or prevented pollenization.

This report is based on tables prepared by chief deputy State Horticultural Commissioner Geo. P. Weldon from monthly reports of county horticultural commissioners. We include below figures from only those counties where 5 per cent or more of the State crop is grown. Subject to change by future conditions.

Almonds 20 per cent of normal in Butte account frost; 60 per cent Contra Costa account rain, wind, and insects; 65 per cent Sacramento; 40 per cent San Joaquin; 80 per cent Stanislaus; 75 per cent Sutter; and 65 per cent Yolo.

Apples 65 per cent in Monterey on account of frost, rains, and diseases; 80 per cent in Santa Cruz, frost; 75 per cent Sonoma.

Apricots 60 per cent Alameda; 25 Fresno; 50 Kings; 20 Riverside; 40 San Benito; 50 Santa Clara; and 40 in Ventura and Yolo. Rain in the early stages is given as the cause. Orange county reporting total failure. In Napa look better than last month.

Berries are 90 per cent in Alameda; 100 Fresno; 100 Los Angeles; 100 Orange; 100 Sacramento; 100 San Diego; 75 Santa Cruz; and 65 Sonoma. First time in 15 years Grass Valley Loganberries frosted.

Cherries 10 per cent Alameda; 85 Sacramento; 25 San Joaquin; 10 Santa Clara; and 25 Sonoma.

Figs 100 per cent in Fresno and Merced, 50 Stanislaus.

Grapes.—Most of the frost damage was to wine grapes. Full crops of table and raisin varieties are reported from all the principal districts except San Joaquin 70 per cent, Yolo 80 per cent, and Placer 33 per cent where American River grapes were in some places frozen back to the arms. Imperial Valley grapes will be moving next week. Merced best set in many years. Vines well cared for and sulphuring universal. No frost.

Peaches 50 per cent Fresno largely on account of disease and lack of attention last year; 90 Kings; 50 San Bernardino; 75 San Joaquin account previous heavy bearing, especially Lovells and Elbertas, many hanging in bunches at ends of limbs; 75 Santa Clara. Root knot and crown gall as well as little leaf and blight are the worst diseases on peaches in the State aside from wood decay.

Pears 65 per cent in Contra Costa where there has been a steady drop, no scab on Bartletts but much on one orchard of 10,000 boxes Easter Buerres; 25 per cent Lake account frost, heavy crop last year, and scab; 68 Sacramento account blight, scab, etc; 50 Santa Clara; 75 Solano; 80 Sonoma, account scab; and 80 Yolo. Grass Valley pears considerably frosted; Placerville and Placer looking better; some of the Sacramento orchards worst blighted two years ago are practically clean now and vigorous. Colusa pears short account rain. Mendocino 1-3 crop account frost and scab.

Plums 80 per cent in Placer where early varieties have been shipped as also from Solano (75 per cent crop). Early plums moving from Sacramento (65 per cent). A 30-acre orchard in Madera bearing this year. Los Angeles 1-3 crop.

Prunes 50 per cent in Santa Clara; 40 Napa; 35 Sonoma.

Walnuts 70 per cent in Los Angeles; 100 Orange; 65 Ventura; 50 Santa Barbara.

Market Prospects.—There is a general air of prosperity in the fresh fruit markets; the season is two weeks ahead of last year, and the quality of fruit is fine. The new standardization law is being rigidly enforced to the benefit of all legitimate interests.

Cal. Fruit Distributors report shipments to June 3 were 144¾ cars cherries, 100½ apricots, 20½ peaches, 67¾ plums and ½ pears as against 82½, 2½, 1½, 4½, and 00 respectively last year. Totals are 334 cars for 1916 as against 91 to the same date last year.

Early apples have been going East, cherries are nearly all gone, early plums, apricots, and peaches have been shipped. Bartletts from Sacramento river are going forward; and one grower expects to ship a carload about June 25.

In canning fruits, last year's output is nearly all sold and operators are competing keenly for the little of the 1916 crop not yet contracted. Some canneries will pack less than they want. The situation has given a feeling of almost overbullishness among some of the growers who feel that they can dry their apricots and freestone peaches profitably if canners do not come up to their prices.

Growers' organizations are a powerful factor in all dried fruits except apples and pears. Raisin growers have more holdover than last year but they also sold more than to this time last year. Peach growers are promised a fair price and will probably control both the crop and the price. Whether they can sell the entire crop at their prices remains the problem. Dried peaches in the East compete with dried apples, of which there is likely to be a surplus on account of difficulties in exporting fresh fruit. As dried peaches are sold, in U. S., mostly south of Mason and Dixon's line, and prunes north of it, these fruits are not such strong competitors. 1916 prunes are rather weak, probably because eastern buyers are hoping for a break in prices. There is not much doing in either prunes or apricots but growers seem to hold the whip hand provided they do not sell secretly.

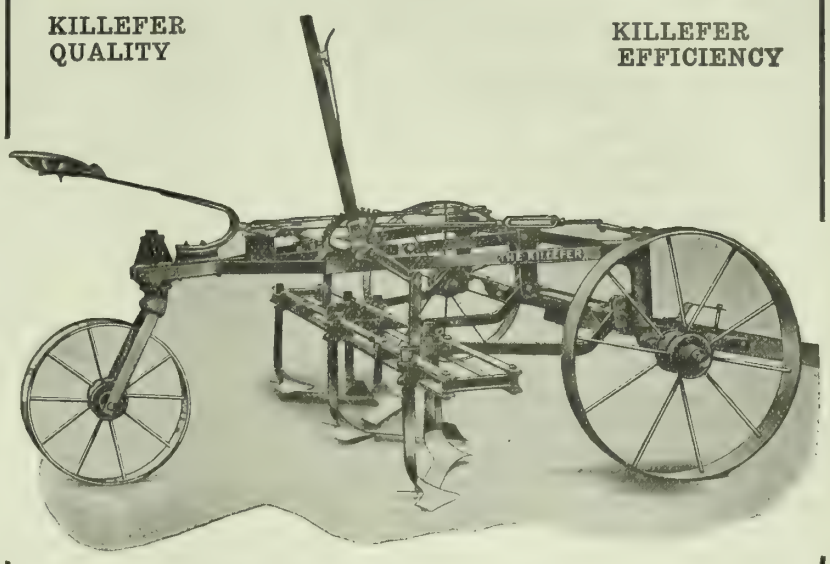
There is an element of danger in high prices. This is recognized by the Raisin Co. which attempts to keep consumer's prices down to where the crop will be moved this year. That they failed on Thompsons this year to accomplish this, may get people somewhat out of the notion of using them and it may require extra work, expense, and advertising to regain the consumption.

Sugar beets 16 inches long and 10 inches around at two months are being shown by H. E. Blaco of Chowchilla.

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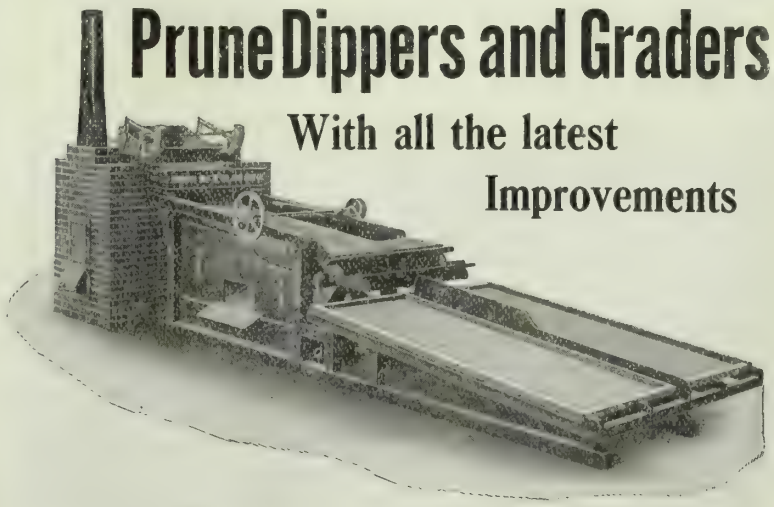
An important item for the Bean Growers' consideration is that all parts and repairs are easily and quickly obtained without the delay of sending East for them.

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Careful Apricot Summer Irrigation.

[Written for Pacific Rural Press.]

Summer irrigation of apricots in Imperial Valley is dangerous but necessary, according to H. S. Reed of El Centro, who has 4,000 seven-year Blenheim, Royal, and Newcastle trees, one of the best producing orchards in the Valley.

One danger lies in allowing the trees to suffer for water. "The sap goes down or evaporates, the bark contracts, trees become partially dormant. Then when water is applied, the sap rushes up, the dried bark can't expand fast enough, the sap bursts out, the sun cooks it and the bark under it, eventually kills the trees, and people generally complain of an obscure 'disease' as the cause of death."

Water Scalds Bark.—Another danger pointed out by Angel Sacellaris who has long worked for Mr. Reed, is that water applied in July is allowed to reach the tree. Then it scalds the bark. July watering is necessary, says he, to get good plump fruit buds on Imperial Valley apricots, but it should be run through furrows at least four feet from the tree. Water may be allowed to soak within two feet of the tree. It does no good to get nearer. September flooding may be safe if not too warm.

Water After Fruit Off.—Mr. Reed emphasizes the need of irrigation when the fruit is about an inch in diameter and the pits starting to harden. Then is the greatest draft on the tree. No more irrigation is permissible until the fruit is off. Then he says the water must be kept from the trunks or they scald, the leaves drop perhaps within 48 hours, the roots die and blacken. This has happened to thousands of young trees in the Valley.

Unequal Soaking.—Mr. Reed has noticed as water flows through furrows in what seems absolutely uniform soil, it soaks much farther at certain places than elsewhere.' Trees on such places are endangered.

A post hole digger is used not only to know whether the water is going deep enough, but to know where it is going close to the trees.

Alkali and Irrigation. — Everywhere in a country which has been desert, one may suspect alkali. Usually after a few years of irrigation, the alkali comes to the surface. E. Steiner's place on the bluff overlooking New River near Brawley is no worse than the rest, but he has observed alkali collecting along the ridges between furrows after repeated irrigations. He has 600 Blenheim and Newcastle trees three years old, planted on an old alfalfa field. They were uniformly 4 and 5 inches in diameter at exactly three years old, but of one row accidentally set where an alfalfa check had been, over half of them died. The replants lived because Mr. Steiner's system of irrigation had "dissipated" that alkali. He irrigates usually by furrows. But once or twice a year he floods the orchard to "equalize" the alkali through the soil so that it is too weak to be harmful. Sometimes this flood is drained into the river to actually reduce the alkali. This flooding is not done in hot weather. No alkali is seen for four or five months after such treatment.

Mr. Steiner's fruit buds were not so plump last spring as Mr. Reed's or Mr. Erickson's, due as he said, to neglect of irrigating enough in Sept. or Oct. while fruit wood under good conditions would have been still developing.

PEAR TWIGS DYING.

To the Editor: We have young winter pear trees that seem to be blighted. They grew well for first two years, then limbs began to die back. They have been well taken care of, sprayed with winter spray and summer spray of arsenate of lead for slugs.

We are planning to dig them up, but would like to save them if there is a remedy for this trouble.

This valley is considered an ideal place for pears, both summer and winter varieties, and we have raised them successfully, with this exception.—A. M. S., San Juan Bautista.

[If the dying twigs on your trees hold their leaves long after they are dead and the leaves turn black, you probably have pear blight.

All blighted twigs or limbs must be cut off several inches below the last sign of discoloration of the inner bark, and the shears, as well as the cut surfaces, disinfected with a 1 to 1000 solution of corrosive sublimate, carried preferably in a glass or earthenware jar, as the sublimate is quickly weakened by attacking metal containers and even wooden containers. The use of a swab also weakens the disinfectant properties of the solution in time, and the best way to disinfect the tools is to dip them in it.—Ed.]

Surveys have been made for bee pastures in the Santa Barbara national forests, and permits will be issued for each suitable location at $10 per year for 50 hives or less. Permits for 2500 hives have already been issued.

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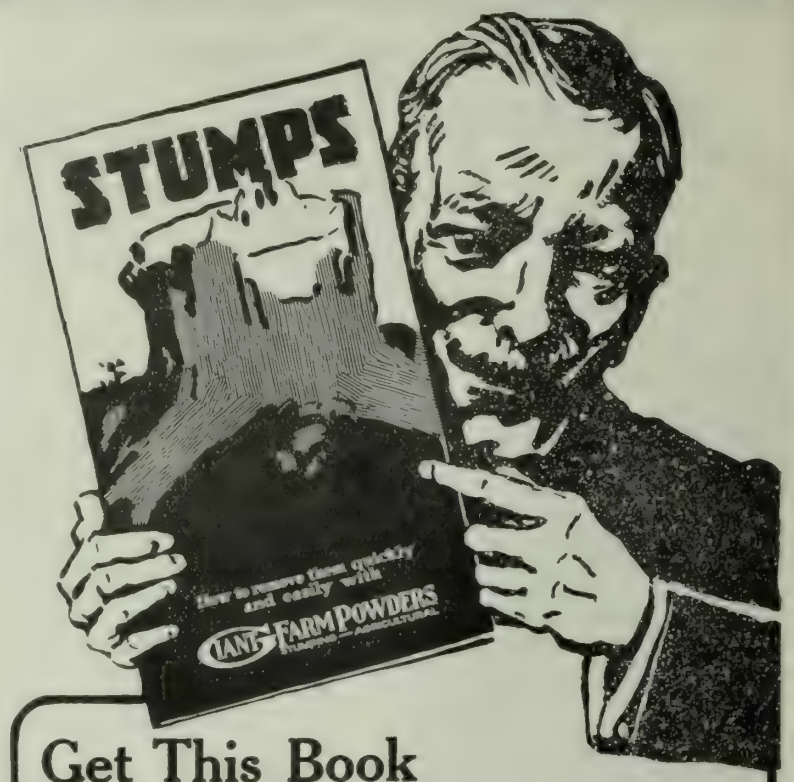
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Principles of Jelly Making.

[Written for Pacific Rural Press by Prof. W. V. Cruess, University of California.]

(Continued from last week.)

Acid.—A jelly stock should contain near 1 per cent acid to give the best jelly. This is enough to give a "tart" taste. The amount can be roughly judged by taste when it is known that lemons carry about 7 per cent acid. By diluting one spoonful of lemon juice with 6 spoonfuls of water, a mixture containing about 1 per cent acid results. A little practice in tasting various stocks and noting their jelling qualities will make it possible to judge whether enough acid is present or not. If the acid is too low, lemon juice may be added, or other acid juice blended in.

Sugar.—The final jelly should contain about 65 per cent sugar. Some of this sugar is in the fruit, but most of it is added. A jelly may often be made with less than this amount of sugar, but it will not keep. Sixty-five per cent sugar is necessary to prevent fermentation and spoiling of the jelly in other ways. Nearly this amount of sugar is required to cause the pectin to jell.

If one cup of sugar is added to one of the jelly stock the mixture must be boiled a long time to drive off the water and in this way concentrate the liquid until the required per cent of sugar is reached. This long boiling results in loss of flavor. It is better to have a jelly stock rich in pectin and then add 1¼ to 1½ cups of sugar to 1 of juice. In this way, the boiling period is shortened and the flavor will therefore be better. In fact it is perfectly possible to make jelly from currants or berries without boiling at all by pressing the fruit after heating to 180 degrees F., adding 1¾ cups sugar to 1 of juice, heating to 180 degrees F. and pouring into glasses. A rich flavor is retained by this method.

The Jelling Point.—The mixture of sugar and jelly stock is ordinarily boiled until it will "jell." This point may be determined in several ways. The most common way is to dip a large spoon into the boiling liquid and let the juice drip from it. If it "sheets" across the spoon and hangs in broad sheets from the lower edge, it is done.

A more reliable method is to use a thermometer. The thermometer's boiling point in water is first found by heating a little water to boiling and inserting the thermometer in the boiling water, leaving two or three minutes and reading top of column. At sea level, an accurate Fahrenheit thermometer will indicate 212 degrees F. and a Centigrade thermometer 100 degrees C. This point is determined once only and is necessary because many thermometers are not accurate and because at points above sea level, water boils below 212 degrees F. The thermometer can then be used on the boiling jelly stock. The bulb must be inserted to the bottom of the pot. When the jelly boils at 9 degrees F. or 5 degrees C. above the boiling point for water, it is done. At sea level the jelling point is 221 degrees F. and 105 degrees C.

This method is used by large jelly manufacturers and gives a sure method of control.

If a temperature much more than 9 degrees F. above the boiling point of water is reached, the sugar becomes so concentrated that crystals form in the jelly.

Filling Glasses.—The hot jelly may be strained through cheesecloth into glasses; straining avoids the necessity of skimming off of coagulated albumen, etc., formed during boiling. For home use, melted paraffine poured on the jelly in the glasses while the jelly is still hot is the most satisfactory way of protecting against mold.

CANNING RIPE OLIVES.

To the Editor: I would like to can ripe olives at home so they will keep.—C. I. L., Upland.

[Answered by Prof. W. F. Oglesby, University of California.]

[Can them in the same way as other fruit, only use brine instead of syrup. Heat to boiling, one pound salt per 4 gallons water. Then put the olives in, cook 10 minutes, and seal them. Better still is to put the olives and hot brine in the cans before cooking. Of course the bitterness must be removed previously.]

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Help get it! Go after your friends and neighbors. Get them to sign. Get them to subscribe for stock. It will be the best application of your time possible.

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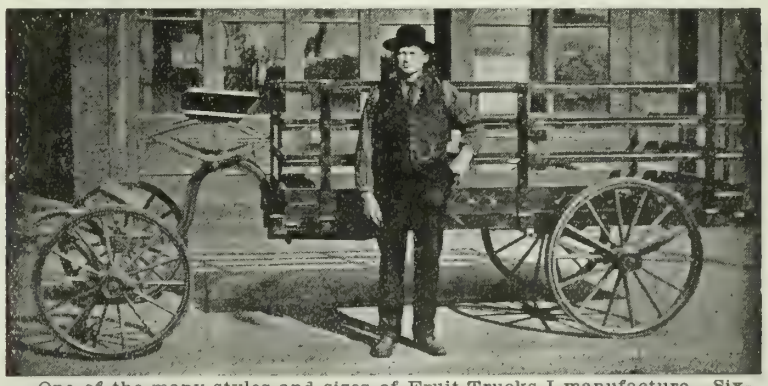
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1916 SMYRNA FIGS

Mr. Grower, how many will your trees produce this season? They have brought as high as ten cents per pound in the sweat-box on account of the war interfering with importations. You have done your pruning, plowing, irrigating and cultivating, but this expense will be wasted, unless your secure a sufficient supply of **PROFICHI FIGS** of the right varieties. The Mamme crop was short this season and the **PROFICHI** crop will be short as a consequence. I have a larger Capri orchard than my Smyrna trees require and will have a surplus of **PROFICHI FIGS** for sale. After spending your time and labor to secure a crop, can you afford to lose a $200 a ton crop by neglecting to secure the necessary **PROFICHI FIGS?** Limited quantity, June delivery, for sale. Order now.
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Irrigation Ditch Bottoms Level With Land

[Written for Pacific Rural Press.]

The trick in building irrigating ditches is to have the bottom of the ditch on the same level as the land that is to be watered, according to E. Harter, ranch superintendent for A. B. Humphrey at his large Berkshire and Guernsey breeding establishment near Escalon, San Joaquin county.

Mr. Harter has superintended the leveling and checking of 250 acres of alfalfa land. After leveling for the checks, he runs a regular railroad grade where the ditch is to be located, the top being level with the adjacent land.

After this is finished he adds a 10 inch fill on top, the entire length of the proposed ditch. This fill is then made into banks two feet high with a scraper, making the top of the original grade the bottom of the completed ditch. With this arrangement the ditch does not have to be filled with several inches of water before irrigation of the land is started; and neither is there much left in the ditch after the water is turned off. The ditch drains completely right after the water stops running.

Another feature of Mr. Harter's ditches is the six foot width at the bottom. When water breaks through gopher holes, etc., he opens all the gates, lowering the water in the ditch and making it easy to repair the hole.

Another advantage of the wide bottomed ditch it is accessibility for a mowing machine in cutting weeds on the ditch banks. Usually a scythe is used to do this work but Mr. Harter can drive a mowing machine down the bottom of his ditch and in two trips cut all of the weeds on both banks.

EASY MONEY.

To the Editor: The following explanation of how a rural credit concern operates in this state was given to the writer recently:

The company was organized and incorporated under the state laws. Shares were issued and sold to the amount of $88,000.00 to pay 8 per cent interest.

The farmer who wishes to borrow $1000 from this corporation gives his note for $1,200.00 secured by a 1st mortgage on his property and receives $1000.00.

He pays from this time on, until he is able to pay off the loan, 6 per cent interest on $1200 or $72 per year, which is 7 2-10 per cent on the $1000.00 actually borrowed.

If he is able to pay back the $1000.00 at the end of 12 months, he pays $1200.00 plus (6 per cent) $72.00 or $1272.00. In other words he pays $272.00 for the use of $1000.00 for one year, which is 27.2 per cent, whereas $1000 at 6 per cent would have cost him only $60.00.

The loans are made to cover a period up to 10 years. Supposing the farmer should pay up his loan at the end of any year from the 1st year to the 10th or expiration of the loan when he is subject to the usual foreclosure, we have the following schedule of interest which he has been obliged to pay annually.

$1000 borrowed on the basis of a $1200 note bearing interest a 6 per cent—1st year 27.2 per cent; 2nd, 17.2 per cent; 3rd, 13.8 per cent; 4th, 12.2 per cent; 5th, 11.2 per cent; 6th, 10.5 per cent; 7th, 10 per cent; 8th, 9.7 per cent; 9th, 9.3 per cent; 10th, 9.2 per cent.

This is a simple exposition of how crafty high finance is worked out for the farmer's benefit.

You will observe that the farmer who is unfortunate enough to be able to pay back his loan at the expiration of the 1st year is rewarded by being charged over 27 per cent while a running debt for 10 years lets him out to the tune of only 9.2 per cent.

Officers' salaries, overhead expenses and interest to stockholders have to be paid. These items are met in the sweat of the summer's sun, in the face of drouth, flood, frost, blight, mud, and pest.

God helps those that helps themselves if they only know how to dip in. That is the main thing!

Wm. Curtis Clark.

HOT-BEDS TO START CANTALOUPES FOR FIELD CULTURE.

[Written for Pacific Rural Press.]

Hot-bed plants for a perfect stand of early cantaloupes are very profitably raised by D. C. Smith of Ripon, who has been experimenting three or four years.

Last season he planted over six acres from the hot bed. Two weeks later he found just 40 hills to replant. In April our representative noticed that the vines were making a splendid thrifty growth and a number were in bloom. At the same time, those starting from seed on the same place were just coming through the ground. Comparative costs and profits are being kept.

Mr. Smith plants in small pasteboard frames in the hotbed. In transplanting, he sets frame and all quite deep for sake of moisture and removes the frame before filling in the dirt. The plants do not wilt down.

LAYERING FEIJOA TREES.

To the Editor: I wish to propagate from an Andre feijoa tree by layering. Should the shoots be partially severed in order to make them callous over and send out rootlets; or is all that is necessary to simply heap earth around these shoots at the base of the tree? At what time of the year should such shoots be layered. How long will it take them to root? The tree is a layered one, so shoots from the base will be of the right variety.—C. R. C., Proberta.

[Answered by F. O. Popenoe, Altadena.]

[The best method of layering the Feijoa trees is to bend the lower limbs down and fasten them into scooped-out places in the ground. A forked stick with one end longer than the other may be driven into the ground to hold the branch down firmly. Cover with three or four inches of earth. The best time for this work is in the fall, but it can be successfully done at almost any time of the year. The shoots should not be partially severed until they have made some roots. Then, by making a cut in the branch between these new roots and the main tree, the top growth of the new plant is increased. Two or three months will be required for the layered branch to start out the new root growth, and during this time the ground, while it must not be kept wet or soggy, must never be allowed to dry out, and should at all times be moist.

The layering of the upper branches may also be successfully worked, but the process is more difficult. A frame must be built up to hold boxes of earth or moss into which these upper branches may be fastened and then in the same way these boxes of earth or moss must be kept moist.]

ACRES OF WILD FLOWERS INCLUDE 225 SPECIES.

[Written for Pacific Rural Press.]

When we described the five acres of native California wild flowers in Los Angeles Exposition Park early last spring they were not so lovely nor so suggestive as now. The county supervisors contracted with Theodore Payne, who has devoted most of his life to California wild flowers, to prepare the ground, plant it on artistic wild landscape gardening lines and care for it two years. The result is a condensed education as well as a creation of beauty 'mid city surroundings.

Water Pipe

--100,000 FEET--

New and slightly used. All pipe has new threads and coupling.

NEW STANDARD BLACK PIPE.

Prices quoted per foot:		Cts.
30,000 feet	2 inch	.13½
10,000 feet	1½ inch	.11½
10,000 feet	1 inch	.07¼
10,000 feet	¾ inch	.05¼
10,000 feet	½ inch	.04¼

NEW GALVANIZED PIPE.

2,000 feet	1¼ inch	.14
10,000 feet	¾ inch	.07½
10,000 feet	½ inch	.06

RIVETED DIPPED PIPE.

1,000	feet new 20 inch	.75
1,000	feet slightly used 10-inch	.35

Prices quoted on new pipe subject to change without notice.

SLIGHTLY USED PIPE AND CASING.

10,000 feet	2 inch	.10
20,000 feet	1½ inch	.06½
5,000 feet	2½ inch	.15
5,000 feet	3 inch O. D. casing	.14
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Many other sizes to select from.

We also rent pipe. Immediate shipments.

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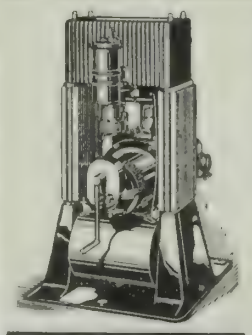
ELECTRIC APPLIANCES in the household, not only add to the convenience of all members of the family, but they are economical and time-savers. **ELECTRIC APPLIANCES** include **CHAFING DISHES, COFFEE PERCOLATORS, VACUUM CLEANERS, ELECTRIC IRONS** and every other appliance that is needed in the modern home, not forgetting **ELECTRIC FANS.**

We carry these appliances in many of our branch offices, and will be glad to have you call and inspect them. Where we do not carry them we will be just as glad to give you our expert advice.

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Electricity for Farm Homes

NO BATTERY

Size of complete unit 24 in. by 25 in. and 42 in. high.

CHEAP FUEL

Will operate 50 lights 7½ hours on 1 gal. mixture of 80 per cent coal oil and 20 per cent gasoline; cost 11c. No cost to install; operation cheapest on the market.

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Advice in matters of electrical and mechanical transmission. A first-class electrical repair shop maintained. New and used motors and generators on hand.

END the Morning Glory PEST with *Nonpareil*

"We have given Nonpareil a very good trial and find that it destroys not only morning glory but also horse radish. We consider it a thoroughly satisfactory weed exterminator."
—Luther Burbank.

If you want full profits from your crops you should use Nonpareil. It is easy to apply and economical to use—one gallon is sufficient to kill 250 plants. It does not injure the ground but acts as a tonic. It is the most successful weed killer known. Write today for interesting folder.

WHEELER REYNOLDS & STAUFFER
625 California Street San Francisco, Cal.

Why Tepary Market is Poor.

To the Editor: In your issue of May 20, I note an article entitled "Tepary Market Poor." At present the tepary market is poor for two principal reasons: (1) There is a prejudice against the tepary bean as a substitute for the small white largely because its value in comparison with the small white is not thoroughly understood. The tepary bean contains a higher nutritive value than the small white, and in addition, has the peculiar quality of giving 40 per cent more bulk when used for canning purposes than the small white.

Cooked Differently.—Many persons who have tried to cook the tepary bean as other beans are cooked have been disappointed. To educate the consumer concerning the value of this bean we have collected and are publishing a number of recipes which will produce a most delectable dish when carefully followed. [Recipes in Home Department.]

Need Carload Lots. — The other reason why the tepary bean has not found a better market has been that it has been produced in such small quantities that it has been almost impossible to secure a carload lot in any locality. If enough farmers were to plant five acres apiece, in the aggregate there would be sufficient to ship several carloads in many localities, and yet no farmer would run the risk of losing very much in case of failure for any reason.

That these beans are so very drouth resistant and will produce a good crop where the small whites are a failure, is bound to make them increasingly popular throughout the entire Southwest; and more of them will undoubtedly be grown every year in Texas, New Mexico, Arizona, Colorado, and California. Therefore, the thing for the bean growers to do is to get busy immediately and endeavor to establish a standard staple market for this bean.

Plant Only White Teparies.—One word of caution in connection with this bean, and that is that only the standard white tepary should be grown. In planting seed, beans which have a tendency to be yellowish in color should be discarded, and so far as possible pure seed should be secured. In Arizona we distributed last year some seed of the pedigreed strain known as the Arizona Tepary No. 17. A considerable supply of seed was grown from this distribution and will be planted locally this year. In addition, we are distributing more seed of this strain. We would suggest that the California bean growers demand the Arizona Tepary No. 17 so that they may be insured of securing a purebred, high-yielding tepary. **S. F. Morse.**

University of Arizona.

DRY-FARMED INDIAN CORN FOR SILAGE.

[Written for Pacific Rural Press.]

June feed was needed so badly one fall for his herd of seventeen Jersey cattle that G. W. Dimmick of Sonoma county began using silage as soon as it was cut. The green corn he had been feeding was not so well eaten as the fresh silage, although both methods involved waste until the remainder was well fermented, when none was wasted.

The silo was a new one, but previous experience bade Mr. Dimmick cut up his corn before it should dry up in the field. Half of his twenty acres were planted to Eastern seed and produced but little feed. The rest filled the 14x24-foot 71-ton silo.

After August 31 each animal had eight pounds of silage twice a day and 2½ pounds of dry alfalfa meal moistened, besides what dry grass they would pick up in pasture.

The corn, a white dent, was planted for silage by hand three feet ten inches apart each way. There is seldom any rain after the planting in the last of April, so the corn must be placed deep in moist ground. Mr. Dimmick thinks one plowing is enough if done in the spring and followed by four harrowings and one clod-mashing. His soil is a loamy adobe. He cultivates four to six times and cuts when the kernels are in the stiff dough just before denting. Since grass comes in Sonoma county in November, not all of the silage is fed this fall. To keep it from spoiling ten inches to two feet before he begins feeding next summer the top of the silage is wettened and barley or other grain or cheat are sown to make a sod which preserves it.

SUDAN FOR SEED.

[Written for Pacific Rural Press.]

A man who subscribed to Pacific Rural Press last October in Inyo county has failed to look over the headings of the articles since Jan. 1, 1916. He asks several questions about Sudan grass which have been answered during that period. We would refer him to pages 64, 177, 225, 251, 291, 353, 417, and 459 of the 1916 issues. And he forgot to sign his name.

Plant sudan grass in drills if seed is scarce or broadcast if time is scarce, which it is now.

Frost kills the young plants like corn, but if they have made the "button" they will usually sprout again. Sudan may be cut for hay about 60 days after sowing under fair conditions, when it is 2½ to 3 feet tall, coarser for horses if desired, than for cows or hogs. Then if only hay is needed, cut about every 30 days. If seed is desired, let the second crop do it, for there will be more seed than would come on the first crop. Under fair conditions of soil and moisture you may get 1½ tons of seed per acre whether drilled or broadcasted, as it stools freely. If planted in June there will be some danger that seed on the second crop will not mature before the fall rains. Sudan yields more than alfalfa dry farmed, and less than alfalfa irrigated. It contains less protein and is sweeter than alfalfa.

MAY IMPORT PECANS.

To the Editors: Are we allowed to import pecan nuts, buds, and trees from Florida?—J. D. N., Modesto.

[Answered by E. Clare Dutton, State Commission of Horticulture.]

[They may be imported if the regular horticultural inspection on arrival in your county shows them free from disease.]

Beaumont early apple shipments will begin soon.



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Bates Steel Mule

"One Man Tractor"

THE BATES STEEL MULE is the only machine in the world that replaces horses. It has been in the hands of farmers all over the world for the last several years, and stands today without a rival.

No other tractor in the world goes into the owners' hands guaranteed as is the BATES STEEL MULE, and the only reason it is so protected is because the quality and durability of the material in its make-up is so good that its manufacturers can afford to give this extraordinary protection:

Guaranteed for four years from its head to its tail and a perpetual guarantee on its crawler.

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Write us and let us give you free interesting information on how the BATES STEEL MULE will pay for itself in less than one year.



Free Catalog on Request

Bates Steel Mule Company, of California

320 N. San Pedro Street
Los Angeles, Cal.

Mechanical Power on the Farm.

AUTO CRANKSHAFT CONNECTED TO MACHINERY.

[Written for Pacific Rural Press.]

Many people are putting belts onto the rear wheels of their automobiles to run saws, silage cutters, hay choppers, fanning mills, separators, concrete mixers, hay presses, pumps, etc. This works all right but puts severe strain on the transmission sometimes.

To take the power directly from the crankshaft a device is now made back east. It is all ready to bolt onto Fords with bolts already there, and can be adjusted to other ma-



Cutting silage without hurting automobile.

chines. It may be taken off in a few minutes, and as easily put on again.

The device consists of an extension rod connected to the crank shaft to hold a belt wheel just beyond the front line of the front tires. A smaller pulley on this rod runs a fan to cool the radiator. A crank handle is fitted in front of the belt wheel to start the engine. It does good work up to 10 h.p. without straining the machine.

STATE WANTS TRACTOR OPERATORS.

Applications for employment as Farm Tractor Operator in the service of the State will be received at the office of the State Civil Service Commission, Forum Building, Sacramento, on or before June 24, 1916. The salary is $45 a month, with room and board in addition.

This examination is open to all American citizens residing in California who are between the ages of 21 and 60 on the date announced above and who meet the requirements.

A candidate must have had at least one year's recent experience as a gasoline tractor operator, should be able to make his own repairs, and have had experience in working land.

No written test will be required. Candidates will be rated upon their experience and upon an oral examination to be conducted by a special Board of Examiners designated for the purpose by the Civil Service Commission. After all the applications have been reviewed, candidates will be notified when and where to appear for the oral examination.

SEPARATE PUMP FOR BARNS.

It is not always convenient to raise the irrigation water high enough to use around the barnyard. This is the case with W. S. Rosecrans of Los Angeles county. He has Layne & Bowler pumps for irrigation at a well distant from the house. For home and dairy use and to water the stock he has a little 2 h.p. General Electric motor located under a large water tank and connected by belt to a pump several feet distant. The pump is on a concrete foundation,. but to avoid the strain which would tend to rack its belt wheel, the axis of that wheel is extended to a boxing on a separate concrete pedestal. The belt wheel runs a small cogwheel on each side of the pump. The small cogs run large ones. These are connected to the arms which work the pump rod.

Air Pump Uneconomical. — There is also a motor-driven air compressor irrigation pump near by, which Mr. Rosecrans says is only 25 to 30 per cent efficient as compared with 50 to 60 per cent efficiency of the centrifugals. However, it is valuable where the water lift is only 20 to 30 feet, or where there is so much sand in the wells that it would wear out ordinary pumps. As the water-lift here is 75 feet, the air pump is not used.

WINDMILL TANK OUTFITS.

[Written for Pacific Rural Press by Wm. Curtis Clark, Oakland.]

A combination tank and windmill frame, which supports a mill mast at one side of the platform, is excellent.

See that all braces and girts are flushed with the outside of the main supporting posts so that the frame may be enclosed with siding to give extra storage or cooling room at little extra cost.

Do not make the mistake of using very small main pipe from the tank, because the friction will choke down the pressure delivered to your house and hose nozzle and entirely destroy the expense of putting your tank up in the air.

If possible use 1½-inch pipe or at least 1¼-inch for 100 feet, reducing to 1-inch and then to ¾-inch at the house for the domestic system.

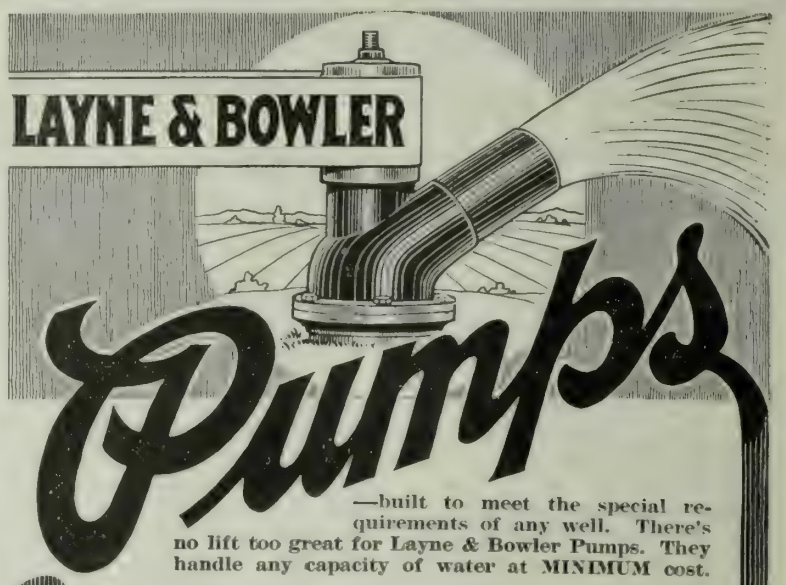
If you have trough capacity for one full watering it is all right to use ¾-inch run to a ball float valve in trough, but if flushing pressure is desired in the stables it is better to use 1-inch pipe to hose bibbs.

Never tap the tank through the bottom. Let the discharge come through the side 4 inches to 6 inches above the tank bottom so as to leave a settling space for sand or sediment that may be easily cleaned out at intervals without getting into the faucet valves.

Use a "full way" gate valve on the main supply pipe beneath the tank so that the water may be cut off for washer renewals and repairs.

Redwood stave tanks are giving





—built to meet the special requirements of any well. There's no lift too great for Layne & Bowler Pumps. They handle any capacity of water at MINIMUM cost.

Consult Us Before Having Your Well Drilled

Unfortunately, many wells are sunk prior to giving much thought as to the kind and type of pump to be used. The idea that the essential thing to be considered is to secure a well that will produce a sufficient quantity of water and then select a pump, is wrong. The sinking of a well is the first cost, but the pumping cost is continual, therefore, the question of selecting the right pump should be duly considered beforehand.

We would especially recommend that you consult us before having your well drilled, as we can materially assist you. It is a common error to drill wells that are too small in diameter to permit the installation of the style of pump that will give the best efficiency for the amount of water it is desired to handle. It is surprising how few owners of pumping plants realize the enormous saving that an efficient pumping plant will make or who are really aware of just what the efficiency of their plant is.

We have authentic data on file regarding water conditions all over the country, and will be glad to place it at your disposal at any time. Our engineering department is at your service to assist you in solving any irrigation problems that you may have. This original Layne & Bowler service is free and places you under no obligation whatever.

Write for Catalog No. 25.

Layne & Bowler Corporation

900 Santa Fe Avenue, Los Angeles.

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For Water Deep Under The Ground

Jackson Deep Well Turbine Pumps give continuous and efficient service. They do not get out of order as they have no valves or plunger rods. Very little care or attention needed as they are oiled from the surface. Are much lower in cost than other types of deep well pumps when the expense of dug pits, cribbing and timbering is reckoned. They raise water from the very bottom of the well, thus eliminating heavy vacuums and delivering all the water the well yields. They develop slow wells and increase their flow.

Like all Jackson Made Pumps These Deep Well Turbine Pumps Are the Very Best Pumps Made for the Purpose—They are Dividend Earners, Not Expense Makers

Whatever your water problems may be our Expert Pumping Engineers will help you out free of charge—write

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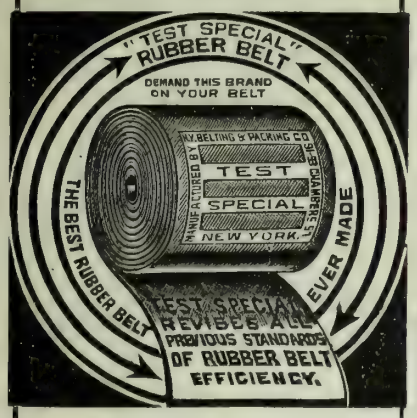
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When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a **free sample** of **Test Special** together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

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Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

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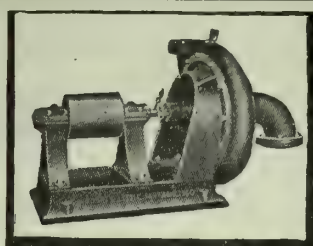
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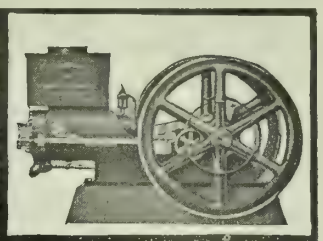
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Pipe, Pipe Fittings, Brass Goods, Tanks, Wind Mills.



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good service and in some locations there is a saving in cost with freight.

In laying out the frame plan be sure to provide the right offset to center the mill over the well and offset the tank on the platform a sufficient distance from the mill mast to allow clearance for the power cut off lever to work up and down alongside the tank.

DRAINAGE DITCHES DUG BY EXPLOSIVES.

[By J. R. Mattern of the Giant Powder Co.]

Under proper conditions, digging drainage ditches with explosives, saves much time and hard work. Economical ditch blasting can be done only when the ground is wet. Yet if it is too wet, experience has shown that a successful ditch can not be made. For instance, in muck swamps where the material was semi-fluid, the explosives threw out enough material to leave a ditch, but the banks immediately moved in and closed up the cavity.

Sandy soil offers another problem. When there is just enough water to bind the sand and what little loam and clay may be mixed with it, and not enough to make the sand soft, ditches can be blasted out very effectively and satisfactorily. Place the charges shallow enough so they do not send their force to useless depths in the softer subsoil. Do not try to blast ditches in dry sand, though if you cannot wait for the wet season and you are willing to meet an increased expense, you can blast ditches through dry clay or heavy loam.

The most economical and satisfactory soils in which to blast ditches are the lighter clays, or heavy loams. Here whenever the ground is water-soaked, or even fairly moist, the results of blasting are surprisingly good. One reason probably is that the substrata of earth nearly always are solid and gas-resisting.

AUTO REPAIR KIT.

[Written for Pacific Rural Press by Wm. Curtis Clark, Oakland.]

The repair kit furnished with the car is supposed to be complete, but we know it is not, by hard experience.

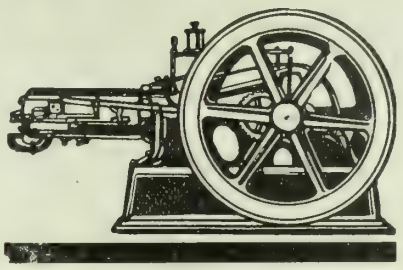
Here are a few additions that every driver ought to have with him.

A box of assorted cotter pins, box of assorted A. L. A. M. nuts, box of assorted spring washers, roll of friction tape, spool of No. 18 or No. 20 gage flexible steel wire, 25 feet of ⅜-inch hemp rope, 25 foot coil ⅜-inch wire cable, three lengths of baling wire, and ½-doz. extra spring tire valve cores.

A new crescent wrench is now made double ended combining two sizes in one. This is a very handy and economical tool.

When you inflate a tube or tire never forget to put a drop of spittle on the end of the valve before screwing on the cap. If a bubble forms you will know that the valve is not air tight.

Economy



ECONOMY that is real economy. Economy in fuel, in the greater amount of power generated for a given fuel expense, in reliability, endurance, and in every quality that spells engine satisfaction, is built into the

Commercial Engine

The Commercial is always ready when you want it. The parts are few—the operation simple—breakdowns almost unknown. It is designed and built for fuel and service conditions of the West. Most rigidly inspected, and sold under the strongest guarantee that we know. Tested and proven by years of service. Write for Catalog explaining construction, and containing testimonials, and irrigation data FREE.

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No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts means less friction and greater efficiency.

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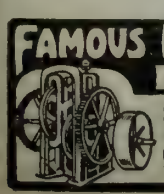
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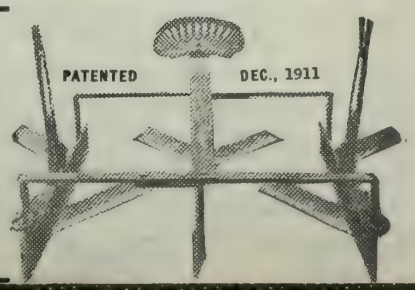
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Correct in every detail. No trouble. Cheaper water Perfect satisfaction. 2 Irrigation Booklets free. Luitwieler Pump Eng. Co., 713 N. Main St., Los Angeles.

GOLDEN GATE WEED CUTTER AND MULCHER

Farmers, order early if you want the Golden Gate Weed Cutter and Mulcher, as the demand this year will be great, as it not only cuts weeds, but kills them, and leaves finely pulverized top soil. Cuts any depth. Prevents evaporation by working under the soil without disturbing soil on top. Write for circular. C. G. SIGURD,
Capitol Avenue and McKee Road, San Jose, Cal.



General Agricultural Review.

GRAIN AND FIELD CROPS.

An entire section of 640 acres in rice has recently been planted near Corcoran.

E. S. Emmett of Las Posas sold 70 tons of lima beans late in May at 5 cents cash.

New crop potatoes have been shipped out of the State from the Delta this week.

"Wireworms Destructive to Cereal and Forage Crops" is a U. S. Dept. Agr. bulletin recently issued.

New grain has been coming into the Simon Newman warehouses on the west side of the San Joaquin.

The Glenn County Rice Growers' Ass'n was formed in Willows last week with L. H. Tweed as temporary president.

Eighty crates of asparagus per acre netting $4 per crate were averaged on 45 acres of the Fetterman ranch, Brawley.

Dry weather brought grain harvest earlier this year than usual in Fresno west side where it started last week. Grain is being hauled.

Seven crates of cantaloupes from Imperial Valley returned $130.91 to the shipping company late in May. The New York sale price was $155.

Grain in Solano county east of Dixon suffered from early excessive rain and later excessive dryness; and will make only a light yield of hay.

It is said that U. S. grows 24 per cent of the world's wheat, 76 per cent of the corn, and 70 per cent of the cotton; and has 1-3 of the wealth of the world.

Cantaloupes shipped from Brawley previous to June 1 numbered 340 carloads this season. Of these, 277 went east. Daily shipments average about 40 carloads.

Nevada hay, a mixture of alfalfa, timothy and clover, is being bought at $17.50 baled, by eastern race horse owners. Four carloads were shipped from Reno last week.

Button clover will succeed wherever bur clover does well, according to U. S. Dept. Agr. It produces more seeds but without the stiff whiskers; so they do not stick in sheep wool.

Cotton acreage in U. S. is over 15 per cent greater than last year according to the Chamber of Commerce of U. S. It is felt that there will be a strong market when peace is declared.

About 7,000,000 bushels of Marquis wheat were grown in U. S. last year. It ripens a few days earlier than the other Fife varieties. It stands drouth or rust and fall rains better, says U. S. Dept. Agr.

Market Director Weinstock is lending his influence for a co-operative effort to eradicate potato diseases from the Delta. Subscriptions for the purpose are being asked at 10 cents per acre.

A rice experiment on 20 acres 20 miles south of Sacramento is being made to determine adaptability of thousands of acres near the River overflow line. Wateribune has been selected, to resist the wind and cool nights.

The best barley crop in the Athlone district is estimated at 8000 sacks on 400 acres belonging to the Hayes Cattle Co. The ground was plowed 12 inches deep two years ago and a crop of corn grown. Other crops in the neighborhood are said to be generally poor.

The cotton crop of U. S. on May 25 was 77.5 per cent of normal as compared with 80 per cent a year before and 74.3 per cent two years ago according to U. S. Dept. Agr. California's crop is 97 per cent as against 80 and 100 for the two years preceding, at this date.

A bill has been introduced in Congress authorizing the Secretary of Agriculture to determine, establish, and compel use of grades for grain shipped in interstate or foreign commerce if sold by grade at all. This follows complaints by foreign markets of unscrupulous grading.

To prevent threshing machine explosions, the U. S. Dept. Agr. recommends one or more of three precautions: ground the machine so as to remove static electricity; install a suction fan to remove smut and dust; or install an automatic fire extinguisher.

CITRUS AND DECIDUOUS.

The California Peach Growers elected seven directors this week.

Japanese plums will begin moving from Dinuba about June 15.

There is hope of six cents per pound to growers of dried peaches.

Hanford Elbertas will begin shipping east about next week.

Apricots, plums, and peaches have been going out from Merced for a week.

Peach growers are urged not to contract dried peaches at 5½ cents, as 6 cents is hoped for.

Ten and 11 cents are offered at Dinuba for dried apricots. Green apricots are going at about $40.

A million empty cans and two carloads of sugar have arrived at the Hanford plant of the C. F. C. A.

Five and ten-year contracts have been signed at Yuba City for free peaches $15, and clings $22.50 to $27.50.

A special San Joaquin valley label is put on the souvenir packages of their fruit being sold at the San Diego Exposition.

Freestone peaches at Dinuba are sought at $20 to $22.50 and clings around $30. Growers are refusing 5½ cents for dried peaches.

A jar of German prunes put up in Chico in 1888 by Mrs. Rolland Diller took a special prize at the Butte County Spring Exposition.

Hunt Bros.' cannery at Hayward expects a big run on apricots, peaches, pears, plums, and tomatoes, though they had to ship in cherries.

An 11½-acre Valencia orchard near Anaheim has changed hands for $22,000 cash. Another near Whittier, of 10 acres, sold for $33,000 recently.

Green fruit from San Joaquin valley is to reach Chicago on the morning of the seventh day and New York on the tenth day. About 4000 cars were assembled and shipped from Fresno via S. P. last year.

The Tulare County Growers' Ass'n will can at least 100 tons of apricots this season. The Golden State Canning Co. of Ontario have assumed control and have shipped four carloads of machinery for the plant.

The Cal. Peach Growers' Ass'n has signed agreements with several fresh fruit shipping companies by which the former is protected as to dried fruit; and all members are authorized to sell to those companies without further permission.

NUTS, GRAPES, BERRIES.

Berry pickers are scarce at Graton, Sonoma county, where the harvest is in full blast.

The Durham Almond Ass'n elected Thos. Mitchell president and George Jones secretary.

A San Francisco fruit dealer has contracted 800 tons of Thompson Seedless fresh grapes at about $35.

The Cal. Wine Ass'n have signed contracts to deliver their 4,000 tons of raisin grapes to the Associated Raisin Co.

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—Then ran JUST AS YOU SEE IT ON THAT SHEET until 6:15 Tuesday night!

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The Sebastopol Berry Growers Inc. shipped its first carload of berries for this season, May 25, to Nebraska.

All the western brokers and salesmen of the Cal. Associated Raisin Co. will meet in Fresno June 16 to outline 1916-17 campaign plans.

To can berries and vegetables at Porterville is the project being suggested by Manager R. A. Powell of the Tulare County Growers' Ass'n.

A green-grape growers' ass'n has been formed at Reedley to pack and market their crop. They will have a packing house on the Santa Fe which has already laid a spur to the site.

MISCELLANEOUS.

The Santa Rosa Fair Association will have exhibits under the trees this year instead of in pavilions.

The sale of squash flowers at 30 cents per pound is said to be a thriving young industry around Atwater.

Vegetable canners on the Sacramento have had adequate help this season through the State employment bureau.

Nearly 770,000 persons, mostly farmers, are aiding the U. S. Dept. Agr. by furnishing information, demonstrating new methods, experimenting, and reporting local conditions.

UNIVERSITY SHORT COURSES.

The University Farm Short Courses will be held at Davis Oct. 2 to Nov. 10, 1916. The catalog is ready for distribution. The course in "Agriculture" includes Animal Husbandry, Farm Management, Agricultural Engineering, Field and Forage Crops, Irrigation, Veterinary Science, Horticulture, and Dairying. There are special short courses in Horticulture, Dairy Manufactures, Poultry, and Tractor Engineering. There are no entrance examinations; any man or woman over 18 years old can enter. Total expenses need not exceed $60 plus carfare, which will be 1 1-3 for the round trip.

CACTUS DISAPPOINTMENT.

To the Editor: You recently asked who has spineless cactus and is glad of it.

In the fall of 1911 neighbors clubbed together in this vicinity and bought a carload spineless cactus for planting. Each planter averaged 75 slabs. It was planted in the best of land—some in gardens. Most of the planters gave it good cultivation for five years. It grows slowly and gives a poor yield. Windstorms blow it over. Squirrels and gophers like it. The stems rot off at the bottom if the soil gets too wet. Scarcity of moisture stops growth. [Wild claims must be accepted with salt or disappointment surely follows. —Eds.] W. D. Brinan.

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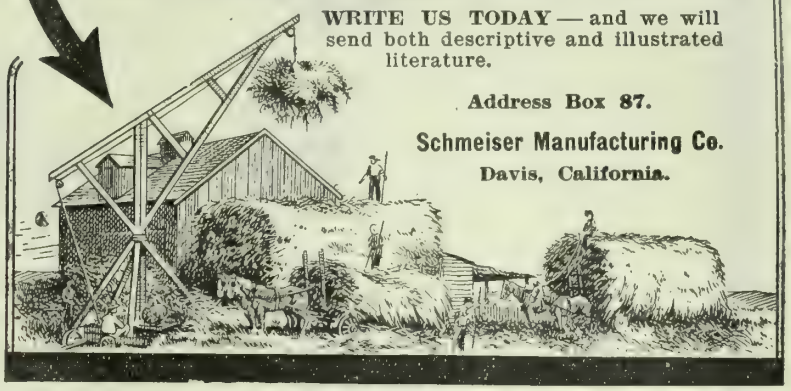
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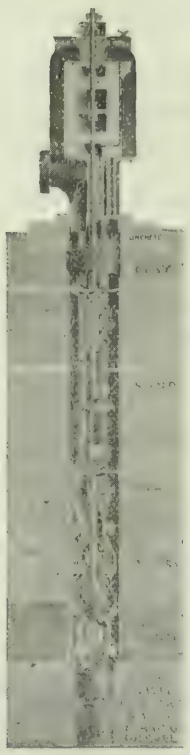
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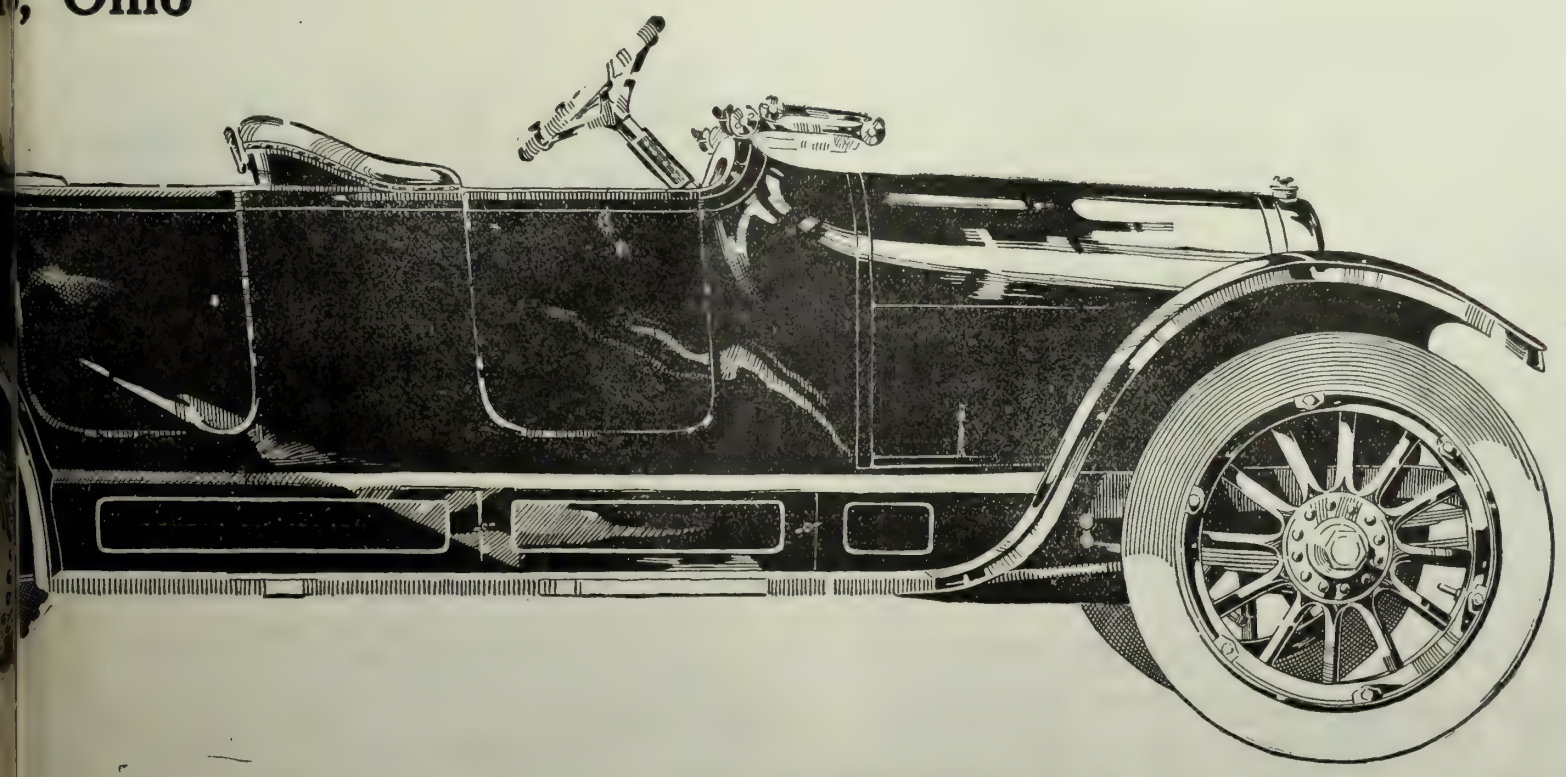
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What Sheep Did for California.

(Continued from page 681.)

gold." It arose before the greatness of either wheat or fruit was even dimly foreseen. The following is a public exhortation on wool growing given by Col. J. B. Crockett at the California State Fair held at San Jose on October 8, 1856:

In California, owing to our mild and equable climate, sheep are liable to fewer diseases and multiply more rapidly than in any other portion of the world; whilst our mountains and valleys furnish them with the most inexhaustible pasturage the year around. The cost of rearing them is, therefore, exceedingly small, and, instead of importing them from abroad for daily consumption, our mountains and valleys should be dotted with sheep and every clipper ship that leaves our ports should bear away tons of wool to set in motion the looms and spindles of Great Britain or New England. The time will come and, in my opinion, is not very remote, when sheep culture on this coast will become a great and most lucrative branch of productive industry. Indeed, I am aware of no greater benefit which an enterprising farmer can bestow upon California than by importing a flock of choice sheep of the best varieties to test our capacity to compete with Australia and other countries, in the wool markets of the world.

And in the matter of this suggestion of bringing in better breeds of sheep, it is now clear that California surpassed proverbial standards of spontaneity, because, instead of "'twas no sooner said than done," it was really done before it was said, though Col. Crockett did not seem to know it. At the very fair at which he was speaking premiums were awarded for exhibits of Leicestershires and Southdown sheep, and at the fair of 1857 awards were made to two exhibitors for imported French merinos. But there is reason to believe that such sheep as Col. Crockett prayed for were in California two years before the date of his oration. J. E. Perkins, whose official position has already been noted, wrote this as history in an essay for which he was awarded a premium by the State Agricultural Society in 1864:

In 1854 enterprising sheep raisers, believing from the fact that poor sheep did so well on California climate and feed, higher classes of sheep could be profitably grown for their fleece alone, set about importing purebred merinos from Vermont and New York. Curtis & McConnell of Sacramento brought the first Spanish merinos from Vermont. Other importations of Spanish and French merinos followed; also Cotswolds, Leicestershires and Southdowns. Large quantities of Australian sheep were also brought in and sold at extreme prices.

Introductions of purebred sheep which began apparently in 1854 continued in great variety and numbers, so that at the State Fairs before 1860, there were exhibitors to the number of 34, showing 200 purebreds at a single exhibition. And the breeds for which premiums were awarded were Spanish, French, Saxon, and Silesian merinos; Southdowns; Cotswolds; Leicestershires; Shropshires; Cheviots; Chinese. At the fair of 1861 W. M. Landrum exhibited Cashmere goats—"the first introduced into the state." Speaking of the array of pure-breds on exhibition the committee of judges for 1860 enthusiastically reports:

No department of agriculture has more just claims upon attention of our people than wool growing. That many of our most enterprising farmers are actively awake to this idea is sufficiently attested by the numerous flocks of the finest classes of sheep already imported and reared here regardless of cost. We have seldom met so fine an exhibition in any part of the world, whether development of form or texture of fleece is considered.

And the spirit and achievement thus manifested by the wool growers of the first American decade continued active and effective for the two following decades, though our limitations forbid pursuit of the details of it.

Early Protective Measures.—It is interesting to note that the first state-wide organization of flock owners was the "California Sheep and Wool Growers' Association" organized on September 24, 1860: "to foster and promote the enterprise of sheep breeding and wool growing in all its branches; and to provide a remedy against a repetition of such efforts to establish a monopoly in the wool market of this state as characterize the operations of the wool buyers this year." The charter members of the first association numbered eighteen and they owned in the aggregate 64,825 sheep from which a spring clip of 157,000 lbs. of wool was shorn. It does not appear just how the organization went to work at its local marketing problem 56 years ago, but surely with that much wool, at that time, these eighteen growers must have uttered a great cry. We do know that the cooperative action of California wool growers, thus initiated, was influential in securing the wool tariff of 1867 which a representative of the woolen interest claimed "was imposed upon the wool manufacturers by the wool growers." However that may have been, the manufacturers have managed to get the cream of all the legislation since that time and will continue to get it unless the growers can amass more influence and acumen than they have hitherto—but that is a question for the future.

It is also interesting to note that in 1866 California passed her first anti-dog law in the interest of the sheep owners, who demonstrated, to the satisfaction of the legislature, that they had sustained an aggregate loss by dogs of $828,095 between 1860 and 1865.

A Return to the Foundation.—Having thus scaffolded the sheep industry into its second decade it is interesting to take another glance at the foundation. We have seen that probably very little of the old mission material survived pelt-killing, neglect and argonaut feeding. A far greater amount of similarly poor foundation was, however, within reach. Between 1852 and 1857 there were 551,000 sheep driven into California from New Mexico. In 1858 the Apaches of the southwest, aggravated by the amount of good meat which was being run in front of their keen appetites without contribution, took such toll that they stopped the driving. Of the New Mexican sheep thus introduced the butchers were probably chief buyers, but there was plenty left for sheep rangers, for between the years just named this record was made: "Immense increase of sheep raised and the drives from New Mexico brought the supply of mutton beyond the demand."

Naturally the first thought of local sheep raising was to supply the local butchers and get the prices which all foods commanded during the great gold rush. This undoubtedly actuated the importation of the best mutton breeds of English sheep which have been noted as coming in so early that the first state fair awards went to them and not to distinctively wool sheep, which, however, quickly followed. As is the case with all new undertakings the earliest pioneers in sheep raising did not know where they were or whither they should go and their very first venture was a very poor one. Mr. Perkins writes in his historical sketch, already cited:

Scarcely anything but native or New Mexican sheep could be found and these, worthless as they were, were further debased by crossing with some Chinese rams imported in 1852. The only recommendation either of these classes of sheep possessed was their tremendous fecundity—the ewes often bearing triplets and sometimes five and even seven at a birth.

And another account says that these Chinese sheep would drop two such litters in a year! It is laughable to think how eagerly some of the pioneers must have invested in this mutton bonanza —reproduction a thousand per cent a year and lamb chops at a dollar or two a plate! But they soon found that they might as well have taken to breeding jack rabbits.

Mutton or Wool?—Evidently the first great question was, shall we grow mutton or wool, but it was very quickly answered. And now we choose another historian. J. D. Patterson (of whom we would joy to insert personal reminiscence, if space permitted), looking backward in 1867 to his work of a decade before, wrote this:

Though I imported from the best flocks in England, Southdowns, Leicesters and Cotswolds, I believed that growing sheep chiefly for mutton could be overdone, but wool growing for the whole world could not be overdone and I concluded that good wool-growing sheep, which are also good mutton sheep (though for that purpose alone not equal to the English breeds mentioned above) are best adapted to the wants of growers on this coast, and I have paid most particular attention to the breeding of the merinos, both French and Spanish.

And this conclusion of Mr. Patterson was practically the conclusion of all wool growers, and for several decades the distinctively mutton breeds did not regain their popularity of the '50s and Californians ate merino mutton. Year after year in the '80s there only appeared at the State and district fairs a single Southdown ram (and the same ram at that), which was hippodromed around the circuit of fairs to get the premiums as long as he could stand up by leaning against the side of the

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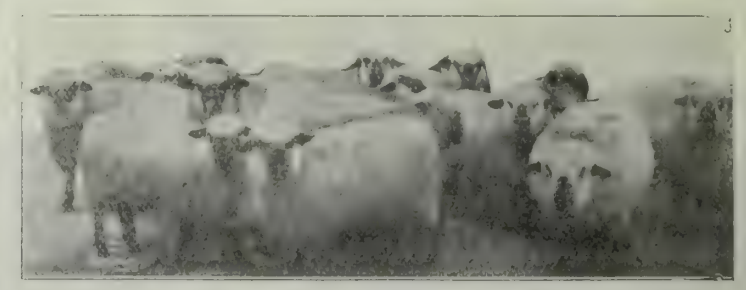
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pen. In fact it has only been within the last two decades that the mutton breeds began to gain the recognition to which they are now entitled in this state and their relation to a new phase of California sheep husbandry has become clear.

The Battle of the Merinos. — As has been sbown, Californians had introduced practically all the known kinds of merinos during the first decade of American occupation. It would be interesting to note some of the details of the way they contended for supremacy, but it would be as long as an account of the battle of Verdun. We can only note the result, which was the survival of two Merinos, the Spanish or American and the French, and the latter contributed very little to our greatest wool achievement for there were very few flocks kept pure at the time of our greatest wool production, though they did survive and are now far more influential and popular than forty years ago. Mr. Patterson wrote in 1867:

The first pure merino sheep introduced into this state were purchased at my farm in Chautauqua Co., N. Y., by Searle & Wynn of San Francisco. Previous to that time fine wool sheep were brought from Australia, but they were of the Saxon variety, not so large, hardy nor yielding so heavy fleeces though their wool is of finer quality.

Mr. Patterson was probably right as to the first French merinos coming from his former establishment in Western New York. Searle & Wynn of Solano county were awarded a premium for their imported French merino buck "Napoleon" in 1857. But so far as we can now see, the credit for the earliest introduction of the American merino belongs to the McConnells and Curtis, as noted by Mr. Perkins above. In fact the survivor, Thomas McConnell of Sacramento, told this writer a year ago that such was the fact.

But in the writer's memory J. D. Patterson stands out clearly as the greatest merino man of the early days. He first sold the sheep to go to California, but he soon concluded that if California was such a good place for sheep it was also a very good place for him and he came with such an amount of capital and energy that he could write, in his claim for the gold medal at the State Fair of 1867, that he owned over 1500 strictly pure bred merinos: French and Spanish—a larger number than were owned by any other individual breeder in America and more pure merinos than were owned by all other persons on the Pacific Coast put together. And he got the gold medal!

The Survival of the French Merino in California. — But though the American merino vanquished the French in contribution to California's greatest wool product, the latter survived for a very good purpose. When about twenty years ago a new demand arose for the heavier bodies and the other characters of the French type, the country was ransacked for them and the famous sheep man of the last generation, W. G. Markham, of New York, came to California seeking French merinos for an Australian purchaser. He found descendants of Patterson's importations, subsequently grown by Blacow and Roberts, then in the skillful hands of the elder Glide at Sacramento, and made free purchases of these sheep for shipment to other parts of the country and abroad. Thus California figured influentially in the revival of interest in the French merinos which has been active during the last two decades. This writer distinctly remembers the satisfaction expressed by Mr. Markham at finding such sheep in this state.

California's Achievement in Wool. —We have been referring frequently to California's notable attainments in wool growing without giving either time or measure of it. It has all gone by, but it is a good thing for this generation to know and remember.

Of the wool product in different years, there is some discord in available figures, but the following probably present the rise and decline as well as can be determined:

Year	Pounds
1854	175,000
1860	3.055,325
1870	20,072,660
1876	56,550,970
1880	46,074,154
1890	34,917,320
1900	21,360,000
1910	13,500,000
1914	11,480,000

The value of the wool crop in the period of greatest production was about ten millions of dollars a year.

In a report made to Congress in 1880, J. L. Hayes, in his time held to be the best informed man in the country, presents figures showing that in 1876 California had 7,061,000 sheep—more than twice as many as each of the nearest states. Texas and Ohio, and more than twice as many as all the territories which have since become great wool states. In fact California had one-fifth of all the sheep in the U. S.

Mr. Hayes also stated: "California alone produces as much wool as the U. S. census reported in 1850 for the United States entire."

Such an achievement for a state only a quarter of a century old is surely notable and memorable!

At another time the writer hopes to give an outline of what, in his judgment, sheep can still do for California's advancement.

Purebred Sheep on Alfalfa Ranch.

[Written for Pacific Rural Press.]

Because he has confidence in the future of mutton sheep N. O. Brown of Turlock has turned his 20-acre alfalfa ranch into a purebred sheep-raising establishment with 75 purebred Shropshire ewes and their lambs. He will eventually breed 200 ewes.

Unlike most sheep raisers Mr. Brown does not pasture his alfalfa. He keeps his sheep in three one-acre lots where they are fed alfalfa hay in feed racks. There are two reasons for this: (1) there is no danger of bloat; (2) he believes that pasturing alfalfa with sheep lessens the yield as it does with cattle.

By keeping them in small lots adjacent to the combination barn and lambing quarters and by having a good hog-tight fence around the entire three acres he is not bothered with dogs.

The soil on this ranch is very sandy and the lots never get muddy, however continuous the rains may be. Largely on this account the sheep have good feet and hard hoofs, an important consideration where they may later go onto dry hard range lands.

Lambing started about March 15 this year, the ewes being in lamb when brought from Idaho in February. As most of the ewes were young, the percentage of lambs was cut down to 100 per cent, but more are expected in the future.

Lambing quarters are provided in one side of the barn, which was originally intended for dairy and horse purposes, the hay loft being in the center of the building. In making lambing pens, two four-foot panels, three feet high, are hinged together at top and bottom. These are set up against the side walls of the barn in an L shape, each set making the front and one side of a pen. The other two divisions in each pen are made by the wall of the barn and the side panel of the adjoining pen.

The ewes and their lambs are kept supplied with hay and water in these pens for a couple of days, or until the ewe has owned her lamb and it is strong, after which they are turned into the lot with the rest of the flock.

One lot is set aside for the lambs as they grow older, a creep through the fence being provided. Alfalfa and water are provided in small racks and low watering troughs.

In feeding hay, Mr. Brown does not keep the racks filled all the time, preferring rather to feed smaller quantities twice a day, about what they will clean up nicely. Otherwise they would get too fat. By this method he carries a mature sheep on one-half ton of alfalfa.

That his system could be profitably applied to the raising of lambs for market, if there were enough sheep in his neighborhood to market by the carload, is shown by this year's lambs, which were as large at two and a half months as the ordinary range lamb when marketed. Next year lambs will come in January.

The Paicines Ranch, with probably the largest herd of purebred Shorthorns and Percherons in the West, is developing breeding stock—first as calves on alfalfa, and later in the San Benito mountain ranges. Part of their herd is composed of the former Howard Cattle Co. Shorthorns.

Johnny, aged four, went into a nearby grocery and asked for a box of canary-seed. "Is it for your mother?" asker the grocer. "No, of course not," replied the little fellow. "It is for the bird."—Exchange.

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AT FIREBAUGH
Pure Bred
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700 Ewes, 2 years old.
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Rambouillets
2400 one and two year old rams and some good ewes for sale. These sheep are pure bred, large and smooth, with heavy fleeces of fine, long, staple, white wool.
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Prices reasonable
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PUREBRED SHROPSHIRES
Not Registered.
BUCKS, YEARLINGS AND LAMBS.
Individuals or carlots for sale.
Write or come and see them.
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SHROPSHIRES For Sale
150 Purebred Ewes and Lambs; 2 Registered Bucks
N. O. BROWN, Turlock, Cal.

Building a Dairy on Twenty Acres.

[Written for Pacific Rural Press.]

"Some of my friends say they can't afford a $200 bull. I tell them I can't afford anything else as long as I expect to make my living from my dairy." Such is the logic of A. J. Morey of Orland, who operates a dairy on 20 acres so profitably that his herd is one of the prides of the district.

When Mr. Morey started dairying on his present ranch he picked up a herd of the best grades he could find. Their average fat production was 225 pounds a year and they were making a living for him. But he was not satisfied with that, so he sold the herd and paid the N. H. Locke Co. an average of $50 more per head for a bunch of high grade Jerseys that were entered in the San Joaquin County Cow-Testing Ass'n.

The producing capacity of each cow he purchased was shown by the records of the Association. The average was over 300 pounds of fat. With the cows he took home a fine young Jersey bull, determined not only to have a high producing herd for the present; but to build a higher producing herd for the future.

Mr. Morey believes every cow that dropped a heifer calf last year has already repaid the difference; for he expects the heifers to be worth more at freshening time than their dams.

Grain Feed.—But he does not believe the best cow living can do full justice unless she is well fed; and it is his opinion that besides all the alfalfa hay a cow will eat, she should have a pound of barley for each four or five pounds of milk she gives. This keeps up the milk flow, saves hay, and makes stronger calves.

Nor does he expect that every heifer, even from his registered bull and out of his present high average producing cows, will be good enough to keep. He will keep 20 cows, all that his ranch will support, and each year select five of his best heifers to replace older and poorer producing animals.

Of course his ultimate aim is to have a purebred herd of Jerseys, but he has been situated on a new place where development is of necessity gradual.

Whenever he sells a grade bull calf for veal, the money is put into a purebred fund. When that fund becomes large enough to purchase a registered cow he will buy one, and then start another savings fund for the next one.

With the calf fund, which, as he says, "I never miss," and the gradual increase from the registered cows, he expects to replace all of his grades in the next few years without any additional effort or sacrifice.

Like all progressive farmers Mr. Morey is always looking for methods better than his own; and true to form he asked us, just before we left, "What can I do to improve my system?" and we had to confess that we didn't know unless it were the erection of a silo. That we found included in his future plans.

SWINE BREEDERS' MEETINGS.

[Written for Pacific Rural Press by D. L. Schrader.]

Poland China.—The second meeting of the Poland China Swine Breeders' Ass'n of North San Joaquin was held in Stockton June 3. A. M. Henry and Henry Miller were elected directors besides the president, vice-president, and secretary.

The Pacific Rural Press was again tendered a vote of thanks for assisting to organize. An association seal was authorized, to be used on stationery of only those members whose breeding and selling operations are approved by the Ass'n.

A meeting will be held on the first Saturday of each month at 10 a. m. at Stockton Chamber of Commerce.

Duroc.—Seventeen breeders attended the second meeting of the Duroc Breeders' Ass'n of Stanislaus county at Modesto June 3. J. M. De Vilbiss was elected vice-president and director. The president and secretary also being directors, Guy Miller and L. D. Collins were elected as the other two. Initiation fee of $1 and dues of $1 per year were fixed. Anyone raising purebred Durocs in Cal. is eligible for membership. The Ass'n will meet the first Saturday of each month at 2 p. m. at Modesto Chamber of Commerce.

CONCENTRATES FOR DAIRY CALVES.

[Written for Pacific Rural Press.]

Raising the heifer calf is an important problem with all dairymen who sell sweet milk, and many of the large city dairymen do not attempt to raise their own heifers at all.

On the dairy of the Stockton State Hospital this has been successfully overcome by Mr. Foley, herdsman, by the substitution of concentrates for milk to a large extent.

This is two parts ground oats, two pounds wheat middlings, one part barley, and one-half part linseed meal.

At first he puts a handful of this mixture into the calf's milk, gradually increasing from day to day, till it makes a thick paste. This with alfalfa hay keeps the young stock in good growing condition and makes a large saving in milk, especially as the calf becomes larger.

QUALITY
DUROC-JERSEYS
WAUKENA WONDER
17655
and
COL. KING 182687
Two Great Sires
AT HEAD OF OUR HERD.
Herd Boars, Young Service Boars, Bred Sows, Bred Gilts or open, and Spring Pigs
FOR SALE.
Splendid breeding type. The kind that brings the BIG LITTERS. Price right.
Write for Further particulars.
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PIPE — For irrigation water, supply-power. Cheaper than any other pipe of equal size, capacity and endurance.
TANKS — For all uses, in all sizes from 500 gallons to 500,000 gallons, and with towers if wanted.
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All Remco products are built to your order. Only clear, air-dried redwood is used. Write us your needs and we will send you full information.
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Founded 45 years ago by the late Frank Bullard.
LARGEST MERINO SHEEP ON PACIFIC COAST
We have been breeding for years to meet the range demand for a combination of a big mutton carcass and the Merino fleece; and have produced a large, wrinkly-necked, blocky, well-covered, heavy-shearing sheep. Our rams weigh up to 300 pounds and shear 35 pounds or better.
We offer both Rams and Ewes for sale.
THE BULLARD COMPANY, Ed. Bullard, Manager.
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SHORTHORN BULLS
Sixty head of registered yearling and two-year-old bulls for sale.
STRONGEST BLOOD LINES.
For prices and particulars apply to
David J. Stollery
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DUROC JERSEYS
WE OFFER EIGHTY HEAD OF NINE TO ELEVEN MONTHS OLD REGISTERED GILTS, OPEN OR BRED TO OUR NOTED HERD BOARS. A UNIFORM BUNCH THAT WILL PRODUCE YOU THE BIG EASY-FEEDING KIND OF PIGS. Ranches Holtville and Devore, San Bernardino Co.
Address PETERS, LAMSON & WALKER.

HOPLAND STOCK FARM
REGISTERED SHORTHORN BULLS
REGISTERED BERKSHIRES (Boars, Bred Sows and Gilts)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize Senior Yearling, P. P. I. E.
3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
SAN FRANCISCO OFFICE, 1210 FLOOD BLDG.

Community Swine Breeders' Association.

To the Editor: Answering your inquiries: We organized the Kings County Poland China Breeders' Association with nine members. It was primarily formed for the purpose of holding a consignment sale and getting all the good that might result from such a sale. By holding the sale it was easy to induce the breeders to come into the organization.

A few of us realized that by holding such a sale we accomplish several things. First, the advertising of such a large number of hogs of the very best breeding in the State would naturally be of benefit to our county breeders. Second, the distribution of such a number of well-bred animals would interest a larger number of people and would increase the number of breeders and improve more herds. Third, the financial results of a successful sale would induce our own members to a still higher standard of breeding. Last, but not least, the co-operation of our people now in the business of breeding pure-blooded stock.

We have not yet perfected a real organization in the way of adopting laws for the governing of such bodies. We adopted rules for the first sale and the requirements for membership; and have not as yet gone further than that.

In arriving at the cost per animal in the sale we estimated our expense and made a pro rata cost. Owing to more extensive advertising than at first decided, the cost exceeded our estimate. It being our first sale, we made some mistakes that can easily be overcome in our next sale and the final cost materially reduced.

Our results have been: Extensive advertising for our herds and the success of this county in producing this class of stock, a better distribution of good stock, a better co-operation between our breeders in the selling of stock and indirectly the fixing of a higher value on the better grades of hogs in this county.

To some extent we worked with local organizations; but most of our work has been done under our own name. We took advantage of the local reputation for the entertainment of visitors and proceeded along similar lines, so that all our guests from abroad went away with a good impression of our community whether they bought or not. We will expect results from such work in the future.

We received aid from our local banks and merchants by having their support and the good word in the right place. We find that when they talk to their customers in favor of a better class of stock, it helps us very much in our sales. The fact that some of our business and professional men are interested in ranching helps to secure their influence.

The thought occurs to us that if the banks or financial men of any community would get behind our organizations and assist in bringing of new blood from the East, it would greatly assist us in building up strains here that would soon prove to the world that California was the best place in the world to raise the best of stock.

Hanford. W. Bernstein.

DO WATERY FEEDS DECREASE FAT TESTS?

To the Editor:— "Has it yet been determined by any Experiment Farm, whether a herd of cows fed on dry alfalfa hay, with milk tests of 3.9, would decrease their test according to their increase of milk, if fed watery feeds such as cactus or beets with the dry alfalfa? Any information you or anyone who has had any experience, will be gratefully received."—S. and R.

[Answered by Prof. F. W. Woll, University Farm, Davis, Cal.]

[Watery feeds have practically no influence on the percentages of fat or water in milk, unless they are fed in excessive quantities with but little other feed. Then there may be an increase in the milk flow accompanied by a lowering of the quality of the milk. Many experiments have been conducted in studying this point, and the evidence is rather conflicting. Only last month, a report of an experiment on the Effect of Water in the Ration on the Composition of Milk, was published by the United States Department of Agriculture, (Journal of Agricultural Research, Vol. VI, page 167), in which the following conclusions are drawn:

"Certain individual cows at times produced milk having an abnormal fat content. This effect was apparently independent of the ration as it occurred not only with the high water-content ration but with the dry as well. A study of the data obtained in the four series shows that the watery character of the ration has no effect upon the fat content of the milk. There was even less variation in the other milk constituents than in the fat. This indicates that rations of varying water content have no effect upon the composition of milk."

GRAIN IN SELF-FEEDER.

To the Editor: How much grain will a 90-pound hog eat in 90 days if fed in self-feeder with tankage and chopped alfalfa hay. Is it possible to put on two pounds per day that way?—D. F. C., Lemoore.

[Answered by Prof. J. I. Thompson, University Farm, Davis.]

[The amount of grain that a 90-pound pig will eat in 90 days after reaching that weight will vary considerably according to the age and condition of the pig. If he is 10 months to a year old, yet has considerable frame, he will eat much more than if he has been grown along regularly up to that time, and will probably gain faster. The pigs in our experimental work which weigh 90 pounds when 3½ to 4 months of age will usually consume in the next 90 days about 500 pounds of barley from a self-feeder and 40 to 50 pounds of tankage. This is when they are on pasture—and they will gain 1.4 to 1.5 pounds per day. They will usually eat slightly more barley than that and gain not quite so fast when alfalfa hay or alfalfa meal is fed instead of pasture. Pigs that were thin, but had considerable age and weighed 90 pounds might gain two pounds per day.]

BLACK LEG LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they prefect where other vaccines fail. Write for booklet and testimonials.
10-dose pkge. Blackleg Pills $1.00
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Use any injector, but Cutter's best.
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WEDNESDAY, JUNE 28th. - - LOS BANOS, CALIF.

This is a sale of a Breeders' Herd that has been kept practically intact for 14 years—one of the finest on the Coast. They are candidates for great records.

Don't overlook **King Segis Wayne Pontiac**, whose two nearest dams average over 34 lbs. butter in 7 days, and whose three nearest dams over 31 lbs. About 20 females in calf to him. There are 20 more good young bulls, including the two herd bulls to be sold.

Write for Catalog Now.

Jas. W. McAlister, Jr.
Chino, Cal., Sales Manager.

Col. Ben. A. Rhoades,
Los Angeles, Cal., Auctioneer.

San Ramon Shropshires



Champion Ram P. P. I. E.

in competition with the best Western and Northwestern flocks, won most of the prizes at the P. P. I. E. 1915. Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total including American Shropshire Specials of 15 Firsts, 9 Seconds and 6 Championships.

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KNOB HILL STOCK FARM Registered Big Type Poland Chinas : : :



SOME TYPICAL KNOB HILL BROOD SOWS.
(Large type, combined with high quality.)

Our herd is nominated in the California Poland China Futurity to be held in connection with the State Fair this fall. We have just imported and added to the herd some of the best blood of the East, including boars from W. J. Hather, Ord, Neb., and Peter Mouw, Orange City, Iowa.
We are offering pigs of both sexes from prize-winning stock. Litters coming at all seasons and stock usually on hand to suit customers.

Come and see them, or write for what you want.
ALL STOCK REGISTERED. ALL BREEDING GUARANTEED.

A. M. HENRY, Prop. Farmington, Cal.

Digester Tankage

Send for sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

With the Livestock Men.

DAIRYING AND DAIRYMEN.

Prince Gelsche Walker brought the Morrises $12,500.

Riverside county health and dairy officers are enforcing sanitary dairies.

Tillie Alcartra had a fine heifer calf 29 days after finishing her record two-year test.

A. Kelting of Utah has bought 38 Dutch Belted cattle from U. G. Strader of Modesto.

Alexander and Kellogg of Suisun recently bought a registered dairy Shorthorn from Iowa.

Pasteurized butter and milk will be made from now on at the Jersey Farm Dairy of Colusa.

The 2-year Inka Tritomia Walker had given 9,448.7 pounds milk in 144 days preceding June 4.

A Farmington dairyman butchered bloated cows and got into trouble trying to sell the meat.

Murray and Jones of Modesto have 70 registered Jerseys from Belknap of San Jose and Snover of Ceres.

Walter H. Dupee of Santee bought the bull Florham Victor, dropped Nov. 1915, in New Jersey, for $700.

At the National Dairy Show, Oct. 16 will be Guernsey day; Oct. 17 Holstein day; Oct. 18, Ayrshire day; and Oct. 19 Jersey day.

J. S. Gibson's 28-pound Uneeda Korndyke Abbie recently had a bull calf. She is a daughter of the $25,000 Johanna McKinley Segis.

The University of Nevada has bought for the Prison Farm five purebred Holsteins, 37 grades, and six heifer calves for $6,130.

The Ayrshire senior 3-year champion Lessnessoci Buntie, made 548.44 pounds fat in 15,798 pounds milk. She is owned in Ohio.

Of the 570 Holstein heifers and cows reported Apr. 18-24 for Advanced Registry, the average 7-day production was 405.6 pounds milk containing 14.732 pounds fat.

The J. S. Gibson Co.'s purebred Holstein Winnie is still giving over 90 pounds a day. Up to June 1, she had made 15,763.8 pounds milk in 159 days—practically 100 pounds a day.

Oriand folks were reminded by the Orland Register that Humboldt county dairymen, because of the superiority of their cows, could buy Orland hay at $9, get it home for $17, and make money.

Dr. W. W. Hand of Glenn county recently bought from Guy Miller, Modesto, two Register of Merit cows, Lolita of Venadera and Belle of Venadera. Each has produced over 600 pounds butter.

Cheese making is to be resumed with modern machinery, in the old Santa Clara cheese factory which was organized in the 70s. Operations were discontinued 20 years ago, because so much milk was demanded in the city and so much dairy land set to fruit.

F. J. Gillian's herd of over 20 cows in the Yolo-Solano-Colusa Cow Testing Ass'n averaged 1.06 pounds fat through May. Cows which made over 50 pounds were: Hewitt & Hewitt, Dixon, Holstein, 66.85; F. Beebe, Woodland, Holstein, 64.82; H. Hiddleson, Woodland, Holstein, 59.04; J. Nelson, Williams, Jersey, 58.22; A. George, Williams, Jersey, 57.18; Hughes Bros., Woodland, Holstein, 57.16; F. Beebe, Woodland, Holstein, 56.44; H. & O. Wilkendorf, Woodland, Holstein, 56.09; F. Beebe, Woodland, Holstein, 53.82; Watson Bros., Dixon, Holstein, 53.77.

SWINE BREEDERS AND STOCK.

Ambrose and James Porter led the Dixon High School pig-raising contest with 90 and 89 points respectively.

A "fashionable" herd of Berkshires is to be established in the Jacinto district of Glenn county by Dr. W. W. Hand.

Duroc futurities will be held at State fairs of Cal., Ida., Ill., Ia., Kan., La., Minn., Mo., Mont., Okla., Neb., S. D., and Tex.

A lantern slide lecture on hog cholera and bovine tuberculosis will form part of the program at each Glenn county farm center meeting in June.

The Tulare County Swine Raisers' Ass'n suggested a livestock show in connection with the county citrus and agricultural fair. It will likely be held in Nov.

The Butte City Ranch of Glenn county sold 10 sows and a boar to Mark Requa of Orland. The boar is White's Longfellow's Model. All are cholera vaccinated.

A North Carolina school teacher of 60 pupils in one room a year ago put a purebred pig in a pen built by the children, who planted forage and grain crops to feed it. This has led to the establishment by tax payers and school board, of a small demonstration farm.

BEEF BREEDERS AND FEEDERS.

F. M. Stuart of San Francisco has bought 24 Shorthorns from Neb.

Miller and Lux have imported 100 purebred Angus bulls and 30 heifers.

A Fresno county man who stole 8 calves was sentenced to 3 years in prison.

C. H. and S. B. Fuller of Drake recently brought in from Kansas 126 purebred Herefords.

Three cars of steers were recently shipped in excellent condition from the Vascher Ranch of Athlone.

Alfalfa-barley finished steers of the Porterville Alfalfa Co. command a fancy premium in San Francisco.

J. E. Montgomery recently shipped a carload of purebred Durham bulls to Horton & Co. of Klamath Falls.

A. L. Gatzman, Leo Rosasco, and Fahey Bros. of Oakdale recently sold 30 cars of cattle to C. N. Ellinwood who shipped them to Seattle.

Shipment of cattle from Sacramento county to the mountains around Truckee is to be facilitated by railroad stockyard improvements at White Rock.

SHEEP AND SHEEPMEN.

The last of the Vina ranch's 4,000 lambs were shipped to San Francisco June 3 at $5.25 per head.

Australian wool sales were suspended pending definite assurances from London regarding an embargo on wool.

The Northern Electric claims to have shipped 14 cars of sheep from Durham to San Francisco via Western Pacific from Sacramento, in 4 hours 20 minutes, a distance of about 175 miles.

The Calla Grove Farm of Manteca have bought 10 purebred Hampshire ewes from Utah and five from Kaupke Bros. of Woodland. They will be bred to Peter Pan, the Chicago International champion.

There is very little encouragement for the wool grower to wash his sheep before shearing as he loses weight and the cost of washing, without corresponding increase in price, according to the results of careful 3-year experiments by the Ohio Experiment Station.

GENERAL ITEMS.

"The Capsule Method of Breeding Mares" is the title of a recent bulletin by the Utah Experiment Station.

The Silver Birch Farms of Pend d'Oreille county, Wash., is starting a big purebred Berkshire-Jersey-Hereford ranch.

The State health officers announce a scarcity of coyotes throughout Lassen county, following a campaign for extermination of rabies.

At the California Rodeo at Salinas July 12-16 cowboys and girls from all U. S. cattle districts will compete for $50,000 in prizes. There is to be a livestock show in connection.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—The kind that makes the money. Pure-bred—registered—cholera immune. An extra fine lot of weaned pigs—both sexes—representing the best and most popular blood lines this breed produces. Five different sires used. Can mate up not akin. Quality combined with size. Rapid growing—early maturing. A few nice fall gilts that will be bred and ready to ship in September. Write for prices and circular. C. B. Cunningham, Mills, Sacramento County, Calif.

REGISTERED DUROC-JERSEYS—Fall boars and gilts. Weanlings sired by an excellent son of the 1020-pound Royal Muncie. We have pigs sired by this boar weighing 240 pounds at 7 months, and out of line bred Golden Model, Crimson Wonder, Orion, Chief, and Colonel sows. For information write Haden Smith, R. 1, Box 84D, Woodland, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEY — Weanlings, shoats, gilts and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

BIG TYPE POLAND CHINAS—The profitable money-making hog. The hog for the farmer. The real mortgage lifter. Large herd to select from. Bred sows, bred gilts, open gilts, weanlings of both sex. Boars ready for light service. Extra special prices. Geo. A. Smith, Corcoran, Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES — World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

BARGAINS IN CHESTER WHITES—Few excellent bred gilts, $30; sows, $35. Service boars, $20 and up. Weanlings, $10. Best blood lines. Only good individuals shipped. Dallas Bache, Hollister, Cal.

DUROC-JERSEYS—Some great weanlings of both sexes by "RIVER BEND HIGH MODEL." Improve your herd by introducing this blood. RIVER BEND FARM, St. Helena, Cal.

FOR SALE—Fancy belted Hampshire hogs. Well belted young sows and boars, registered. Prices reasonable. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonsall, California.

REGISTERED BERKSHIRES — BOARS—5 and 6 months old, $15 and $20 each. Also a few year-old ones. All pure-bred animals. G. A. Casey, San Jose, Cal.

DUROC-JERSEYS, REGISTERED — FANCY WEANLINGS, PRIZE WINNING SIRE—$7.00. Either sex. June delivery only. O. P. Burns, 1108 O Street, Fresno, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE, QUICK MATURING registered Berkshires—Both sexes, $10 each for weanlings. Older ones at farmer's prices. J. M. Bomberger, Modesto, Cal.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

DEL DAYO FARM—(Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen S. Day, Box 1140, Sacramento.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application R. J. Merrill & Son, Morgan Hill.

FOR SALE—Two and three months old thoroughbred Poland China Boars. Mrs. M. A. Rodgers, R. 1, Box 34, Galt, Cal.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

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TO SELL ONE OF OLDEST HERDS.

[Written for Pacific Rural Press.]

The dispersion sale of the Chas. J. Welch Holstein herd at Los Banos, June 28, should prove an attraction out of the ordinary to Holstein fanciers.

Founded at a time when Holsteins were not so well known as they are today the herd may be called one of the oldest in the State. Those who knew Mr. Welch best knew him as a constructive breeder of dairy type. And in securing type he also demanded and secured



Heifers of the Chas. J. Welch herd to be sold at auction at Los Banos June 28, 1916.

sires from high testing dams. This combination of type and production placed his herd in the front ranks in the State; and youngsters from his herd have gone into many a younger breeder's foundation where they have made good.

With this reputation back of them the animals to be offered at public sale should be eagerly sought, both as additions and as foundation cattle.

HOG SHRINKAGE REDUCED WITH WATER BAGS.

[Written for Pacific Rural Press.]

Shrinkage in shipping livestock to market is an expense that every shipper has to consider. Especially is this true with fat hogs in hot weather.

To minimize shrinkage in hog shipments, T. H. Ramsay of Red Bluff equips each car with a canvas bag, eight or nine feet long and about four feet wide. This is sewed together at top and ends, the bottom being made with the fold.

The top edge has hooks sewed into it which are hooked onto the side of the car to hold the bag off from the floor. An opening is left in the top, like an ordinary water bag and a faucet sewed into the lower edge.

When the hogs are loaded, this bag is filled with water; and as occasion permits, the attendant sprinkles the car en route, so that the temperature of the car is much lower than would otherwise be the case, and the shrink in shipment is greatly lessened. If the supply in the bag becomes exhausted it is replenished at the nearest station. After arrival at the destination the bag is folded into a small bundle and sent home.

SLIMY MILK.

To the Editor: What causes milk to get stringy and slimy when it begins to sour; or to be ropy even when sweet, if it comes in contact with soap in washing utensils? Is it safe, and does it affect butter? The cow has green alfalfa in day time and hay at night. She refuses salt. Has plenty of water.—L. A. W., Orosi.

[Answered by F. W. Andreason, State Dairy Bureau.]

[It is caused by certain bacteria which thrive better at low temperatures than lactic acid bacteria. The latter tend to control them under normal conditions. Each bacterium is surrounded by a capsule of sticky gummy snbstance. When a thread of slime is drawn out it is really a chain of bacteria.

Ropy milk is not injurious to health. Edam cheese is made from it. Norwegians add the bacteria to milk for beverage purposes. These bacteria may enter the milk on barn dust, or by splashes of the water in which milk is kept overnight, or by use of incompletely sterilized strainers or containers. Scalding containers thoroughly, disinfecting floors with 5 per cent sulphuric acid, adding potassium bichromate to the tank water, one ounce per cubic foot—are ways to stop the trouble. If milk is slimy when drawn from the cow, it is generally caused by inflammation of udder and should not be used.]

RICE PRODUCTS FOR HOG FATTENING.

[Written for Pacific Rural Press.]

One sack of rice bran and a sack of rice polish daily to 56 young pigs weighing about 150 pounds each, has been found a satisfactory ration this spring by D. G. Beale of the Gridley district in connection with alfalfa pasture and a small amount of buttermilk.

Mr. Beale considers this ration equally good as barley for growing pigs and believes it is cheaper; as the bran is purchased for $15 a ton and the polish at $22.50 from the local rice mills.

As a feed for brood sows, however, he has not found it so satisfactory. The sows which he fed rice by-products did not seem to do well.

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Every hog-breeder in the State should have a copy of this book handy to refer to in cases of emergency. Every day the practical side of the book will help you. The author, W. S. Guilford, is a swine breeder, and he tells just what you want to know when a difficulty presents itself. The book contains 256 pages of text, besides many full-plate illustrations. Tells how the successful breeders feed and handle their hogs.

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A Forty-Acre Sheep Ranch.

[Written for Pacific Rural Press.]

Albert Nordyke of Tehama county is one alfalfa grower who believes sheep raising on alfalfa land is feasible and profitable. He is an old sheep man himself, having operated on a large scale in Idaho, whence he came onto his present 40-acre ranch in 1914.

His 40 acres is all irrigable except one or two small knolls which are rather rocky and gravelly. This is an asset with sheep as one of them is utilized for the barn that is used in the wet winter months, and for a lambing shed. The other one provides a grazing place for the sheep when the alfalfa land is damp from rains or irrigation.

A Cheap Foundation Herd.—Mr. Nordyke got into sheep in perhaps the most economical manner possible. In the fall of 1914 he purchased a small band of old ewes from a range sheep man just as they were being driven from the mountain range to the winter range in the valley. They were ewes with bad mouths, backs, and bags, which were unfit for another year on the range because of their physical condition.

On alfalfa pasture, however, where green, succulent feed is abundant the year round, and where more attention can be given at lambing time, most of them make useful mothers.

These ewes were bred to a Shropshire buck, and the poorer ones fattened after weaning time in 1915. The ram lambs also were sold during the summer of 1915 at a good figure, the ewe lambs being kept for future breeding purposes. The cross-bred ewes not only lamb a larger percentage than the Merino, but their lambs are earlier maturing.

In the fall of 1915, another small flock of range Merino ewes was purchased and bred to Shropshire bucks. In this way the flock will be built up to 10 ewes per acre, the capacity of alfalfa land according to Mr. Nordyke. Besides supplying a foundation of crossbred ewe lambs at no cost except for feed and care, the ewes show a profit in the difference between buying and selling price, the fat ewe in the summer bringing a better price and carrying more weight than when purchased from the range man in the fall; and lastly, they shear a fall and spring clip of wool varying in price according to the quality, and size of the sheep.

But the profits so far with crossbred lambs have been nowhere near as large as they will be when all of the ewes carry more of the Shropshire blood. This is due to the smaller percentage of lambs which the Merino ewes produce and the slower maturing qualities of the lambs.

As an evidence of this, Mr. Nordyke pointed out Shropshire lambs from half-breed Shropshire yearling ewes, lambed in December and weighing 65 pounds in April. These are what Mr. Nordyke is striving for with the entire flock and the kind he will raise, now that he has a foundation band of Shropshire-Merino ewes. Such lambs are the kind that top the market and the coarser stapled wool which such ewes bear is the kind that commands the best price.

Ranch Arrangement.—Mr. Nordyke has his ranch divided into four ten-acre fields. Each of these has an irrigation canal running through it that provides fresh drinking water for the sheep. Large oak trees are located in each field to provide summer shade, a very important consideration with sheep as well as other livestock.

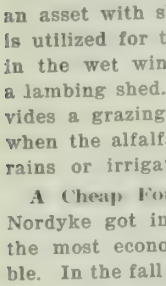
As a protection against dogs, which are the sheep man's "bugaboo" in every country, Mr. Nordyke will erect a hog-tight fence, four feet high, around the boundary of his ranch. A strand of barbed wire will be buried in the ground under the hog-tight wire, and another strand along the top of the posts.

As previously mentioned, the lambing quarters consist of a building situated on a high gravelly knoll. This building is 64 feet long and 50 feet wide, with a hay loft in the center, built off the ground about seven feet in order that the entire floor may be used for the sheep in bad weather.

Low mangers have been built along each side of this building and through the center for hay feeding in bad weather and at lambing time. Posts set at regular intervals throughout the building allow the use of panels to divide small bunches of ewes when necessary. This building cost $600 and has a capacity of 300 ewes and their lambs.

Bloatless Alfalfa.—Most of the alfalfa is pastured off, only a small amount being necessary for winter feeding. It is interesting to note that while many sheep raisers maintain that alfalfa pasture is dangerous on account of bloat, Mr. Nordyke states that by keeping sheep on alfalfa continuously there is very little danger. Not over 15 or 20 head a year die from bloat in his flock.

Except during lambing season there is very little work connected with sheep raising in this manner; and Mr. Nordyke is certain from his past experience that he will clear fully $2,000 annually from his 40 acres.

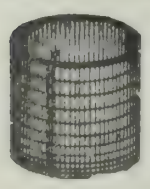


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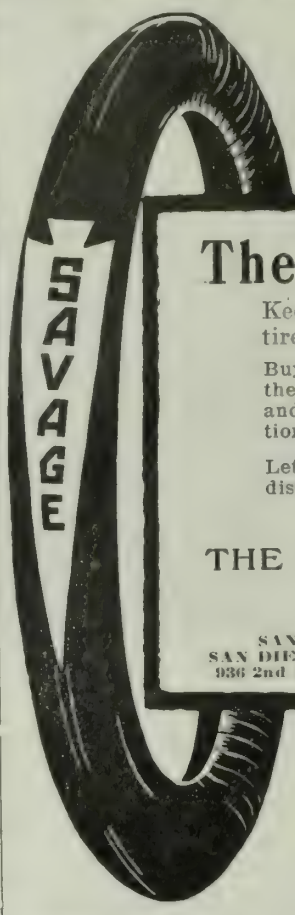
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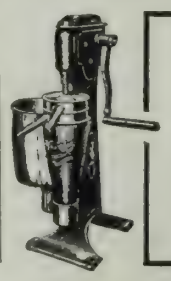
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Shropshire Demand Strong.

[Written for Pacific Rural Press.]

One of the best illustrations of the possibilities of purebred sheep raising in the State is the experience of Bishop Bros. at San Ramon, Contra Costa county.

Starting a few years ago with the idea that some day sheep would be more extensively grown on the average California farm, and that by founding a flock of high-class Shropshires they would be fully established when this demand should begin, they have forged rapidly ahead as the leading breeder of the West.



Some San Ramon Shropshires that show California's purebred possibilities.

Their winnings at the P. P. I. E. last fall came as a surprise to many out-of-State exhibitors but were fully anticipated by those familiar with the foundation flocks that have been imported by the Bishops from England.

As an indication of the demand which has resulted from their consistent showing and advertising, they have been unable to fill all of their customers' orders from their own flock and have been compelled to purchase 210 yearling rams, mostly registered, from the Smith, Hunt, and Patten flocks of Oregon.

That this flock will do much toward giving California a national reputation as a sheep breeding State, develops from the announcement that a show herd will be taken to the Chicago International this year, as well as through the Northwestern show circuit.

BREEDING DUAL TYPE MERINOS.

[Written for Pacific Rural Press.]

One of the best evidences that Merino breeders are alive to the possibilities of the lamb as a range product is seen on the Bullard Bros. ranch near Woodland.

By selection and careful breeding these pioneer breeders produce Merinos weighing 300 pounds and shearing as much as 35 pounds of wool. They believe that this improved Merino type will always be the most profitable and most favored sheep for the average sheep grower.

Not only have they sold Merinos for foundation purposes in all parts of the West, but they have also shipped rams to Australia and South American points.

RE-SEEDING ADOBE PASTURES.

[Written for Pacific Rural Press.]

C. A. Beecher of San Joaquin county makes more money from a piece of his poorest land by pasturing it, than he does from an equal acreage of wheat.

This poorest land is always pastured off by his young dairy heifers; and for a number of years it has been his practice to haul the manure from his barns to it with a spreader.

In this manure there is a good deal of burr clover seed as cows do not digest these seeds. By applying the manure in the fall of the year the pasture is re-seeded each year, besides having a heavy coating of manure to aid in the plants' growth in the spring. The land is heavy adobe and could not otherwise be profitably managed.

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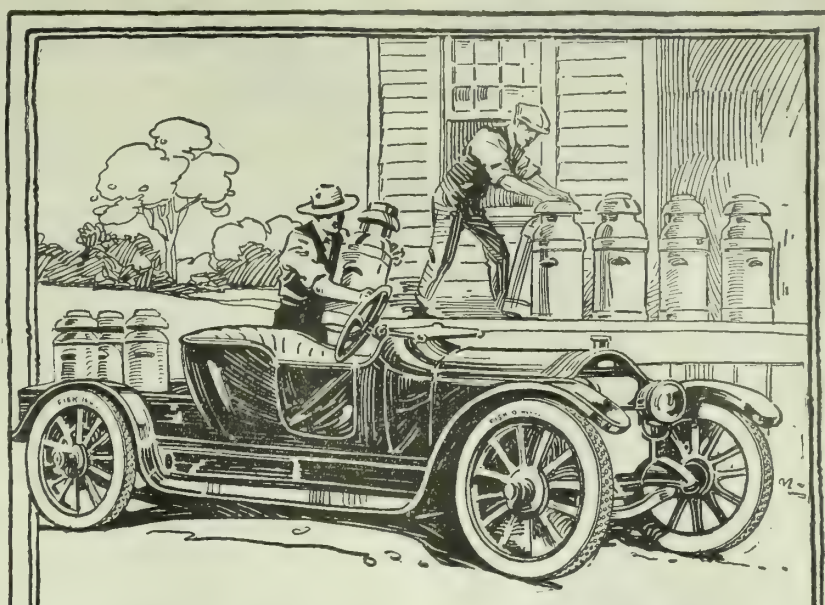
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Poultry for Profit---Producing and Marketing.

HOT WEATHER LAYERS

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

A great many people lose out during the hot weather because they have set rules and follow them whether the thermometer registers high or low. This is no more right for hens than for men.

The first place to make a change is in the sleeping quarters, more ventilation and fresh air. This can be done most economically by placing four inch blocks under the house, one at each corner, and removing the floors if convenient. It is also a great aid in preventing the breeding of mites and mice, and sometimes of rats. Cool air from under a house, when all around is open, is one of the best tonics the hens can have—it keeps the appetite braced; and to lay eggs, hens must eat.

The eating is where the next change must be made; not so much in the change of food, though this needs attention, but in the method and time of serving.

With a night spent on perches where plenty of fresh air can reach them, the hens are necessarily hungry early in the morning. To make a profit out of fresh air the hens must be able to get food just as soon as they get off the perch. If they must hunt around for little odds and ends early in the morning the best part of the day is being lost, for the hens are using up energy that should and could be used to make eggs if the material was on hand. Later in the day when it gets real hot, the hens can seek a shelter from the sun. While seeming inactive, the inward activities are going on creating eggs and maintaining health.

Have a spot of moist ground in the shade for the hens to bathe and roll around in; they enjoy it and it helps to keep them free from lice and disease. I have seen days when my hens never left a little shady spot from nine or ten o'clock in the morning until five or six at night except to get a drink, when they were well provided with feed early in the morning. This is as it should be; the days are long, and while fowls need to be active, their activity should not be forced on them in the heat of the day. If it is, they will just be active enough to provide food enough for the upkeep of their own body, and eggs can go to grass.

No matter what breed of hens the flock is, they will not require so much heating food as they do even in moderately warm weather because the external heat keeps them warm enough. Plenty of green feed not only helps the flock to maintain health and keep up the production of eggs, but it is a big help in cutting the grain bills which are usually higher priced during the summer months. Corn meal should not be fed unless it is cheaper than other mill feed, in which case only about half what is fed in winter may be allowed. Corn is both heating and fattening, white middlings is about on a par with corn meal or nearly so, while shorts, brown mids, and bran are more cooling while still containing the elements for egg-making. Good wheat bran is very high in protein and nutrition and if mixed with one-third ground barley or oats and one-half brown mids, chopped alfalfa, and a moderate amount of beef scrap and bone meal, I think both Leghorn men and others would get a full supply of eggs without burning up the constitutions of the hens by a too heating diet as is done if the winter mash is fed all through the hot weather. Green alfalfa, or kale, would add a relish to the feed and also be helpful in keeping the blood cool no matter what else is fed. It requires practical experiments to decide on the right proportions of some foods; but you can never be wrong in feeding good tender green feed ad libitum, to all fowls under your care. If they don't thank you in words, they will in acts for they will stay healthy and lay eggs, when if fed on an all-grain diet they will only be half-way healthy.

Give the evening feed as late as consistent with the length of day, so that the hens will go to bed with something in their craw. For those who positively have no green feed and cannot get any, feed sprouted barley with sprouts one inch long.

BROODY HENS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

One of our subscribers asks why so many of her hens get broody, even in the fall.

Broodiness, or the desire to set, is Nature's method of propagating the species. If wild fowls did not want to set, all game would die out by race suicide. So that, plainly speaking, is the why of it. The best way to lessen the trouble is to breed it out of the flock. This is slow work, but it can be done—in a measure, not wholly. The Mediterraneans have not the desire to set so strongly as the heavier breeds and yet thousands of Leghorns have to be broke up every year from spasmodic efforts to perpetuate the breed.

If eggs are selected from hens that do not make good setters the trait can be bred out so that each generation will improve.

The treatment given to broody hens differs radically, no two people agreeing as to the best. A good many starve and imprison hens. Both are wrong, in my opinion. At some stage of the game I have tried all the methods advocated by others and then some, even to tying a red rag on the hen's tail, which trick is often done in the eastern states. But it is cruel and does not do one bit of good, only to make the person that ties it on feel cheap and mean.

The best method I have found is to wire off a part of the house where the hens have been roosting and laying so that they are always in sight of the other hens; have nothing in this space but a water trough and feed box—no nests or straw. Give them 10 drops tincture of aconite in a quart of water once a day for three days and feed them all they will eat of the same food you give the layers.

By starving hens you weaken their nerve force and delay their usefulness, as it is not possible for them to commence to lay until they have stored up enough energy and material for the work.

Feed her the elements for egg making, give her lots of fresh air and water, and the worst cases can generally be broken up in three to four days. If a good lively cockerel is kept in the pen with several broody hens, they will be so busy trying to evade him that they will forget they ever wanted to set until the desire has left them. Don't, however, put one hen in alone; that is cruel. But give both sides a fair show by putting several hens in and the cockerel will keep them busy.

As to why the hens want to set in the fall, I do not know, but conclude that as the hens are more or less depleted of their strength, and molting time is approaching, the need for a rest seems to be quite general and they take it that way. If many of these fall setters were given a nest of eggs I doubt whether they would hatch them.

POULTRY QUERIES.

[Answered by Susan Swaysgood.]

Leg Trouble.—I have some trouble with my chickens' legs. When they walk they waddle like a duck and their legs seem to draw up; in others the legs stick straight back. Have been feeding cracked rice.—F. H. P.

[Cracked rice is probably the cause. Too much starch in the diet will cause leg weakness; and if these chickens had only cracked rice, it is time to feed something else. I have seen chickens lose all control of their legs when fed too many potatoes, and rice is similar in starch elements to potatoes.]

White Spots on Liver.—I am losing a good many young turkeys after they are one week old or more. They don't seem to have any diarrhoea, but they have white spots on the liver and an unusually large gall. I feed three times a day chick feed, boiled egg with onion tops, and milk weed. I lost a good many last year after they got the size of quail, though I fed the same except the milk weed.—A. B.

[I have no knowledge of milk weed. Make a bread of one quart of chick feed, one quart corn meal, one quart of white mids, one quart of steel cut or rolled oats and mix to a stiff batter with skim milk and infertile eggs, adding a little salt and a tablespoonful of cayenne pepper. The bread requires thoroughly good baking and keeping dry. It can be fed after soaking in skim milk or grinding in a food chopper. Be sure your poults do not have head lice. When they die at the size of quail, it looks suspicious.]

BAKERS' EGGS.

To the Editor: For a long time I have been shipping my eggs to a firm in your city, always receiving the market price as quoted in Pacific Rural Press. The other day I received a statement from them with check for 3 cases of eggs. Out of the 3 cases they had marked 5 dozen as "Baker" at 11c. What does that mean?—M. N. O., Acampo.

[Answered by Geo. H. Croley.]

[Bakers' eggs are those that are somewhat inferior for family use. They may have blood clots in them, or they have been washed with water or sour milk, either of which processes brings on very quick deterioration. They may be in very good condition if used quickly, but might not keep even two or three days.

It has been customary in testing out eggs to class as bakers' eggs those that have been tested out of incubators or those that hens have set on a few days.

A recent United States law now makes it a prison offense to sell eggs for food that have been tested out of incubators, even if they are clear eggs and apparently in good condition.]

COLD TURNING TO ROUP.

To the Editor: Three of our fowls have a hard swelling by the eye; watery eyes; and running at the nose. Can I add any disinfectant to the drinking water to prevent the rest of the flock from taking the disease?—E. H., Laton.

[Answered by Geo. H. Croley.]

[These fowls have a severe cold that is assuming the form of roup. Separate the sick from the healthy ones. Give a physic in the drinking water, such as Epsom salts—tablespoonful to one gallon of water—taking all other water away from them. If this is not possible, give salts in small quantity of moist mash, seeing that it is evenly distributed. Wash the heads, eyes, and mouths with a strong solution of soda bicarbonate, or one of the following solutions: Half an ounce of

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boric acid in one pint warm water; two per cent solution of carbolic acid; or peroxide of hydrogen diluted in equal quantity of water. To prevent spread of the disease, put in each gallon of drinking water a small pinch of permanganate of potash.]

Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired Heavy Winter Layers. W. G. Smith, Prop., Corning, Cal.

CLOSING OUT—FOR SALE CHEAP—3 Electric Incubators, 576 egg capacity each. 2 Electric Incubators, 144 egg capacity each. 16 Electric Brooders, 150 chick capacity each. Complete with circuit breakers, thermostats, connecting sockets, etc. Address T. B. Jacobs, P. O. Box 395, San Mateo, Cal.

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BABY CHICKS—We will hatch during May and June, so order now and get them when you want them. All good strong youngsters from good layers. White and Brown Leghorns, Barred Rocks, R. I. Reds and Black Minorcas. Campbell Poultry Ranch, Campbell, Cal.

PLACE YOUR ORDER NOW for May delivery of White Leghorn Chix from Jackman's purebred, heavy egg-producers. You get the best at lowest prices. $8 per hundred, $75 per thousand. Sunnyside Poultry Farm, R. 2, 1610 Vine St., Sacramento, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., Inc., Poultry Supplies, San Francisco.

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ORPINGTONS—BUFF AND WHITE—Black Minorcas and Carneaux pigeons. Breeding stock at half price as I am selling out. Mrs. Susan Swaysgood, Route 2, Pomona, Cal.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized, heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorcas, White Leghorn, stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

BABY CHICKS—Strong and healthy, from high-bred free-range White Leghorn stock. Prices on application. Western Hatchery, W. S. Waldorf, Petaluma, Cal.

HERE IT IS—White Rock baby chicks. $15 per 100. Hatching eggs, $1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ceres, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and cockerels. B. C. Quessenberry, R. 4, Lodi, Cal.

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EGGS FOR SALE from my prize-winning Mammoth Bronze Turkeys. Now $2 per doz. N. E. Mulick, Willows, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

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EASTMAN'S BRED TO LAY Barred Plymouth Rocks. Fairmead Poultry Farm, Fairmead, Cal.

BEST FOR YOU—Hogan Tested Leghorns and Barred Rocks. C. W. Hinrich, Palmdale, Cal.

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HART'S BRONZE TURKEYS AND EGGS—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

MAMMOTH BRONZE TURKEY EGGS from selected stock. Also young Toms. M. M. Reiman, Planada, Cal.

PEKIN DUCK EGGS for hatching, $1.00 per dozen. L. D. Collins, R. F. D., 54G, Denair, Cal.

PHEASANTS—Golden and Ringneck. Eggs from April on. T. D. Morris, Agua Caliente, Cal.

HARES AND RABBITS.

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BELGIAN HARES—Young stock for sale. Hurd Bros., St. Helena, Cal.

CHICKEN POX AND COCCIDIOSIS.

To the Editor: Does your veterinary department answer chicken disease questions?—R. E. H., San Bruno.

[Answered by Dr. H. B. Wintringham.]

[I am attempting to handle poultry diseases which are sadly neglected in my profession. The field is large and the work of necessity original. To date I can point to but two diseases which can be treated with certainty: vaccination for pox which I manufacture; and a remedy of my own for coccidiosis (bloody diarrhoea). There is much tuberculosis present but not to such dangerous extent as in our other domestic animals.]

GAME WARDENS AVAILABLE.

To the Editor: I noted with interest a rather facetious letter signed by H. Overacker which appeared in your paper March 25. The letter appears to be an attempt to depreciate the value of birds as insect and rodent destroyers. The defenders of the birds as valuable allies of the farmer seldom attempt to prove that the destruction of angleworms is a direct benefit to the rancher, nor do they attempt to defend those birds which, on account of their abundance and food habits, destroy large quantities of fruit or grain.

Many of the best insect destroyers among birds destroy many beneficial insects. Nevertheless, the very fact that birds constantly prey upon all sorts of insects increases their efficiency as checks on insect life. Birds eat food to sustain life, not to benefit the human race.

Were half, or even a small part of all of the individuals of each species of insect suddenly destroyed, many of the species that are now troublesome would be rendered comparatively innocuous, and the farmer would doubtless be able to withstand the remainder successfully. It is therefore in this general attack upon insects that birds find their real value.

Mr. Overacker's suggestion that the hunter is turned loose on the farmer without so much as giving him the protection of a game warden is entirely misleading. The California Fish and Game Commission maintains an efficient warden service. Considering the size of the State and the funds available, the warden service is far above the average. With the exception of a few instances, a long-distance call will bring a game warden to any locality within a few hours, and it is this sort of call from the farmer that the game warden is ever ready to heed. Furthermore, a man who is troubled by the hunter can enforce the law of trespass. **H. C. Bryant.**

Berkeley.

Whenever trouble occurs from feeding milk, look well to the drinking vessels, for there is likely where you will find it. All drinking vessels that are used as milk containers should be well washed every day and scalded at least once a week.

The Western Meat Co. recently renewed its lease to 40,000 acres of the Chowchilla ranch for cattle range.

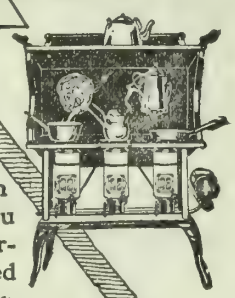


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The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends:

The sales are in full blast at most of the stores and one dollar will now do what it took two to do, two months ago.

All ready-made suits and dresses are very much reduced and even the tailors make a decisive cut in their prices for this month. The tailor-made suit may seem like a luxury to most of my readers, because you always pay more for them than for the ready-made garment. But you must take into consideration that usually there is no comparison in materials and a tailor suit made by a good tailor is never extreme in style and you can practically wear it until the garment is worn out and feel comfortably dressed.

Those of you who are coming to the city for a change or to get away from the heat, will find many tailor shops that will make a great effort to please you if you should desire to patronize them.

Millinery is quoted in some stores at about one-third its original price. Generally speaking, the styles are conservative, both in shape and color. A great many large sailors are being seen, both on the streets and in the windows, and the trimmings are simple. The favorite colors for these seem to be either black or white, although there are some bright-colored ones.

Never has there been such a run of sport hats as we have seen this spring, and now that everyone is provided for, there are new ones appearing to tempt us to invest again. These new ones are of soft felt, usually sailor shape and in very soft colorings, with a simple band of white ribbon around the crown.

They are very attractive looking and not so noticeable as the earlier ones of stripes.

The gay-colored sweater is still much seen in the stores and I am informed that the very best style for the early fall is to be the wool jersey cloth instead of the knitted fibre silk. This jersey cloth can be purchased by the yard and the garment made at home at much less expense. One I saw recently on a young girl was made of a deep rose with large collar and cuffs trimmed in white. With this, she wore a white hat (made by herself) of picot edge ribbon, gathered and running round and round the hat.

There are more lingerie blouses being shown than we have had in years. The prices are almost as high as the silk, but they are very fresh and dainty looking, many of them with large collars that hang well down the back and full reveres on the fronts edged with lace.

Corduroy is still popular for separate skirts—I saw some very good looking ones for $5.00, but a good wool skirt of either checks or of white will in my judgment give more service and look better. Gabardine is one of the popular materials for the white skirts and there is a new stitch that looks like braid that is used as a trimming on them.

Yours devotedly,

Rosabella Best.

A FRICASSEE OF LAMB.

Lean lamb should be cut into small pieces, say two pounds. Cover with boiling water in a saucepan, with salt and pepper. This should cook very slowly one hour; and then add one quart of green peas. When the peas are cooked add a tablesp. of butter and a tablesp. of flour rubbed together. Let boil a moment or two longer, and the fricassee is ready.

MAKING HARD WATER SOFT.

To the Editor: Farm women use many checks and ginghams, but when we use borax or soda to soften hard water, it runs the colors and makes the cloth dingy. What can we use, how can we test water easily for hardness, and if borax or soda are to be used, how much per gallon?—Mrs. J. F., Mendocino county.

[Answered by John S. Burd, University Chemist.]

[We know of no simple test for home determination of the hardness of water by which you could judge how much borax or other softener to use. Boil your water, allow it to settle, and use the clear surface water. Another system consists in adding lime water and soda ash, in amounts depending on the hardness of the water. If after trying these, you still have trouble, we would have no objection to making chemical analysis. We do not care, however, to suggest methods of treating of water unless they are followed, as the cost of the analysis would not be justified.]

HOW TO COOK TEPARY BEANS.

[By C. R. Fillerup, Farm Adviser, Ariz.]

Stewed Tepary Beans—One quart teparies; one-fourth T. soda; one-fourth T. butter; pepper and salt.

Look beans over carefully; put into a kettle with enough water to cover. Add one-quarter teaspoon soda and boil five minutes. Drain soda water off and cover with cold water; boil until tender. Add one tablespoon butter. Pepper and salt to taste, and boil over rather slow fire for six hours. Serve hot with catsup.

Recipe 2—One quart teparies; ¼ T. soda; 1 T. butter; 1 cup tomatoes; 1 onion; pepper and salt.

Look beans over carefully; put into kettle with enough water to cover. Add soda and boil five minutes; drain soda water off and cover with cold water; boil until tender. Add butter, tomatoes and sliced onions. Pepper and salt to taste, and boil six hours over rather slow fire. Serve hot.

Note: Preserve these recipes and watch for more. Let us create a demand for this real dry farms product.

NIGHTGOWNS FOR BABIES.

Cotton crepe nightgowns made with peasant sleeves are good for the summer for baby, but they should be finished at the bottom with an inch hem in which a tape can be run. When this is drawn up, the baby cannot kick his feet out.

TO THICKEN CREAM.

If the cream is too thin to whip, add the unbeaten white of an egg and beat vigorously and the result will be very satisfactory.

RABBITS FOR FOOD.

Many children have rabbits for pets, but Belgian hares are more than a plaything for children—they furnish a very economical and appetizing meal when properly prepared. They should not be allowed to grow too old, if you wish them delicate in flavor—from four to six months is a suitable age to use for food. Some of the strains like Flemish Giant make very large animals, but the meat is not as fine-grained as in the smaller breeds, and so is less desirable for the table.

After the rabbit is ready for cooking, cut in pieces, flour well and fry in hot butter or drippings. Long, slow cooking is necessary to have tender, appetizing meat. When well done, the meat is perfectly white and is equal to the breast of chicken.

BREAD AND BUTTER PUDDING.

Cut slices of bread a medium thickness, spread well with butter and lay in a pudding dish. Over this put a layer of currants, sugar and nutmeg; then add more bread and butter and another layer of currants, etc., and repeat until the dish is full. Pour over this one quart of milk, sugar to taste, to which has been added two well beaten eggs. Bake twenty minutes.

SLAW RECIPE.

One small head of cabbage, chopped fine, stand in cold water twenty minutes. Take one-half cup vinegar, one-half cup sugar, 1 egg, salt and pepper to taste, beat all together and cook until thick. Drain the cabbage, add two hard-boiled eggs chopped and pour the dressing over all. Serve hot.—Contributed by L. C. W., Hanford.

STAIN REMOVERS.

Acid stains, ammonia.

Alkali, vinegar or lemon juice.

Blood stains, salt and warm water.

Coffee and tea, javelle water.

Fruit stains, javelle water.

Grease, rub with French chalk and hang away for a day.

Ink, lemon juice and salt or sour milk.

Indelible ink, potassium cyanide (deadly poison).

Iodine (fresh), cold water; then rub in baking soda.

Iodine (old), oxalic acid or ammonia.

Mildew, cover with lemon juice and salt and lay in the sun. Rinse at night in cold water and repeat if necessary.

Paint, benzine, then alcohol.

Rust, javelle water.

Scorch, wash again, then hang in the sun.

FLORAL DEPARTMENT.

By Geo. N. Tyler.

Chrysanthemums that were planted out last month are now well established and should be staked while they are small, as you do not break off many of the roots. The best stakes are made from split-shakes, each shake making twelve stakes. The single and pompons should leave the top pinched out so they will branch.

Smilax that has gone to seed and are turning yellow, should be cut to the ground and no more water applied. If you want to increase your plants, lay one of the strings that you cut off, in a small trench in a moist, shady place and cover over one inch with soil. They will make small plants to be set out this fall.

Rose Cuttings—Keep on putting in cuttings of roses and runners.

Begonias.—If you have tuberous rooted Begonias, you can increase your stock by making cuttings just below a joint and rooting them in sharp sand. When rooted pot them up, or plant them out, which ever you desire, and they will make fine tubers for next year, but do not let them flower, or the tubers will not be so strong. The parent plants should now be in six and seven inch pots, if you are growing them in pots, using one part rotted cow manure, two parts leaf-mould, one part sand and one part loam. After they have filled the pots with roots, give weak liquid manure, the kind I described in a former article is just the thing. If you use any other kind of liquid manure and you get it too strong it will cause the flowers to drop.

Hydrangeas are now in strong growth and are making flower buds. The flowers are greatly improved by watering with liquid manure, but do not feed after the flowers show color, or it will bleach them. If you want some blue ones, put some sulphate of iron around the plants and water through this. If you put it on one side of the plant, one side will make blue flowers and the other side their natural color. Iron filings in the soil will do the same thing, but are not as good or as sure as the former.

Moist Atmosphere.—Those that have small conservatories or greenhouses, should keep all absorbent surfaces sprayed, to give out a moist atmosphere. All kinds of greenhouse plants can be started from cuttings now, especially the Begonias and Coleus.

Repotting.—A good rule to follow in potting up plants is to remember to pot the flowering plant in a one size larger pot than you think it requires. If any of your ferns get light colored in the foliage, it is a sign that the drainage is bad; knock them out of the pot and shake off what dirt you con from the roots and repot into a smaller pot, giving ample drainage; afterwards potting over as they require it.

Every woman at one time or another finds that some wet pieces in her clothes basket have caused mildew among the clothes. To remove rub the spots with soap and cover them with chalk. Dampen and put on the grass in the sun to dry.

THE BOY FROM TOWN.

Last night a boy came here from town
To stay a week or so,
Because his maw is all run down
And needs a rest, you know.
His name is Cecil, and he's eight,
And he can't skin the cat—
His maw she calls him "Pet;" I'd hate
To have a name like that.

He wears a collar and a tie
And can't hang by his toes;
I guess that I would nearly die
If I had on his clo's;
He can't ride bareback and today,
When we slid on the straw,
He ast if roosters helped to lay
The eggs I pick fer maw.

When our old gander hissed he run
As though he thought he'd bite,
And he ain't even shot a gun
Or had a home-made kite;
He never milked a cow, and he
Can't even dive or swim—
I'd hate to think that he was me;
I'm glad that I ain't him.

He thinks it's lots of fun to pump
And see the water spurt,
He won't climb in the barn and jump,
For fear of gettin' hurt.
His clo's are offle nice and fine,
His hair's all over curls;
His hands ain't half as big as mine;
He ought to play with girls.

A little while ago when we
Were foolin' in the shed
He suddenly got mad at me,
Because I bumped his head.
There's lots of things that he can't do;
He thinks that sheep'l bite,
And he's afraid of ganders, too;
But he can fight all right.

—S. E. Kiser.

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A MASQUERADER.

This is a real true dog-story.

He is a pug and a great pet of his mistress, who is very proud of his fine pedigree. One day she discovered that Teddie could not see as well as usual. A famous oculist was consulted, who told her to bring her pet dog to him.

They started, but a great obstacle presented itself. Conductor after conductor insisted that the dog should not ride in the car. So it was only after getting on and off about a dozen times that the doctor's office was reached.

Teddie was as quiet as could be while having his eyes examined, and his mistress was told she must bring him every day for a month, and all would be done for him that was possible.

So Teddie's mistress went to a neighbor who had a small baby and borrowed an outfit that was not too dainty. Teddie kept very quiet while being dressed in a long white dress, then a cloak and muslin cap, and over the face a long white veil.

Thus they started. Immediately upon entering a car, if it was filled up would jump a man to give the lady carrying a little baby a good seat. Teddie never wagged his little curled-up tail once, neither did he even bark.

One day the doctor's office was filled with people waiting their turn, when a lady turned politely to Teddie's mistress and said: "My turn comes next, but I will wait for you on account of your baby. It is so very tiresome to wait with a baby."

The doctor opened his door at that moment, and called them both into his private office. He said, "I will show you the very best patient I have," and took Teddie carefully in his arms.

He threw back the white veil and disclosed the dog's little pug nose and pert little face looking out from under the frills of the cap.

Teddie can see pretty well out of one eye now. His mistress expected a huge bill for the expert's service; but instead she received a receipted bill from the good doctor, with a note saying that, as Teddie was the first patient he had ever treated of royal dog blood, he esteemed it a great honor to have been the means of helping him.—Boston Globe.

Jerry Simpson was about to be tried for murder. He managed to get a word with Pat McGlynn, one of the jurors.

"I'll give you $100 if you'll get them to bring in a verdict of manslaughter, Pat."

"I'll do my best, but I think I'll have a hard time for the evidence is dead agin you."

The trial came off and when the jury retired it was evident that they were having a stormy time to reach a verdict. Finally it came, and the verdict was manslaughter.

"I'm grateful to you, Pat," said Jerry. "How did you manage it?"

"Faith I had a hard time of it, for the whole eleven were after acquittin' you."

Give the children a little spot in the garden for their own with the understanding that they must do the weeding, planting, and watering themselves. The boys will likely choose vegetable seed and the girls flowers, but whatever it may be, their time will be profitably employed, and they will get an insight into nature's treasures that they can learn in no other or better way. The study of plant life is delightful and a little work all their own appeals to them.

For a lady's motoring gown a farm woman recommends medium gray satin as it sheds the dust and does not spot easily.



"Pa's Got His New B. V. D.s On"

He had old-fashioned notions, until the Boys went out, bought B. V. D. and made him put it on. Look at him! Now, Pa joins right in the young folks' fun, because he's cool.



Loose fitting, light woven B. V. D. Underwear starts with the best possible fabrics (specially woven and tested), continues with the best possible workmanship (carefully inspected and re-inspected) and ends with complete comfort (fullness of cut, balance of drape, correctness of fit, durability in wash and wear).

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AT ALL DRUGGISTS



FIGURES GIVEN ARE INDEPENDENT AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS

San Francisco, June 7, 1916.

WHEAT.

The local wheat market shows no change. The California crop outlook is, on the whole, a little better owing to cooler weather and light rains in some places. The shipping outlook is very uncertain owing to scarcity of ships, though some European buyers are reported on the Coast.

Cal. Club, ctl.	$1.60 @1.65
Northern Bluestem	1.87½ @1.90
Northern Red	1.85 @1.95

BARLEY.

While quotations are unchanged, the feeling is a little weaker owing to the appearance of samples of new barley. One car of very light new grain arrived this week and sold for $22.50 per ton. In some sections the new crop is reported to have been damaged by high winds last week.

Shipping, ctl.	$1.37½ @1.40
Choice Feed, ctl.	1.30 @1.35

OATS.

Aside from an advance of five cents in red feed there is no change in oats. Offerings of spot stock are small and the demand moderate.

Red Feed	$1.40 @1.42½
White	1.55 @1.60

CORN.

Kaffir corn is no longer quoted here; and just at present there is no great amount of business in any line. Eastern corn continues to come in in fair volume for the mills.

Eastern Yellow, ctl.	$1.80 @1.85
Milo Maize	1.40 @1.45
Egyptian	1.45 @1.50

BEANS.

The flurry in the bean market seems to be about over. The recent advances in quotations appear to have checked buying. There has been very little doing during the past few days, and no price changes are to be noted. The recently advanced prices are still held, however; and, as stocks are small, a firm market is expected. Advices from the Lima bean growing sections report spot stocks as selling at $4.75, $5 and $5.05, with 1916 futures being sold at $5 or better. In the Sacramento and San Joaquin districts the acreage of large whites, pinks and cranberries will be increased, while the blackeye acreage will be much smaller than last year.

(On wharf, San Francisco.)

Bayos, per ctl.	$5.00 @5.25
Blackeyes	2.90 @3.00
Cranberry Beans	4.85 @5.10
Horse Beans	3.00 @3.25
Small Whites (south)	7.00 @7.10
Large Whites	6.40 @6.60
Pinks	5.10 @5.25
Limas (south)	4.90 @5.00
Red Kidney	6.50 @6.75
Mexican Reds	4.90 @5.25
Tepary Beans	4.00 @4.50

SEEDS.

Melilotus Alba, lb.	23 c
Melilotus Indica	6 c
Bur Clover	11 c
Oregon Vetch	5 c
Soy Beans	6 c
Canada Peas	5¼ @6 c
Alfalfa, per lb.	22 @24 c
Sudan Grass	35 @40 c

HAY.

The market here remains steady as to prices, the total volume of receipts running fairly even, with an increase in the shipments of new hay and a falling off on supplies of old. Reports here indicate that the supplies from some sections will be considerably larger than was predicted a few weeks ago; but advices from interior points, notably from southern California, are not so promising. In portions of the San Joaquin Valley the third crop of alfalfa is being cut, both tonnage and quality being pronounced good. The export movement of hay has been checked by the longshoremen's strike.

No. 1 Wheat	$13.00 @16.50
No. 2	12.00 @14.50
Tame Oats	12.00 @15.00
Wild Oats, new	8.00 @11.00
Barley, new	9.00 @12.00
Alfalfa, new crop	8.00 @12.00
Stock Hay	7.50 @ 9.00
Straw, per bale	.25 @ .40

FEEDSTUFFS.

Bran is up again this week, and middlings may follow with another raise, as the demand continues fully up to the supply. Business is rather quiet in other lines.

(Wholesale prices, per ton, carload lots, San Francisco.)

Beet Pulp, per ton	$22.50 @23.50
Alfalfa Meal, per ton	20.00 @21.00
Alfalfa Molasses Meal, per ton	21.00 @22.00
Bran, per ton	28.00 @29.00
Oil Cake,	Nominal
Cocoanut Cake or Meal	23.00 @25.00
Cracked Corn	40.50 @41.50
Middlings	35.00 @36.00
Rolled Barley	29.00 @30.00
Tankage	45.00
Rolled Oats	29.50 @31.00

VEGETABLES.

Supplies of vegetables have come in quite freely this week in spite of the strike of the river boatmen, gasoline launches and the railroads having proved equal to the emergency. Some lines are getting out of season and are firm for good stock; but the general run is showing weakness on account of increasing supplies. Specially fancy asparagus brought a new high figure at $4 per box. Tomatoes are lower and very weak.

Cabbage, ctl.	$1.75 @2.00
String Beans, lb	3 @ 6 c
Summer Squash, box	60 @75 c
Peppers, bell, lb.	15 @20 c
Rhubarb, box, Bay	40 @75 c
Asparagus, box	1.25 @4.00
Lettuce, small crate	50 @65 c
Eggplant, lb.	10 @15 c
Peas, lb.	4 @ 5 c
Tomatoes, lugs	1.00 @1.25
Green Corn, doz.	15 @25 c
Okra, lb.	20 @25 c

POTATOES AND ONIONS.

Oregon Burbanks are up this week, though advices from the north indicate that the top has been reached there. Advices from the south report prospects for a large onion crop. New crop garlic is now quoted here at from 5 to 6 cents per pound.

New Potatoes, ctl.	$1.75 @2.25
Oregon Burbanks	1.90 @2.10
Onions, red	1.75 @2.00
Australian	2.50
Garlic, new crop, per lb.	5 @ 6c

POULTRY.

Generally speaking, the poultry market is in good shape with all lines moving off well. Hens are now in better demand than broilers; and the latter are selling a little lower.

Broilers, 15 lbs. to doz. and less, lb.	21 @22c
do, over 15 lbs. to doz.	23 @28c
Fryers	25 @30c
Hens, extra, per lb.	20c
Small	17 @18c
Smooth Young Roosters, per lb	25 @28c
Squabs, per doz	2.00 @3.50
Geese, per pair	2.25 @3.00
Ducks, young	Nominal
Old	15 c
Belgian Hares	9 @10 c

BUTTER.

Butter is up again this week, having a little more than recovered the ground lost last week. Receipts have been coming in slowly for several days; and the demand has continued good, especially for extras, which are now quoted a full cent above other grades.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	25	25½	25½	25½	25½	26
Prime Firsts	24½	25	25	25	25	25
Firsts	24½	25	25	25	25	25

EGGS.

Eggs are up a cent and a half in both grades, with all lines very firm. Receipts are rather light for this season. Some dealers are predicting a further advance.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	24½	25½	25	25	25	25
Sel. Pullets	22	23	22½	22½	22½	23

CHEESE.

The cheese market is in excellent shape with stock moving off well. The report that China is to be in the market for California cheese caused some interest, but has had no effect on prices. An advance in both Young Americas and California flats is reported.

Y. A.'s fancy	15 c
Fancy Calif. Flats, per lb.	14½ c
Monterey Cheese	16 @17 c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	27	27	27	27	27	27
Eggs	26	25½	26	25	25	25

Weekly Butter averages:	
S. F.	25.50
L. A.	27.00
Weekly Egg averages:	
S. F.	25.00
L. A.	25.41

DECIDUOUS FRUITS.

The high price of sugar is said to be having some effect on the demand for fruit, the sour varieties such as currants and gooseberries feeling the effect. Both are lower and not in great demand. Other small fruits are holding their own pretty well, though the longshoremen's strike has interfered with the movement of California strawberries to the northern markets. New apples are coming in more freely and are selling at a better figure. Old apples are also higher for the best stock. Figs are very scarce; and are not quoted at all by some houses. Plums are lower owing to increased supplies, but are moving off well. Cherries are not so plentiful and are tending higher. Both apricots and peaches are lower; but the heavy shipments of fruit to the East are keeping the local market firm. Watermelons are down one-half from former prices. Fruit buyers for canners and packers are out looking for apricots, peaches and grapes.

Currants, chest	$4.00 @5.00
Loganberries, chest	4.00 @5.00
Gooseberries, lb.	3 @6 c
Blackberries, crate	.75 @1.00
Raspberries, chest	8.00 @10.00
Strawberries, chest	4.50 @7.00
Apples, old	.75 @1.25
green, box	.75 @1.00
Cherries, black, 10 lb. bx	.75 @1.00
White, do	.50 @ .85
per lb. black,	.07 @ .11
White	.05 @ .07
Apricots, crate	.75 @1.00
Peaches, crate	.75 @1.00
Figs, black, box,	1.75 @2.00
White	1.25 @1.50
Plums, crate	.75 @1.00
Cantaloupes, standard crate	2.25 @2.75
Watermelon, lb	2 @2½ c

DRIED FRUITS.

The dried fruit market is very firm, though some of the packers are bearish in discussing the future. Locally, prunes are now being quoted at 5 to 6 cents on the four size basis; and it is claimed that business is being done at that figure. Advices from the north report that Oregon prunes are being bought at 6 and one-half cents on a 30-35 basis. Apricots are very firm and are now quoted at from 12 to 12½ cents. Apples have been moved down a half cent from the top figure of a week ago. Reports from New York are to the effect that buying of apricots has temporarily stopped since the last advance.

Apples, old crop	5½ @6 c
Apricots, per lb., 1916.	12 @12½ c
Figs, white, 1916	6½ @ 6¾ c

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, Cal., June 5, 1916.

Eastern markets on all varieties of deciduous fruits remain active and already inquiries are being made for assorted cars for the Fourth of July trade. On account of the season being exceptionally early, eastern buyers will receive better assortments for their holiday trade than they have been able to secure in several years.

It is a noticeable fact that this year, on account of the advance in the season, fruit has colored very quickly, but has not sized up as in former years. The quality, however, is exceptional on all varieties.

Alexander, Hale and Triumph peaches are now moving, likewise Tragedy, Burbank, Formosa, Abundance, Red June, Beauty and Climax plums. Cherries are practically cleaned up. The shipment of apricots will be at its height this week and we look for the first Bartletts to move in about ten days. The season in some districts is three weeks ahead and in a great many districts two weeks.

The manner in which Bartlett pears are coming on would indicate that the Placer county Bartletts and the Sacramento river Bartletts will be moving about the same time.

Grapes that were not damaged and those that were only partially damaged are showing up very well. The vines that were scorched on the new growth are putting out new leaves but no buds.

There are quite a few cars of grapes that will be ready for shipment from Mexico about the first of July. These will contain Black Prince, Malagas, Tokays and Rose Peru, likewise Cornichon and Muscats. The shipment of these grapes to eastern markets will be somewhat of an experiment as the carrying quality has not been determined and the packing may not be acceptable.

The following prices have ruled for the week:

New York — Tartarian cherries averaged $1.70; Royal Anne, $1.45; Bing, $1.97; Rockport, $1.18; Bigarreau, $1.60; Republican, $1.60; Oregon, $1.50; Seedling Cots, $2.15; Pringle, $1.25; Newcastle, $1.60; Royal, $2.50; Clyman plums, $1.60; Mayflower peaches, $1.95.

Chicago — Tartarian cherries, $1.71; Royal Anne, $1.72; Bing, $2.04; Republican, $1.49; Oregon, $1.87; Royal apricots, $1.92; Newcastle, $1.37; Clyman plums, $1.27; Beauty, $1.67; Mayflower peaches, $1.50.

Total cars of deciduous fruits shipped from California up to June 5th were 216, as against 124 to same date last year.

Special Livestock Market Report.

Cattle are slightly marked down and will probably be lower next week as there is an oversupply. Most of the receipts are light weights. Nearly 1,000 head came into Portland June 5, practically all from California, but the market remained steady.

Hogs are marked down. Arrivals are plentiful—mostly dairy hogs with an extra supply of tuberculosis. Sizes of 174 to 225 pounds are preferred. These dairy hogs will likely come until Aug. 1, then stubble stock may be coming. At Portland, prices sagged on heavy receipts.

Sheep are in small supply, mostly lambs, a few more than last week in San Francisco, but lighter in Portland where there were many last week.

Wool has been active locally in sellers' favor but not enough to change quotations. London markets higher. Australian sales suspended until embargo questions settled, but soon will open and there is a firm feeling. Eastern U. S. no higher, mills reported well stocked and not likely to buy for some time.

Black, 1916	5	@	5½c
Calimyrna, 1916	9	@	10 c
Prunes, 4-size basis, 1915			5 c
1916	5	@	6 c
Peaches,			Nominal
Pears	5	@	6½c

(Associated Raisin Co. Prices)

Fancy Seeded, 16 oz.	7		c
Choice Seeded, 16 oz.	6¾		c
London Layers, 3-crown, 20-lb. box, 1916	$1.30		
Imperial Clusters, 6-crown, 20-lb. box, 1916	2.75		
Bulk, layers, 50-lb. box, 1916	2.75		

CITRUS FRUITS.

The eastern markets continue in good shape and are paying good prices for oranges and higher on lemons. Practically all of the navels will be shipped from California by the end of this week. The valencia crop is now going to market and is being eagerly bought at prices ranging from $2.25 to $4.40 per box.

Nearly everything in citrus fruits at San Francisco is up and firm at the advance. Lemons are very high, not only on the Coast but in the eastern markets as well. They are quoted here a full dollar higher. Valencia oranges are higher for the best grade.

Oranges, Navels	$1.75	@	3.15
Valencias	2.75	@	3.25
Grapefruit	1.50	@	2.50
Lemons, box	2.50	@	4.50
Lemonettes, box	1.50	@	2.00

HONEY.

The honey market is firm, though there has been no quotable advance. Some of the cheapest stock is now out of the market. The outlook seems to be for a small crop and some of the trade are predicting higher prices. It is still too early to say much about the new crop. Old stock is now getting scarce.

Water White, comb	14	@	16 c
Amber	10	@	12 c
Water White, extracted	8	@	9 c
Light Amber, new	4½	@	6 c
Dark			4½c

HORSES.

The horse market has practically moved out into the country, where the bulk of the buying is now being done at figures which San Francisco buyers are unwilling to meet. Lots of eastern buyers are in the country; and they are taking everything suitable for military purposes at higher prices than can be realized here. Just now little or nothing is wanted, even good heavy stock meeting with little demand.

(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs. and up	$		250
Drafters, 1550 to 1650	150	@	200
Chunks, 1350 to 1500 lbs	150	@	1.75
Wagon horses, 1050 to 1350 lbs.	110	@	150
Green Mountain range horses, 950 to 1200 lbs.	20	@	75
Farm workers	50	@	100

LIVE STOCK.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)

Steers, No. 1	7	@	7½c
No. 2	6¾	@	7 c
Cows and Heifers	5¾	@	6 c
No. 2	5	@	5½c
Bulls and Stags	4	@	4½c
Calves, light	7½	@	8 c
Medium	7	@	7½c
Heavy	6	@	6½c
Hogs, grain-fed:			
100 to 150 lbs.			7¾c
150 to 250 lbs.	8¼	@	8½c
250 to 325 lbs.			7¾c
Prime Wethers	7	@	7½c
Spring Lambs, f. o. b. country points	$5.00	@	5.25

DRESSED MEATS.

(Wholesale prices to dealers.)

Steers	10¾	@	11½c
Veals, large	12½	@	13 c
Small	13	@	14 c
Prime Wethers	14	@	14½c
Spring Lambs	16	@	17 c
Hogs	11	@	12 c

WOOL

(Prices paid in the country.)

Red Bluff, year's	25	@	27c
Sacramento Valley, y's	19	@	35c
Mendocino, year's	30	@	31c
Mendocino, 7 months'	25	@	26c
Southern, year's	18	@	21c
Southern, 7 months'	15	@	18c
Imperial Valley, year's	17	@	19c
Imperial Valley, 7 mos.	14	@	15c
Nevada	21	@	23c

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	28.60	28.00		28.20
" 9	25.33	26.66	26.00	28.10
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	28.66	36.33	28.00	36.66
Feb. 6	26.68	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25
" 20	29.00	32.00	27.16	32.00
" 27	29.10	30.90	27.00	35.25
March 6	27.00	24.08	25.25	24.16
" 13	24.66	29.91	24.00	28.83
" 20	23.00	28.33	22.50	27.16
" 27	22.91	28.50	23.00	28.08
Apr. 3	23.00	28.50	22.23	28.83
" 10	23.08	29.31	22.00	28.00
" 17	23.00	27.33	22.00	27.50
" 24	23.00	25.25	22.00	25.00
May 1	23.08	24.33	22.00	25.33
" 8	23.00	24.10	23.08	25.00
" 15	23.16	22.25	22.00	20.83
" 22	23.75	23.16	21.96	22.50
" 29	23.08	24.16	21.83	24.58
June 5	23.90	——	23.00	——

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 30	28.16	36.33	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50
" 13	23.00	28.90	25.10	28.00
" 20	23.60	23.66	23.58	20.33
" 27	21.40	20.30	20.80	18.50
March 6	20.50	18.33	19.00	18.00
" 13	20.66	19.50	19.00	18.91
" 20	21.00	20.00	19.66	19.08
" 27	20.83	21.41	18.50	20.83
Apr. 3		21.75		21.00
" 10		22.00		21.00
" 17	22.00	21.16	23.08	20.91
" 24	21.80	21.83	22.25	22.58
May 1	26.16	21.00	22.00	22.58
" 8	23.33	21.20	22.00	21.41
" 15	23.58	24.58	23.00	25.66
" 22	23.58	25.46	23.00	25.00
" 29	23.50	25.33	23.00	26.50
June 5	22.50	——	20.70	——

Publisher's Department

Here is what one owner of our "California Fruits" book thinks of it: "I received your 'California Fruits' and am very much pleased with it: The very thing I wanted—would not take anything for it."—W. H. Dale.

A letter from C. A. Stowe of Stockton tells us that he is pleased with the Rural Press in bringing him results. He writes: "I am very glad to repeat what I told as regards the value of the Rural Press as an advertising medium, and will continue to speak a good word for what I consider the best and cleanest paper on the Coast."

We are rather surprised at the amount of advertising carried in this issue—but agreeably so. From the publisher's standpoint the issue this week is a well balanced, valuable number. The special articles on sheep will interest a large number of stockmen and farmers. Swine breeders will read the editorial page with interest and profit. Fruit men will find special articles and crop reports of great interest at this time. Poultry raisers will also find timely advice. The last, but most important reading matter, are the market pages. Read them carefully and keep posted on prices paid for produce.

Canning of Fruits and Vegetables—A new book by Justo P. Zavalla. This book contains much practical information that has not hitherto been available. It is the result of careful study by the author, who was sent to California by the government of the Argentine Republic, to learn the subject. The book describes actual methods of canning, also deals with the control of various micro-organisms that are found in canned fruits and vegetables. It is handsomely bound and illustrated, containing 244 pages, and sells for $2.50 net. Published by John Wiley & Sons, 432 Fourth Ave., New York.

D. H. Fallon of Pleasanton recently sold 300 two-year grade Shropshire ewes at $9 each.

The net gain in membership of the **CALIFORNIA ALMOND GROWERS' EXCHANGE** for the month of May was 53 growers, making a net gain over 1915 of 222 growers.

The total membership of the Association is 1041 growers.

Every ton added gives greater strength in maintaining prices and developing the market.

All growers are cordially invited. For full information address

California Almond Growers' Exchange

311 California Street, San Francisco.

TOMATO DISEASE.

To the Editor: Will you please inform me what to do with my tomato plants? They have the blight; it is a white, fuzzy substance in appearance.—G. H. R., Lindsay.

[We do not know any tomato disease which manifests itself by white, fuzzy substance except as that may be due to mold or mildew coming after the growth has been killed by blight, of which the symptoms are curling or blackening of the stems and leaves. A full account of the blight is given in University Circular 147 of the College of Agriculture at Berkeley, which will be sent free on application.—Eds.]

The Antelope Valley traveler on a still day is reminded on all sides of the undeveloped possibilities, by the chugging of gas engine pumping plants for the scattered alfalfa patches up to 20 acres in extent, which break the monotony of sage brush and yuccas.

Classified Advertisements

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

REBUILT GAS ENGINES from 3 to 50 h. p. Thoroughly overhauled and guaranteed. We only handle high grade engines. Write us your requirements. Motors, Gas Engines bought, sold and exchanged. Mechanical Installation Company, 181-89 Second St., San Francisco.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

FOR SALE—Used Ranch Tools, Windmills, Pumps, Engines, New Galvanized Tanks; 1000, $22.50; 2000, $32.50; guaranteed. Save half. Demmitt Company, 120, North Main, Los Angeles.

FIELD GAS ENGINES—One 20 h.p., one 15 h.p. with magnetos. Cheap. Motor installation cause of selling. The Phalanx Company, 516 Chamber of Commerce, Los Angeles, California.

WE HAVE ONE SECOND HAND Southwick Horse Power Hay Press, in good condition. If interested, write for price. Dixon & Griswold, 146 North Los Angeles St., Los Angeles, Cal.

FOR SALE—Threshing Machine, 16x32-inch cylinder. Self-binder. 5 ft. cut. Cheap; in good condition. Trade for cows or heifers. Address T. G. Hester, Morgan Hill, Cal.

SPECIAL FOR CAMERA OWNERS—Roll films developed FREE. Secret process produce fine pictures. Prints 1c up. Send for samples. Sunset Studios, San Diego, Cal.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds, $3.00 delivered. Order with remittance. WM. J. SCHROTH CO., 112-B Market St., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

GAS ENGINES—I can furnish rebuilt Fairbanks, Morse, Otto, Peerless, Samson, Union and other good makes in all sizes. All investigators buy and all buyers are delighted. Pay when satisfied. J. J. Pottinger, 189 2nd St., San Francisco.

TO REDUCE THE HIGH COST of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 1006 Clay St., San Francisco.

FOR SALE—Complete canning plant. Used one season. Capacity, two tons per day. Address C. H. Drake, Calistoga, Cal.

TREES AND PLANTS.

FOR SALE—Manzanillo Olive Trees, budded on Picholine seedlings. Younger and heavier bearers, longer lived and more vigorous trees than trees raised from cuttings. Geo. F. Rice, R. 1, Box 78, Reedley, Cal.

AVOCADO TREES for sale, fine field-grown budded Ganter and Harman variety. $1.00, $1.50 and $2.00. Magnolia Nursery Whittier, Cal.

AVOCADO SEEDLINGS FOR SALE—Also all varieties of Budded Avocados. Newberry-Sherlock, R. F. D. 2, Pasadena, Calif.

FOR SALE—Spineless Cactus Plants. Prices right. B. C. Engbert, Byron, Cal.

WANTED.

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. K. Humphrey, Principal, Stockton, Cal., Box 704.

LAND FOR SALE

COLVILLE INDIAN RESERVATION, WASHINGTON, OPEN FOR SETTLEMENT—Drawing July 27th. About 500,000 acres. Fruit, Farm and Dairy Land. Complete Sectional Map and Description. Postpaid, $1.00. Soldiers, sailors (or their widows) of the Civil or Spanish Wars may register by Agent. Write us for blank forms, which we will furnish free. SMITH & McCREA, Room 108, Eagle Bldg., Spokane, Wash.

STATE LAND NOW coming on market for first time. LISTS any 3 counties, services until 1917, $5. COUNTY Sectional MAPS showing GOVERNMENT Land, $2.50 ANY County. STATE Map showing 600,000 acres SCHOOL Land, $2.50. June Booklet, FREE. JOSEPH CLARK, Sacramento.

WANTED to hear from owner of good farm for sale. Send description and cash price. R. G. List, Minneapolis, Minn.

VACATION LAND

What section of California holds forth such inducement to the vacationist as that traversed by the Northwestern Pacific R.R. Anglers will find the finest fishing; sportsmen an abundance of furred or feathered game; swimmers and bathers have a wide choice of ocean, river and bay; lovers of wild, primitive spots will find miles of great redwood and other forests; rugged mountains and elevations will appeal to trampers; cozy camping locations will entice the family; this wondrous collection of nature begins at Sausalito and extends to the world-old forests of Humboldt county.

A very interesting description of this territory is found in the booklet — Vacation—1916, free copies of which may be obtained at 874 Market Street, San Francisco, or on application to J. J. Geary, G. P. A., 808 Phelan Bldg., San Francisco.

Northwestern Pacific R. R.

SOAP--30 lbs.--35c

The ingredients cost 35c at any drug store. The product is a splendid lyeless toilet or laundry soap, beneficial to the skin and non-injurious to the most delicate textiles. Easy to make. Can be scented to suit. Send 50c in silver, stamps, or money order for formula.

G. & R. SALES CO.,
1302 Franklin St., San Francisco.

MID-YEAR MODEL
73 NEW IDEAS

Mitchell SIX

$1325 F. O. B. RACINE
WITH 26 EXTRA FEATURES

2000 for New York

The Smartest Car Ever Shown There, They Say

The first Mid-Year Mitchells arrived in New York about April 15.

This model brought out 73 new attractions. It combined all the best ideas from 257 new-season designs exhibited at the January Shows.

It had 26 extra features which other cars omit. No car on the market, we think, has more than four of them.

This New Mitchell, complete and exquisite, won a sensational welcome. The critical New Yorkers crowded the showroom to see it. And our New York dealers placed with us an order for 2000—worth $2,700,000.

How Can the Mitchell Give So Much?

The first question asked when men see this car is, "How can Mitchell do it?"

How can we give such size, power and luxury for $1325? How can we afford to combine in one car all the new details and touches? How can we add these 26 costly extras without any added price?

Our answer is, John W. Bate.

Due to Efficiency

John W. Bate, the great efficiency engineer, has completed here a model automobile plant. It covers 45 acres, and every building is of his designing.

He has equipped these buildings with 2092 up-to-date machines. The total investment is nearly $5,000,000.

We build in this plant 98 per cent of the car. We build it for half what it would have cost under old-time methods. All of our extras—things you don't find in other cars—are paid for from these savings.

John W. Bate's Ideas

Mr. Bate also applied his efficiency methods to the Mitchell car itself. He stands for simplicity, lightness and strength. And our last two models show the final result.

Castings are almost eliminated. They are heavy and brittle. Instead, the New Mitchell has 440 drop forgings and steel stampings. They are tough and stanch and light.

The car has a wealth of Chrome-Vanadium steel. It has a new-type steering gear fitted with ball bearings. It has the "Easy gear-shift."

$1325 F. o. b. Racine
For 5-Passenger Touring Car or 3-Passenger Roadster
7-Passenger Touring Body $35 Extra

High-speed economical Six—48 horsepower—127-inch wheelbase. Complete equipment including 26 extra features.

These make it the easiest car to drive.

It is the only car with Bate cantilever springs, which make country roads like pavement. There was never a car so comfortable.

It has a power tire pump, reversible headlights, dashboard engine primer — all the known conveniences.

It has a 22-coat body finish—ten-inch seat springs — soft-finished leather upholstery.

Mr. Bate once said, "Never shall my name be connected with this car until it gives a matchless value." Now that time has come.

30-Year Service

The engineers' ambition used to be to build a five-year car. Now Mr. Bate has aimed at a lifetime car.

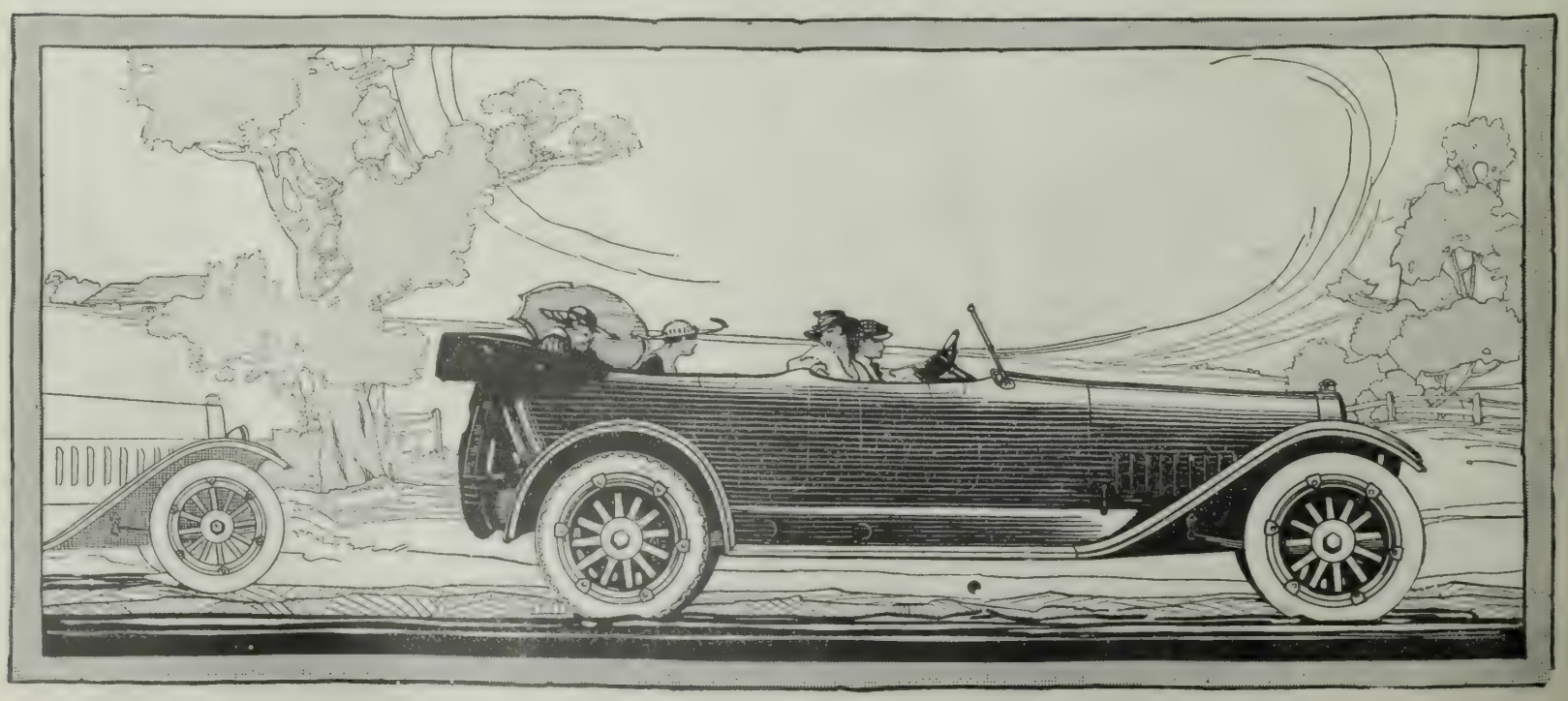
We know of six Mitchell cars which have averaged 164,372 miles each, or over 30 years of ordinary service. One Mitchell has 218,734 miles to its credit.

In the past two years many great engineers have selected the Mitchell for their personal car. Your dealer has a list of 37—men of national fame—who have done this.

So you will find here the handsomest, most complete car on exhibit. You will find a mechanical masterpiece. Behind this car is an 82-year-old concern, which has spent 13 years to develop a car like this.

If you don't know the nearest Mitchell dealer, ask us his name.

MITCHELL-LEWIS MOTOR CO.
Racine, Wis., U. S. A.



Vol. XCI—No. 25 Forty-sixth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO JUNE 17, 1916. LOS ANGELES

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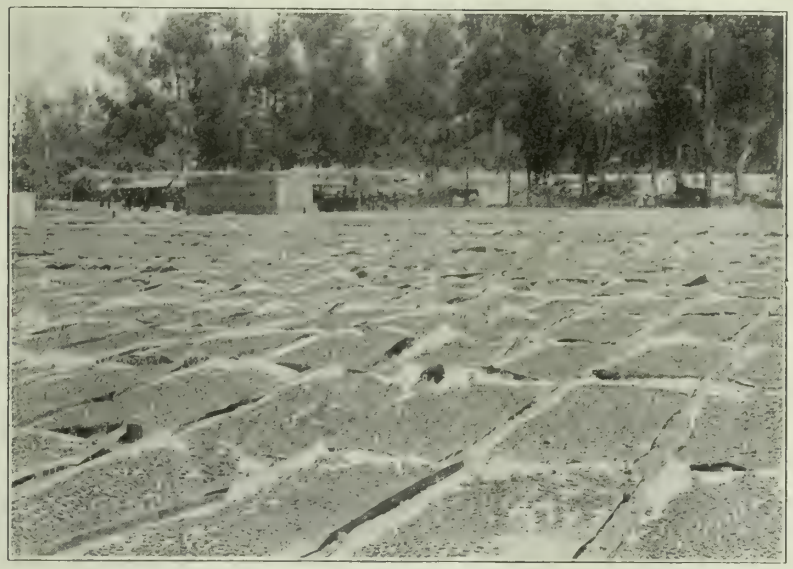
Better Apricot Drying With Less Labor.

A light crop lowers cost of drying by permitting stack drying, which means more weight of better fruit, and higher prices. It will also stimulate the demand for dried apricots in the future. Labor-saving devices lower cost of production and make greater profit.

[Written for Pacific Rural Press.]

THIS year, with a light crop of apricots, there will be plenty of trays, so that fruit may be principally cured in the stack. T. A. Jenkinson of Kings county cured his entirely in the stack one year. He did not spread the trays out at all, and got the fanciest kind of uniformly dried fruit, meatier and thicker than usual. The light crop meant higher prices, lower cost of production, and better fruit to create a desire in Eastern and foreign consumers for the heavier crop that followed next year. Apricots dry away 3½ to 1 in stack, according to F. E. Goodrich of Santa Clara county, where in the sun they would dry 5 or 6 to 1. However, this would vary widely with the weather, and stack drying might not be safe in damp weather.

Care must be taken not to leave them too moist. Mr. Goodrich says they should feel like chamois skin but not slip back and forth between the fingers. Another Santa Clara grower tests by squeezing double handfuls. They are all right for the bins, says he, if they fall apart in the hands when opened.





Sun-drying apricots. When trays are scarce or are used to dry part of the crop entirely in the stack, the cut fruit may be placed on paper sheets laid on trays. These are slipped off carefully when spread on the ground, and the few trays used repeatedly.

Shaking Fruit from Trees.—Ordinarily it is necessary to minimize the cost of production. This is done partly by Mr. Jenkinson who shakes his fruit from the trees. President E. O. Eggen of the Hemet Cured Fruit Exchange, however, with marketing difficulties in mind, says that "the greatest problem here is to get growers to handle fruit carefully to get good quality. They lose enough fruit by shaking the trees to more than offset the advantage." Mr. Eggen pays 8 cents per box for hand picking, while others pay 6 cents for shaking and picking from the ground. They get a lot of fruit too ripe and a lot too green. Hemet apricots are mostly Royals. Mr. Eggen aims to pick twice a week through a month. This gives him prime fruit at very little extra expense.

The Prune and Apricot Growers' Information Bureau of Santa Clara Valley where Blenheim is the principal variety, urges growers to pick and handle apricots for drying, as carefully as for canning. They also are thinking of its effect on the market. "Shaking the fruit to the ground," say they, "is false economy." The high prices to be received this year make it especially unnecessary.

This would seem evident with over-ripened fruit. It would be so with any fruit if it showed the bruises when dried; and if the dried fruit were sold at a premium for the best grades.

The new prune and apricot selling organization will base its selling price on grades. This will also fix the price ultimately received by the grower according to the quality of fruit he dries. This grading and standardization instills confidence not only in consumers, but also in the wholesale and retail trade, which can therefore take more interest in pushing its sale. This will increase consumption. Even now, with no premium for grading, "first quality dried apricots sell easiest at best prices."

But Mr. Jenkinson says that whatever bruises are received do not show on the dried fruit. This is partly due to his practice of not allowing fruit to get so ripe as most driers do. They get too many slabs and dark fruit; whereas if picked a little less ripe they will at worst lose a little more weight and go into standards. Over-ripe fruit hauled in a box mushes up the fruit all around it into unattractive stuff that sticks to trays. Picking a day or two earlier avoids this.

In shaking the fruit from the trees, Mr. Jenkinson uses a long pole with a hook to fit over the limbs. This may skin the limbs slightly but not considerably. Two canvases 15x30 feet are spread under the tree. The branches are not heavily shaken as they will be gone over two or three times. He has the Peach and Tilton varieties for succession of ripening. A heavy crop ripens more evenly. The canvas is lifted from one edge so the sound fruit rolls off into boxes. Over-ripe fruit lags behind with the trash and is picked out by hand anyway to avoid emptying trash into the boxes.

Clean the Trays Before Picking.—"Before the fruit is ripe, the trays and boxes should be washed in warm water if possible, to which has been added a little washing soda. The practice of dry-rubbing trays with steel brushes is a poor substitute for the wet bath because the steel brush merely loosens the dirt and mold which later soils the fruit wherever it touches the tray."

Sulphuring.—The greener fruit requires more sulphur; but on the other hand, both sulphur and time are saved by putting a bucket of water in each "stall" of the sulphur house every day. Mr. Jenkinson leaves the cut fruit in the sulphur house at least an hour after the sulphur is

(Continued on page 718.)

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FRANK HONEYWELL - Publisher and Manager
W. H. SCHRADER - Advertising Manager
D. L. SCHRADER - Subscription Manager
R. E. HODGES - - Assistant Editor
J. C. LOOMIS - - Assistant Editor

EDITORIALS

THE WEEK.

PEACE seems to be coming fast in Europe. We wish in this country we could be as near to peace of mind. We do not refer to political excitements, for they are desirable and make some of us wise. The peace which we covet would come on the cessation of hostilities by those who fake prophesies from natural phenomena, which science has never shown to have any relation to earthly conditions. There is danger and disaster enough in human affairs to alarm credulous people and to disturb them in peace of mind and industry. There is no excuse for frightening people by deductions from sky events, which occur only in the everlasting harmony and beneficence of the universe. Human experience in the north temperate zone is condensed in these beautiful lines:

What is so rare as a day in June!
Then, if ever, come perfect days.

And yet, one of these pestilential prophets is allowed, by a local journal, which should have more sense and self-respect, to publish a forecast of more gales, hailstorms, tornadoes and earthquakes during the last half of this month than any person is apt to encounter in a lifetime. And all of these are unwarranted deductions from the regular conjunctions and oppositions of planets, of which more than half are either so small or so far away that they are never seen with the naked eye, and all of them have been conjoining and opposing each other, ever since creation's dawn, in the course of their regular movements, and have never been caught doing anything amiss to mankind since the human race laid the foundations of astronomy on the plains of Chaldea.

A man has a right to exercise his mind with speculations of this kind, of course, and to communicate the results to scientific bodies, which will receive them; but to publish them as lessons in science to a public not trained to judge their value and disposed to receive them as teachings of science, for which the public has naturally respect, should be prohibited by law as a pernicious form of misrepresentation. Such publications are not only against peace of mind, but they discourage industry and unsettle business by making fools of people who happen not to be endowed with the normal modicum of common sense.

AMERICANISM IN FRUIT SELLING.

VERY sharp rivalry prevails this month among the political platform-makers as to which shall put forth the most stalwart pronouncement of Americanism for their presidential candidates to march on. We are quite in sympathy with such declarations of an attitude for Americans. European patriotism is generating so much heat that the milk of human kindness abroad is forced into fermentation, the alcoholic and vinegary products of which are surely very offensive to American ideals of humanity, and they must be protected from such pollution. But the campaign orators will ring all the needed changes on that subject during the next five months. What we are particularly thinking of is the greater appreciation, protection and patronage of American products by Americans, which surely should be promoted, but we shall not try to take that subject away from the campaign orators. It is the duty of the general government to provide adequate protection against ruinous competition with foreign capital and labor. The particular duty which is up to the California producers of unique American products is to popularize them in this country. Consumption of them is but a fraction of what it should be—in the interest of both producer and consumer. It is hard to realize how small the consumption actually is. Take a few instances of what the per capita consumption would be if the people of the United States should actually eat all we produce in our best years of a few products distinctively Californian:

Four-tenths of a pound of dried apricots.
One-tenth of a pound of dried figs.
Seven-tenths of a pound of dried peaches.
One and two-tenths pounds of dried prunes.
One and six-tenths pounds of raisins.
One-quarter of a pound of English walnuts.
One-twentieth of a pound of almonds.
One-twentieth of a pound of pickled olives.

And the list might be extended to cover all our special products with similar showing. Remember that this is the per capita of the United States' consumption for a whole year. A prize-taker at an eating-match might take the whole collection between the meals of one day, just to sharpen his appetite. And yet, with a consumption so small, considered in its relation to the American disposition and ability to eat well, some people seem to be sure that we are suffering from over-production, and that we need the whole of hungry Europe to eat us up. European demand has served a good purpose; it will always serve a good purpose and should be developed to the limit, for California is in this unique business for nothing less than a world-purpose, but common sense clearly declares that we need more Americanism in our selling designs and policies. The citrus-growers' association, the raisin growers' association and others are advancing toward it with strong strides: the prune growers, peach growers, olive growers and others are striking out in the same direction. Growers must organize to pursue publicity declarations and demonstrations. No one else has the means and motive to do it adequately. We are inclined to believe that if there were nothing beyond this involved in the organizations to which we have alluded, this alone would be warrant for all the effort and money which these organizations have cost. But this is, of course, only one of the purposes involved, even if we do contend that it is the foundation upon which all of them must build their futures. Therefore, get together; vote money for publicity; increase the pitiable figures of American consumption which we have given, a hundred fold! Then the great American question will be, how can we get enough of these wholesome, delicious and distinctive California food products to hold America over all!

A TEST OF DIRECT TRADE.

QUITE in contrast with the breadth of the foregoing exhortation we give another of most direct local import, and that is to take an interest in an experiment which has been in progress in Sacramento for a month, and has been so productive of interesting results that it is to be continued for another fortnight. It is not an establishment of direct trade, but it is an experiment to give a clue as to whether such direct trade as it contemplates is practicable and capable of yielding benefit, both to producers and consumers of food products. The plan was devised by our distinguished Californian, David Lubin, who succeeded in bringing forty-odd nations into active membership in the International Institute of Agriculture, established and endowed in Rome by the King of Italy—as most of our readers know. During the last few months, Mr. Lubin has been in Washington, pressing upon the attention of Congress the need of provisions to make the trade in farm products fairer to both producers and consumers. One phase of his plan is to facilitate distribution of local products within the vicinity of their production by the parcels post service, and during a visit to California last winter he interested Sacramento Grange to carry out an actual test with persons and products in the vicinity of the State capital. This the Grange is doing most actively, and with such success that the experiment is to be worked out farther, as stated above. Meantime, Mr. Lubin is preparing a national organization to seek the action of Congress toward making such arrangements with the local operation of the postal service as shall promote direct trade in farm products, to the end that the buyer shall get his goods and the producer get his pay, with satisfaction to both. The Southern Commercial Congress, under the leadership of Senator Duncan U. Fletcher of Florida, is supporting Mr. Lubin and taking steps to reach the ends he has in view. A bill has been outlined providing for demonstration by actual tests, of the feasibility and popular interest in this method of direct trade, and, as we understand it, the experiment in Sacramento is a voluntary undertaking, entered into by the people and the local postoffice, to furnish data upon which a broader experiment can be reasonably called for. The plan, which has been followed closely in the Sacramento experiment, is that the postoffice will maintain a marketing bureau to which the producer will send tags or tickets stating the kind of produce, price and quality which he has for sale. Consumers then will order through the postoffice, and as the farmer turns his produce over to the mail carrier he is given coupons covering the price, redeemable at the postoffice. This makes a cash trade, which relieves the producer from all risk of collection, and for this advantage it is up to him to make the delivery of such quality as to be acceptable. The preliminary reports from Sacramento indicate that this mutual obligation is being most fully met, and receivers of produce are greatly pleased with the quality and freshness of the material delivered to them by the parcels post carriers. The members of Sacramento grange have provided the facilities for the trade for which the local postoffice is not fully equipped, and explains the undertaking so that active popular interest is secured. It should be understood of course that this is not a means of trade now undertaken by the government, but is a voluntary co-operation for the purpose of demonstrating facts. It will be up to Congress to go farther in the way of establishment and to arrange the operation of the parcels post to facilitate such a form of direct trade. It is very interesting and may be immensely beneficial.

FISHERS WORSE OFF THAN FARMERS.

STATE MARKET DIRECTOR WEINSTOCK is going fishing this week—which seems a very seasonable indulgence for a tired man. But he is not going fishing for fun. Some one has told him that farmers are not in the same class of extortion-sufferers as fishermen, and, surely, if he can find anyone worse off than a farmer, it is his duty to fly to his rescue. Besides, the law talks about fish, and the late Mr. McPherson, who made the law, lived in Santa Cruz and wrote fish into it, because there is more fishing on one side of Santa Cruz than there is farming on the other. It may be some consolation to the farmer to know that even if he gets only 35 cents out of every dollar he produces, he is still doing three and one-half times as well as a fisherman. Figures compiled by the Market Director show that under present conditions the wholesaler receives 40 per cent, the retailer 50 per cent, and the fisherman 10 per cent of the dollar paid by the ultimate consumer for fish. Of course, the fisherman has free range and no taxes to pay, but then he dodges sea sharks only to fill the maws of land sharks, and the claim is that he makes only an average of $5 a week for his labor. Still, of course, he can live by eating the stale fish which he cannot sell—but there he has no advantage over the farmer. So we must acknowledge that it is time Col. Weinstock went fishing, and we expect him to bring home a big string of smelt. But there is a broad aspect to fishing as there is to farming economics, for with the exactions noted above the retail cost of fish to the consumer is so high as to be prohibitive to a degree. As fish is particularly brain food, this is really a public calamity. Some figures are cited to

show the secret of intellectual supremacy. The people of Boston eat on an average of one pound of fish to eight pounds of meat. The people of San Francisco eat on an average of but one pound of fish to twenty pounds of meat. Thus, the Bostonians, per capita, eat two and a half times as much fish as do the people of San Francisco. And this, as the old showman used to say, accounts for the milk in the cocoanut.

EUGENICS AND AGRICULTURE.

SINCE it has been dawning on our slow wits that the new word "eugenics" does not mean running away with another man's wife, we have been gaining more respect for it. Instead of being synonymous with too much affinity, it may be equivalent to no affinity at all—which may be swinging too far the other way. However, we are learning also that eugenics signifies not alone the incidents of engendering, but the whole environment of it: not alone the actual endowment of the thing engendered, but the conditions amid which it grows up. And so being "high-born" or "well-born," according to the modern science of engenics, does not wholly consist in the quarterings on the escutcheon of the generator, but includes what goes into the lungs and stomach of the one generated. And so we come by easy stages to the thesis of Prof. O. F. Cook, of the U. S. Department of Agriculture, a distinguished plant-breeder who has lately taken to the fundamentals of breeding population. Prof. Cook's thesis is that, though "statistically speaking cities are centers of population, biographically or eugenically speaking cities are centers of depopulation," and he writes an admirable essay to show that "city-life is sterilizing the best lines of descent on a large scale, and population must be held on the farm if the race is to improve"—all of which is published in the Journal of Heredity for June. And he intimates that the most important problem of the day for the human race is "how to rearrange our social and economic system so that more of the superior members of our race will stay on the land and raise families instead of moving to the city and remaining unmarried or childless, or allowing their children to grow up in unfavorable urban environments that mean deterioration and extinction." And Prof. Cook supports his contention with very acute observations of existing facts and the fallacy of efforts to secure the desirable increase of people in rural life by "revolts or revolutions that would destroy or change too suddenly any important or well-established relation of life." This, of course, includes all "back to the land" schemes and sensations to which he probably refers when he forcibly points out the "danger of wasting too much time and effort in attempting to salvage the derelict populations of the cities." Evidently he believes that the larger rural population must come from growing up more children in the country, and that must, obviously, be done by rendering rural industries relatively more profitable and rural life relatively more attractive than they now are. And when he closes with the observation that "agriculture represents the constructive eugenic condition which must be maintained and improved if the development of the race is to continue," we feel impelled to join a eugenic society even if our charming wife should begin divorce proceedings forthwith. The situation certainly demands personal sacrifice.

Don't Say Algaroba.

To the Editor: Referring to your comment on the term "Algaroba," I might say that Algarobia, that is in full Algarobia glandulosa, is a name, now obsolete a half-century, for the mesquite. Strictly speaking, Algarobia is a synonym for Prosopis, the generic name for all the mesquites.—W. L. Jepson, Berkeley.

Thank you. We did not comment on the term algaroba. We dodged the question and commented on the carob, which we presumed the querist wished to know about. We are very glad, however, to have algaroba knocked out, authoritatively.

Why No Strawberries?

To the Editor: What is the reason our strawberries don't blossom and bear fruit? They are over a year old and only had a few berries on them. They look thrifty enough.—Subscriber, Van Nuys.

Without knowing more about the case than you state, we can only guess that you are treating them too well: either too much manure or too much water, or both. If they satisfy your ideas as an amateur in the way of being thrifty, they are probably too thrifty. We have several more guesses coming but this seems most likely to fit.

Black Aphis of the Cherry.

To the Editor: I send leaves and twigs from my cherry trees. Kindly advise me what the pest is and what to spray with. The grafts that were put in last spring are especially affected.—W. A. G., Hollister.

It is the black aphis, or plant louse, of the cherry. It has hatched from eggs wintering on the bark, and, as you cut back branches for grafting, the growing grafts are getting all that hatched out below, which would otherwise be more widely distributed. Spray at once, with either an emulsion or tobacco extract wash, being especially careful to reach the under sides of the leaves. Repeat the spraying as the insects appear later and next Spring give them a dash just as the buds are opening. As with other aphids, one early shot is worth several later ones.

Box Elder Bug on Strawberries.

To the Editor: Enclosed please find a bug that destroys our strawberry plants. I find them all around the plant in a circle and they seemed to be breeding. The plant gradually wilts and dies. The bugs also eat or suck the juice from the berries. Last year the bugs were in the patch, but I did not notice them around the plants until this year.—Subscriber, Healdsburg.

They are the box-elder plant bug (Leptocoris trivittatus). They are not reported as breeding except on box-elder trees, though they do infest other plants, including fruits which they cause to drop or to dry up on the trees. They do not usually occasion much loss, however, and it is possible that you may apprehend greater injury than you will experience. They can be killed by spraying with soap or tobacco solutions, but this will probably spoil more strawberries than the insects will. Hand-picking and crushing is effective to whatever extent you have patience to pursue it. As they suck and do not bite, poisons do not reach them.

Blister Mites.

To the Editor: What is the matter with my trees? I am sending leaves to let you see how they are affected. Please tell me if there is any way of saving them.—S. F., Woodland.

There is no way of saving leaves such as you send. They are gone with the work of the blister mite and the mites are also gone, so far as we can see. The insect is microscopic and your chance of seeing it is also very small. It did this work earlier in the season. The trees may be protected now by sulphuring just as you do for red spider. The proper treatment, however, is to spray with commercial lime-sulphur (one part to thirteen of water) just as the new growth is coming out of the buds before the blooms open. It is at that time that they are getting ready for work and they can be reduced below injury by that treatment. They injure both apples and pears, both leaves and fruit.

Treatment of Manure.

To the Editor: I enjoyed reading your article, "Manure Wet or Dry," in your May 27th number. I wish to have your opinion on the treatment of a pile of manure hauled in from a grain ranch and consisting mostly of old well-rotted mature. The pile is about 20 feet by 20 feet and is being stored over summer to be spread on a vineyard next fall. The pile is nearly dry now; will it be a good plan to plant a lawn-sprinkler on the pile and keep it moist during the summer?—Subscriber, Ingomar.

If the manure is really well-rotted it has already gone through fermentation and is not likely to be injured in the pile. If it is really dry, even though it has not fermented, the same is true for it is hardly likely to draw much moisture from the interior valley air at this season. But to be safe you ought to dig down deep into the pile once in awhile and see if it is heating. If so, spread it widely to get drier and cooler. It could be composted as you suggested but you would have to be ready to shovel it over from time to time to slow down any fermentation which might be started by the water. It would hardly be safe to wet it down and let it lie because you do not really know how much fermentable stuff there may still be in it.

Treating Gophered Trees.

To the Editor: I have five or six three-year-old prune trees which gophers have girdled nearly all the way around just below top of the ground. Their leaves have all turned yellow and they do not grow, but they are still alive. I think the gophers must have gnawed the bark off last winter or this spring. Can I save them or not and what could I put on them?—H. L. H., Tudor.

It would have been fortunate if you had discovered this injury last winter for the best treatment for a badly gophered young tree is to pull it out and plant a new one. As, however, you cannot do that now, you may try to save the injured ones. If there is even small show of connected bark, the tree will try to recover. You can help it by cutting back the top, saving only a bud or two of last year's growth. This will reduce the evaporation which the tree has to supply or die. Then mulch two or three feet around the tree with rotten straw, or other litter, so as to hold the moisture well up to the soil surface so that it may prevent the wound from drying. This will promote granulations from the edges of the wound and also from cells which the gopher may not have entirely cleaned off from the face of the wound. As the wound is entirely under ground it does not need any covering. Pour a few buckets of water on the mulch once in a while to help the injured tree to easy sap and to maintain all summer the moist conditions favorable to bark healing.

"Leak" of Potatoes—Midsummer Planting.

To the Editor: Last year I raised a crop of potatoes in the river bottom and dug them the first of July. They were ripe but rotted in the sacks within two weeks. What was the cause of this? Also is it good to plant little potatoes for seed? Would potatoes dug now be fit to plant for winter potatoes? I want to plant this month. Is it better to plant the whole potato than to cut it?—R. W. H., Sanger.

Your potatoes went off with what is called "the leak," because juice runs from the sacks, etc., in which the potatoes are stored. It is a rot caused by a fungus (Rhizopus nigricans) which attacks broken skin or bruises and quickly invades and destroys spuds stored in masses. It is prevented by careful digging, by storing so that the air can circulate to prevent sweating and by picking out decaying tubers. Though there has always been difference of opinion as to using small potatoes for seed and results may be dependent upon growing conditions to some extent, we would not choose very little potatoes nor buy such for planting. And yet perhaps seed should be small rather than very large: "small medium size" may give you the idea. These can be planted whole. Cutting is not essential unless you are using very large tubers and planting them whole is wasteful. You can use the last crop for seed if they matured well, but spread them in strong light (not burning sunshine) and allow them to get green and start sprouts before planting.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., June 13, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	0	38.99	45.58	58	42
Red Bluff	0	20.21	24.83	98	58
Sacramento	0	18.28	20.07	98	50
San Francisco	0	27.12	22.23	68	48
San Jose	0	16.31	16.78	88	44
Fresno	0	11.72	9.68	100	56
Independence	0	10.34	9.53	92	—
San Luis Obispo	0	26.89	20.51	76	42
Los Angeles	0	19.92	15.63	72	54
San Diego	0	12.55	10.01	66	56

June Work for Walnut Codling Moth.

[Written for Pacific Rural Press.]

To the Editor: The January 22 issue of Pacific Rural Press had a short article: "Band Walnuts for Codling Worm."

I have seen the larvae in all stages of growth on the walnut and am well assured that the eggs were laid on the green hulls of walnuts of all stages of growth, that the eggs hatch there, that the stem end seems to be preferred by the moth for laying, that at all events the young worm eats into the green hull and seeks the stem end, then eats through the soft tissue of the stem end into the walnut. There it eats the inner partition wall, apparently in preference, and before it attacks the meat of the kernel.

I have opened many codling moth culls in which the meat had hardly been touched, but Mr. Worm was a fellow of very respectable size, and about ready to leave the walnut. I have seen him make his exit, letting himself down by a silken thread. I have found him spun in his cocoon for the next cycle of his existence, the stage of preparation from which he or she will emerge as the full-fledged codling moth. To crawl up a tree is it, or to reach the young walnut by means of an aeroplane?

I have found the cocoons between the dried hull and the shell; in cracks of walnut trays on which walnuts were being dried, and rarely between the meat and shell of nut. And dry crack is good shelter. Fallen leaves and cull walnuts, if left on the ground undisturbed, will probably harbor most of the larvae. Therefore picking up all worthless culls and destroying them will be good. A flock of chickens will destroy all the worms they find. The harrow will, however, be found to be the most effective to grind up the leaves and culls left on the ground. If followed by irrigation there can be little chance for a new crop of codling moths.

The remedy which is so effective in the case of the apple seems inapplicable in the case of the walnut, because, if I judge rightly, the eggs are laid on the green walnut in any and all stages of its growth. The applications would therefore have to be too frequent to make the remedy practicable.

I have a strong suspicion that my walnut orchard and others had such a generous share of codling moth culls last season because the codling moth in this immediate vicinity did not find its most congenial host, the apple and pear blossoms. There was almost a total failure of pear blossoms and very few apple blossoms. I am well convinced that the walnut is not a congenial host for the codling moth, and it is reasonable to suppose that if apple and pear growers will do their duty, the walnut growers will not suffer greatly, provided always that the codling moth of the walnut and that of the apple are the same.

J. G. Berneicke, M. D.

Santa Ana.

Editorial Note.—Banding the trees is one of several means of getting the larvae and pupae before they turn into moths which can lay their eggs on the nuts. Because bands form a protection for larvae, the latter may be found there and destroyed in greater numbers than without bands. All other hiding places should be abolished as suggested by Mr. Berneicke.

Geo. P. Weldon, chief deputy State Horticultural Commissioner, suggests for codling worms on apple trees, "bands put on trees as traps in summer" and says that the worms not only let themselves down by silken threads but also crawl out and down the limbs and trunk where they find protected winter quarters. There they spin a cocoon around themselves and do not pupate till spring. He also says that worms which have fallen with the fruit and escaped, "can readily reach trees where hiding places may be found." Wickson's California Fruits says that if the worm lands on the ground "it usually seeks the trunk, which it ascends and soon finds a hiding place where it spins its cocoon."

Prof. H. J. Quayle, entomologist for the Riverside Experiment station, writes thus:

"Control of codling moth on walnuts has not been satisfactorily worked out. Except in possibly a few cases, their numbers have not been sufficient to warrant such an expensive treatment as would be involved in spraying.

"Practically the only other means available aside from spraying is to band the trees. These bands are placed on the tree at a season to catch the worms as they are coming down out of the tree. So far as our observations have extended the infestation of nuts seems to be in midsummer; that is, infestation by the second brood. We have noted a number of worms in hibernation in rough places in the bark. If additional situations such as loose bands could be provided which will enable the destruction of the worms later, it would prevent an infestation the following year, or if the worms come down the tree in any numbers from the first brood, the trees should be banded the latter part of May or June to capture the worms of this period.

"Infestation of walnuts by codling moth under general field conditions has arisen in the past two or three years. The insect seems to be increasing in its attacks on the walnut and is most abundant in Santa Barbara and Orange counties.

"A communication recently received from South Africa indicates that the codling moth is a rather serious pest of walnuts in that country. Whether it continues to increase in numbers in this state remains to be seen."

STATE AVERAGE FRUIT CONDITIONS.

[Written for Pacific Rural Press.]

"Apples are the only deciduous crop which showed better condition for the State as a whole on June 1, 1916, than on June 1, 1915," writes Geo. P. Weldon, Chief Deputy of the State Commission of Horticulture. Apple conditions are estimated at 3 per cent better than a year ago.

In arriving at the State average conditions as given in the percentages below, the conditions in each county were given weight according to the per cent of the total bearing acreage in that county, based on estimates of county horticultural commissioners.

While the figures indicate a light crop, they do not necessarily mean a bad year, for fruit in general will be of better quality and should command higher prices.

	June, 1915.	June, 1916.
Almonds	76	58
Apples	73	76
Apricots	71	39
Cherries	57	27
Figs	93	90
Peaches	85	68
Pears	71	62
Plums	79	74
Prunes	68	52
Walnuts 100		79

Canning apricots are being sought in Santa Clara valley at $50.



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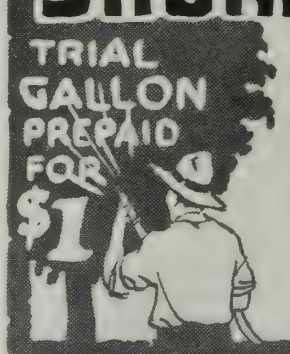
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Wipe Off Orange Suckers Frequently.

[Written for Pacific Rural Press.]

June is the time to sucker oranges, according to G. K. Hostetter of Tulare county. There are two or three other times about as good—when the new growth is just starting. Some years the suckers are "thick as hair on a dog's back," while other years the same trees bear none at all. By the time fruit wood is perhaps 8 inches long and the longest suckers 1½ feet, the suckers should be wiped out by brushing both hands along the main limbs and trunk. At the right stage, they break loose easily, leaving practically no wound. If left a little longer till the suckers harden, they tear out pieces of bark when broken loose; and a little later, there is no way but to clip them out at great loss of time and after stunting the fruit wood.

By that time, too, suckerous buds are forming at the base of the shoot, and if allowed to develop, will multiply suckers when the first one is cut off. Frequent cleaning out prevents this, and as emphasized by H. C. Crumrine of Ventura county, gives young trees the "fruit wood habit."

"Sucker citrus trees two or three times a year," says Fred Arth of Redlands, "but leave the last crop of suckers on to take the sap and help make fruit wood dormant so frost won't hurt it."

"Avoid suckers by keeping the tree thinned out so the sucker wood will become fruit wood. They are suckers only because they happen to come inside the tree and have vigor enough to grow to the light," says A. H. Nelson of the Mentone bench. He claims very little trouble with suckers; because he keeps the trees so light and airy.

PLUM PICKING AND PACKING

[Written for Pacific Rural Press.]

Plum picking for shipment to fresh fruit markets should be done earlier than the inexperienced like, and later than is done by those who spoil the market by shipping fruit too immature, according to H. C. Blake of Vacaville.

Proper plum maturity for shipment is also a matter of locality. The Kelsey colored on the tree at Vacaville is too ripe to ship, but at Lodi is all right. Picked green and hard at Vacaville it will color and soften en route. Straw colored Climax with slight pink at apex will ripen and color perfectly en route. Tragedy stands shipment if picked almost fully colored. It can be picked when color begins to show and will look all right on the market, but may not attract the buyer again.

Each plum in the basket should be perfect. It should be packed tight but not bruised; and the cover of the crate cleared just enough not to bruise fruit, but to prevent its shaking loose by hard bumps en route.

CARTONS FOR PRUNES AND APRICOTS.

[Written for Pacific Rural Press.]

A half emptied box of dried prunes or a sack of dried peaches at a grocery store. Are they dirty? Do flies help themselves? Do you hanker for them?

The Prune and Apricot Growers' Ass'n hopes to pack in family-size cartons containing three, five, and ten pounds each to keep the fruit fresh, sweet, and clean.

During the five years ending 1902, Americans ate an average of 17,000,000 pounds of prunes annually. In the five years ending 1914, this average had dropped to about 9,000,000 pounds.

This is due, among other things, to unattractiveness of the fruit as displayed before consumers. The Growers' Information Bureau says, "Obviously no individual packer or grower could afford to do the extensive experimenting necessary for the development of a satisfactory small package." Neither have they been enough able to stimulate prune and apricot consumption by advertising. Neither could they agree together enough to put out a really uniform standardized pack for the whole State.

Collectively, the growers can and must do these things or some must go out of business.

ALMOND ACREAGE.

Almond acreage was badly mixed in the table printed in our issue of May 6. Paste the following figures over the last two columns in the tables, which we suppose you are keeping for reference. Also give Mendocino county credit for 665 acres apples non-bearing:

County	Bearing	Non-Bearing
Alameda	385	.....
Butte	2,000	1,500
Colusa	300	2,500
Contra Costa	1,750	1,000
El Dorado	.....	.....
Fresno	.....	.....
Glenn	200	1,720
Humboldt	.....	.....
Imperial	.....	.....
Inyo	.....	.....
Kern	.....	130
Kings	.....	.....
Lake	285	182
Los Angeles	437	.....
Madera	50	.....
Mendocino	25	19
Merced	450	410
Modoc	.....	.....
Monterey	10	35
Napa	.....	.....
Nevada	25	.....
Orange	.....	.....
Placer	250	.....
Riverside	979	426
Sacramento	1,060	750
San Benito	200	100
San Bernardino	.....	.....
San Diego	85	21
San Joaquin	2,000	1,000
San Luis Obispo	150	1,895
Santa Barbara	.....	.....
Santa Clara	238	75
Santa Cruz	.....	.....
Shasta	35	.....
Siskiyou	5	1
Solano	1,000	415
Sonoma	106	17
Stanislaus	912	1,109
Sutter	1,500	998
Tehama	500	400
Tulare	30	220
Ventura	.....	.....
Yolo	3,500	1,100
Yuba	135	50
Totals	18,602	16,073

CABBAGE WORMS.

To the Editor: What will keep green worms off from cabbage?—G. W. I., Watsonville.

[Spray with lead arsenate paste 1 pound per 25 gallons until cabbages half grown. This is poison and should not be used stronger or later than above. Powdered white hellebore mixed with an equal amount of flour and sifted on the cabbage is effective and not poisonous.—Eds.]

The Kings County Packing Co. started operatons last Wed. on apricots. They expect peaches early in July. Upward fruit prices in the East are reported.

Compare the Cost

TWENTY years ago a farmer borrowed $1,000.00 at 6 per cent straight on the old fashioned loan plan. He has renewed the loan at intervals with constant expense of renewal commissions, abstract charges and recorder's fees, and he still owes the principal sum of $1,000.00

He has paid $60.00 interest every year for 20 years, a total of 1,200.00

Total cost to farmer, including $1,000 still unpaid..... $2,200.00

Under the amortized rural credit plan, his total interest and principal payment would be $90.76 a year for 20 years, or..... 1,815.20

A saving on a loan of $1,000 of..... $ 384.80

The following table shows the amount of INTEREST SAVED by borrowing on the amortized or rural credit plan:

Amount Borrowed.	Annual Payment Amortized Loan.	Total Payments. 20 Years.	Straight 6 per cent for 20 years and Principal Repaid.	Interest Saving Amort. Loan.
$ 1,000	$ 90.76	$ 1,815.20	$ 2,200.00	$ 384.80
2,000	181.51	3,630.20	4,400.00	769.80
4,000	363.02	7,260.40	8,800.00	1,539.60
8,000	726.05	14,521.00	17,600.00	3,079.00
10,000	907.56	18,151.20	22,000.00	3,848.80

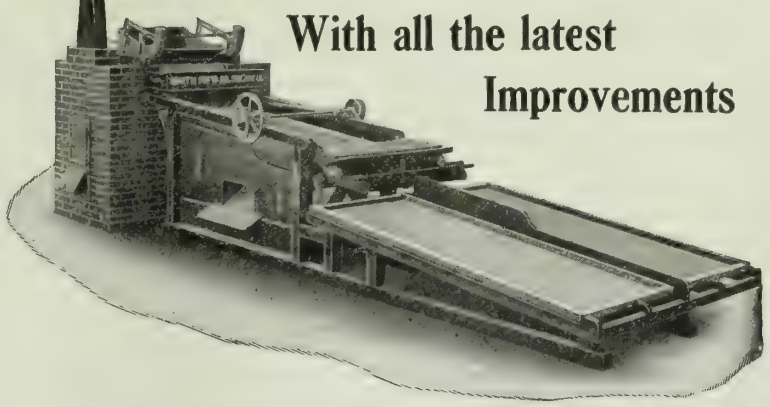
We think this amortized loan **which can be paid off any time** is the best loan, for the farmer, being offered in California, but if preferred, will make 10 year loans, annual interest and favorable prepayment options. Both types, each being for a long term, offer a big advantage in selling a farm, for each gives buyer longer time to pay out than sellers or other loan companies generally grant.

Full information given on request without obligation to borrow.

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Prune Dippers and Graders



With all the latest Improvements

Combined Dipper, Grader, Automatic Spreader.

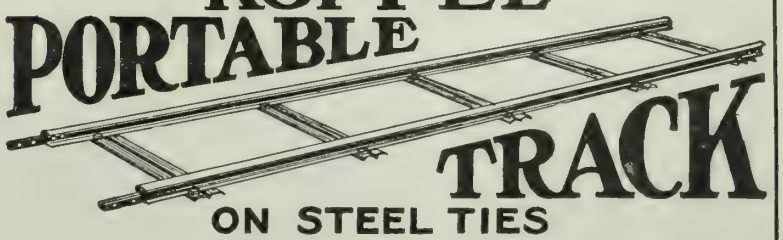
Best and Cheapest on the Market

Dipper-Graders, Spreaders, Field and Transfer Cars, Etc.
Perfect in Efficiency.
Lasting in Durability and Fully Guaranteed.
Write for Catalog and Prices.

SMITH MANUFACTURING CO.

Stockton Ave., near The Alameda. SAN JOSE, CAL.

KOPPEL PORTABLE TRACK



ON STEEL TIES

Also Steel Rails, Steel Ties, Tray and Transfer Cars, Turn Tables and Special Material for

DRY YARDS

Proper Equipment Costs Little and Saves Much

ORENSTEIN-ARTHUR KOPPEL CO.

241 Rialto Bldg., San Francisco 757 So. Los Angeles St., Los Angeles

Our Instructive Catalogue P will be Mailed on Request

PLANT NOW

CARNATIONS from 2½ inch pots, 12 for $1.00.
ASTERS—in 3 colors, 35c per doz.
CHRYSANTHEMUMS—my selection, 12 for $1.00.
PELARGONIUMS—40 varieties, 4-inch pots in bloom, 25c each. Send for price list.

GEO. N. TYLER,
Los Gatos, Cal.

Established 1878. Incorporated 1906.

Leonard Coates Nursery Co.

MORGAN HILL, CAL.

"We Grow Everything Worth While"

Send for Catalogue.

Better Apricot Drying With Less Labor.

(Continued from page 713.)

all burned, so the fruit will "sweat" in the fumes. It is tested by cutting a thick piece. Where fumes have penetrated, the flesh looks cooked or watery. They should penetrate entirely through.

The Information Bureau recommends five pounds sulphur per 200 pounds fruit in a fairly tight house. Larger fruit requires more. If the sulphur burns freely, 3½ hours in the fumes are enough. Fruit properly sulphured has the pit cups half full of syrup and will keep its bright color longer than poorly sulphured fruit. Oversulphuring gives an undesirable appearance and makes fruit stick to trays.

Convenient Equipment lowers cost of production. In Mr. Jenkinson's shed, a steel track runs from the north end to the other, down the center between two rows of cutting tables. Two women work on each end of each table, each filling one end of a tray. The trays are stacked four or five deep as they are filled, then set onto the car.

Pits are scattered out over a concrete slab 16x20 feet near the cutting shed; and left till the season is over.

Cars full of freshly filled trays are transferred to a track running from the south end of the cutting shed a little distance to the sulphur houses.

Labor Saving Sulphur Houses.—The sulphur house is 13x16, containing four "stalls," each four feet wide. The stalls are made practically air tight by fastening building paper each season over the frame of each stall. Paper makes a hotter house than wood. Galvanized iron or tin would soon be eaten up by the fumes. Concrete properly mixed makes a very satisfactory permanent sulphur house. Two 15-foot rails for the cars of fruit to run into each stall project two feet in front to the transfer track for convenient transfer of the cars. Two six-foot cars are put into each stall, end to end. This requires only one door and two rails for each pair of cars, instead of four rails, and two doors to handle. To get the rear car out, a tree-shaking hook is used.

The freshly sulphured cars of fruit are then run on past the sulphur houses and transferred to field tracks. These are in sections of one rail length so they are easily moved. After drying time, they are stacked back of the sulphur house both to leave the alfalfa drying ground open for pasture or hay making, and to save the ties from rotting. Mr. Jenkinson thinks alfalfa the finest dry yard. It should not be irrigated shortly before drying time, or the fruit will dry too slowly, but he has never noticed molding of fruit.

Depending on number of trays as compared with size of crop, the fruit is usually left in the sun a day or more. If there is a light crop, the fruit will be stacked after a day and will dry evenly and heavily a few days before the trays must be used for another batch. This is a good job for idle men when rush work is likely next day. If dried two days in the sun in the usual Kings county weather, one day in the stacks, with trays alternately shoved endwise a few inches for ventilation, will fix the fruit ready for storing. Three days in the sun and three to five in the stack are usually desirable in Santa Clara valley.

Soft Fruit Separate.—As usual, there is the problem of getting fruit cutters to cut entirely around the seam and not tear a corner of the fruit apart. Mr. Jenkinson thinks day work rather than piece work would solve the problem but it is too expensive. The Information Bureau advises that soft fruit be kept separate from the rest, and cut by a trustworthy day worker. "Careful cutting will save much ripe fruit that would otherwise go to the slabs."

A foreman or forelady in the shed will save more than good wages by insisting and watching that fruit be placed carefully right side up on the trays. Spilled juice means lost weight and ragged fruit, to be scraped from the tray at great loss of time.

Brass Tray Scrapers.—In this connection we repeat the experience of Mr. Goodrich, who would not take $5 each for his little sheet brass paddles to clean off stuck fruit from the trays, if he could not replace them. The brass does not gum up nor tear the fruit, while steel or wood is generally unsatisfactory.

Labor-Saving Trays. — Redwood trays, if clean, do not stain the fruit as does pine, according to both Mr. Goodrich and W. K. Luce, also of Santa Clara county. The latter saves time and labor by having trays 3x8 feet instead of 3x6. The latter would require two men anyhow. They might as well handle the larger trays. At Mr. Luce's work, about 1½ boxes or 60 pounds of fruit are placed on each tray. Trays are piled 18 high on the cars—over shoulder high. It is easy enough to pile them up, but they must be careful in taking the top trays down as they come from the sulphur house or they spill the juice.

FENCE LAW.

To the Editor: My ranch in Kern county is surrounded with cattle-range lands. My fences were built by the party I bought my land from. What is the law as to fences?—B. G. C., Los Angeles.

[Answered by Bigler-Paul-Furlong, San Francisco.]

[Our first advice is that before any action is taken a lawyer should be employed.

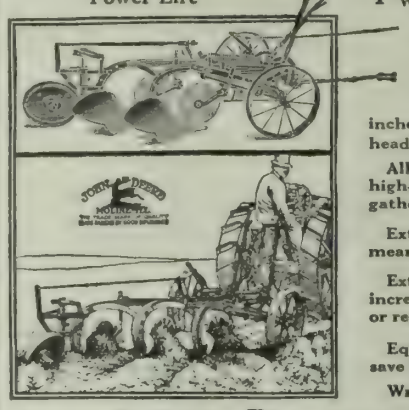
However, the law of California is explicit as to fencing. Assuming the owner of a parcel of land desires to fence its exterior boundaries, in order to protect his property from without, he is entitled to serve notice upon abutting owners calling upon them to pay one-half of the cost of such fencing. In case they refuse to join him he then has the right, after a definite lapse of time, to erect such a fence, one-half of the cost of which, upon proper legal procedure, becomes a lien upon the abutting land.

After such a fence has been properly erected, of proper materials, in a workmanlike manner, then any damage to said fence, or to growing crops, trees or improvements within the fence, caused by stock or other controllable causes from without, can be collected through legal channels from the owner of such stock, or from the person causing the damage.]

John Deere Implements

John Deere Plows for Light Tractors

With High and Level Power Lift



PRACTICAL plows for the average farm. Work with any standard tractor.

Controlled by the man on the tractor. Pull the rope and all the bottoms raise high and level. Another pull lets them down.

Plows raised or lowered in fourteen inches ground travel. This makes square headlands.

All bottoms raise high—like a double-bail, high-lift horse plow. Plows do not clog or gather trash on the turn.

Extra wide and semi-floating front truck means uniform work and even depth of plowing.

Extra beam and bottom, readily attached, increases regular two-bottom plow to three or regular three-bottom to four, as desired.

Equipped with Quick Detachable Shares—save 80 per cent time changing shares.

Write for free booklet.

John Deere Spreader

The Spreader With The Beater On The Axle

BEATER drive works on the principle of a horse power. No clutches, no chains, no trouble. Mounting the beater on the axle (a patented feature) does away with half the types of castings.

Only hip-high to the top—but has big drive wheels. Wheels out of way when loading.

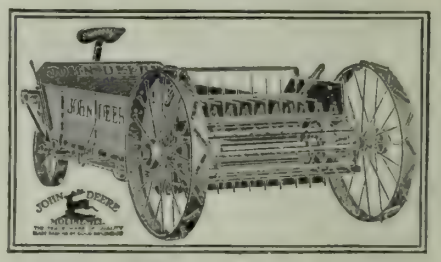
Here are three exclusive John Deere Spreader features—read them over and then be sure to see them on the spreader itself:

1. Beater on the axle—nothing else like it.

2. Revolving Rake—load moving back to beater revolves the rake. Draft actually less. Even spread certain—no bunching.

3. Ball Bearing Eccentric Apron Drive—requires no attention.

If you want to distribute manure seven feet wide, use the John Deere Wide Spread Attachment. Write for free booklet.



A Farm Book For The Asking

BETTER FARM IMPLEMENTS AND HOW TO USE THEM

A Big One—168 Pages

Tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars. This book sent free to every one who states what special implements he is interested in and asks for package No. X-152.

Write for your copy today.

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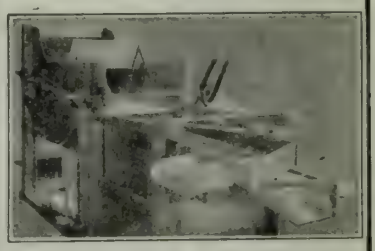
VACATION LAND

What section of California holds forth such inducement to the vacationist as that traversed by the Northwestern Pacific R.R. Anglers will find the finest fishing; sportsmen an abundance of furred or feathered game; swimmers and bathers have a wide choice of ocean, river and bay; lovers of wild, primitive spots will find miles of great redwood and other forests; rugged mountains and elevations will appeal to trampers; cozy camping locations will entice the family; this wondrous collection of nature begins at Sausalito and extends to the world-old forests of Humboldt county.

A very interesting description of this territory is found in the booklet — Vacation — 1916, free copies of which may be obtained at 874 Market Street, San Francisco, or on application to J. J. Geary, G. P. A., 808 Phelan Bldg., San Francisco.

Northwestern Pacific R. R.

"THE PERFECTION"



Prune Dipper and Grader

This is an automatic machine; no guess work about it; gives three grades, three trays up at once; dipping fluid is heated by a large oil-burner and a superheater, to supply hot water to the tank when needed. The prunes pass through every inch of 65 gallons of hot water, therefore no sediment. Fuel expense from 6c to 7c per ton; labor cut 50 per cent; no installing expense; most efficient and economical machine on the market.

Write for prices and further particulars to

F. J. Yandle,

Santa Rosa, Calif.

Cement mill men in southern California had to keep their dust off the orange orchards. In catching it they found potash; and one mill sold $100,000 worth last year at $80,000 profit. U. S. had been buying $20,000,000 worth of potash per year from Germany.

DRIED AND CANNED VEGETABLES AND FRUITS INCREASED.

Canned vegetable production increased 58.4 per cent from 1909 to 1914 in U. S., and canned fruits increased 96.5 per cent. Canned soups made from vegetables are becoming popular in modern living, as indicated by a 204.3 per cent increase. Figures are taken from the preliminary statement of a manufactures' census issued by S. L. Rogers of the U. S. Dept. Agr.

Packs of Vegetables and Fruits, 1909-1914.

	1914.	1909	Per cent Increase.
No. of establishments	3,199	2,862	11.8
Vegetables, canned	$ 84,413,667	$53,307,791	58.4
Fruits, canned	24,897,174	12,672,900	96.5
Fruits, dried	34,771,912	22,287,522	56.0
Soups, canned	7,877,057	2,588,834	204.3
All other products*	6,056,083	6,086,226	†—5.0
Total value	$158,015,893	$96,943,273	63.0

* Including preserves, pickles, sauces, cider, and vinegar produced in canning establishments.
† Decrease.

Squirrels and Almonds.

To the Editor: I have a few acres of almonds with a good crop on but the squirrels are eating them rapidly. What is the best method to get rid of the squirrels? — Subscriber, Modesto.

The best way to kill squirrels in the dry season is to use poisoned grain. We have published the best poisoning way dozens of times and have put it in all our books, but we never are able to catch up with the new subscribers.

Poisoned barley is preferred, since it is more attractive to the squirrels and less likely to be eaten by birds: Clean barley, 20 quarts; Strychnia sulphate (ground or powdered), 1 ounce; saccharine, 1 teaspoonful; gloss starch (ordinary laundry starch), ½ teacupful; water, 1½ pints.

Dissolve the starch in a little cold water and add 1½ pints of boiling water, making a rather thick solution. While hot, stir in the strychnine and mix until free from lumps; then add the saccharine and beat thoroughly. Pour in the poisoned starch over the barley and stir rapidly until the poison is evenly distributed; then allow the grain to dry. When dry it will keep indefinitely without deterioration. A coating of poison is formed on the outside of the grain. Squirrels are readily killed by carrying such coated grain in their cheek pouches while storing food for future use.

The poisoned grain should be scattered (not placed in heaps) on clean hard places about the colonies, the trails between the holes, along fences and roadsides and other places frequented by the squirrels. This poisoned grain, if scattered about, is not dangerous to stock, but is fatal to poultry.

LIPPIA VS. MORNING GLORY.

To the Editor: You published an article stating that lippia grass kills morning glory. I have ½ acre of morning glory. If I plant lippia to [illegible] I get rid of the lippia? [illegible] ights.

(Answered by John F. Swett, Martinez.)

[If the ground is planted with Lippia roots and these are kept cultivated and watered until they are well rooted, they will begin to choke out the morning glory and at the end of two or three seasons, you will have a handsome Lippia lawn entirely free from morning glory.

If the beauty of a handsome lawn does not prevent, you can then hoe off the Lippia turf, spade up the ground and have it absolutely free from either of its former tenants. The expense of buying Lippia roots, the care necessary while rooting them and the necessity of waiting a couple of seasons while the choking out process is taking place, make other methods for eradicating large fields of morning glory simpler and more economical.]

Spot and future prunes are reported on a 5 to 5⅛ cent basis by the Growers' Information Bureau. Business is quiet. European export orders for Oct. delivery have been confirmed last week by San Jose packers.

TEN MILLION FEET OF Clean, Seasoned Lumber

At Less than Wholesale Prices.

Moving ¼ of a Million Feet a Day Place Your Orders Immediately.

THE 8 MAIN PALACES—THE COURTS AND THE TOWERS—of the P. P. I. E. are being dismantled, and we are disposing of the lumber. It is coming out, not only clean and in good shape, but thoroughly seasoned. All Oregon pine.

Don't delay sending us your lumber bill, for prices will be so low you cannot afford to overlook the savings, and the lumber is moving very rapidly.

SIZES: 2x3 to 2x16; 3x12 to 3x16; 4x8 to 4x18; 6x6 to 6x14; 8x8 to 8x20; 10x10 to 10x20; 12x12 to 12x18; 14x14 to 14x20. Lengths up to 32 ft.

SHIPLAP

Subject to previous sale, in carload lots, we offer the following f. o. b. Expo. Grounds, San Francisco.

2x6, 2x8 and 8x10 Oregon Pine Shiplap—suitable for warehouse floors, sub-floors, flumes, etc.—**$9.50 per M. ft.**

As the above is laid it matches neat and snug.

We have 1000 FLAG POLES—25 ft. to 100 ft. long. While they last we are giving

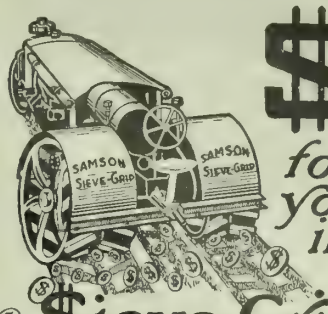
One 25-Foot Flag Pole Free

with each carload of Shiplap, as a Souvenir of the World's Greatest Exposition.

For Further Prices, Write To

Pacific Mill and Timber Co.

1000 First National Bank Bldg., San Francisco.



$ for you in $ Sieve-Grip Wheels

They give better cultivation which preserves moisture, improves crops and makes YOU money.

SAMSON SIEVE-GRIP

Reg. U S Pat. Off and Foreign Countries

tractors alone use Sieve-Grip Wheels.

Let us tell you of other exclusive Samson Sieve-Grip features—the No-dust-Moisto-Rizer, Lubricated Roller Pinion, etc.

Samson Sieve-Grip 10-25 at $1250 and 6-12 at $725, both f.o.b. Stockton.

SAMSON IRON WORKS, Inc.
Stockton, California.

Drop a postal for folder **"P.R.-12"**

LADDERS

Champion Iron Head Fruit Ladders combine all the necessary and desirable features of strength, durability, lightness and easy handling. 6 ft. to 20 ft. lengths. 15 years in the business. For full particulars write to

H. H. EDMUNDS & SON,
3 Story Road, San Jose, Cal.

FAMOUS LUITWIELER PUMP



Correct in every detail. No trouble. Cheaper water. Perfect satisfaction. 2 Irrigation Booklets free. **Luitwieler Pump Eng. Co., 713 N. Main St., Los Angeles.**

Success in Farming

Success is the prosperous termination of any enterprise—prosperity.

Success is not just getting along halfway—it's beating the game, and winning—it's prosperity.

Success in farming requires the use of every means to raise bigger crops at less expense—to get the work done at the right time, at the lowest cost.

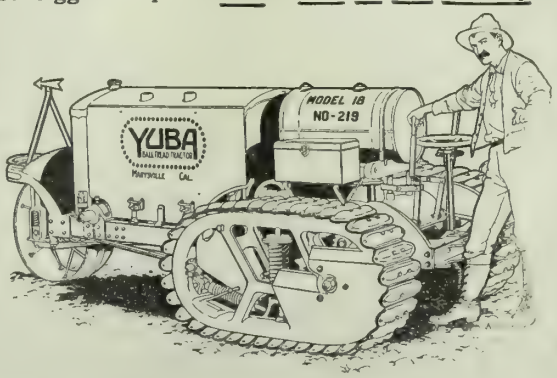
Success means getting the soil in good humor, so it will produce big crops and will not be exhausted.

Success in farming means getting big tasks done with least effort and least expense.

Success in farming means the use of modern machinery—the saving of human effort by utilizing mechanical power—the saving of money by introducing one machine to do the work of ten men and forty horses.

Success in farming is holding the young men in the country instead of attracting them to the overcrowded city.

Success in farming is made possible by the tractor to plow and harrow and cultivate and haul the thresher and the grain, in the orchard and the rice field.



You can use a tractor to your advantage on your farm.

Let us prove to you why you should have a money-making tractor.

THE YUBA BALL TREAD TRACTOR

The Yuba Construction Company

433 California Street
San Francisco, Calif.

THE YUBA CONSTRUCTION CO.
Department A11
433 California Street, San Francisco, California

Gentlemen: Kindly send me a copy of your booklet, "The Yuba Ball Tread Tractor."

Name	CHECK MAIN CROP RAISED
P. O. Box	Fruit..... Rice.....
Town	Grapes ..... Alfalfa.....
State	Grain ..... Hay.....
Size of Farm..... acres	Hops..... .....

Mechanical Power on the Farm.

[Written for Pacific Rural Press.]

ORCHARD TRACTOR VS. WIND.

"Our tractor beats the North Wind to it," says C. L. Moseley of Butte county. He referred to the delayed plowing which enabled the cover crop in his young almond orchard to make maximum growth. When danger of north winds drying the ground approached, the Yuba 12 was run over the 40 acres quickly with a double disk. This enabled the plow which followed at once, to turn under the heavy growth including milo stalks to a depth of 9 to 10 inches. "Then let the north wind come," which it did. The ground however, was well cultivated clear to the bottom of the plowing, and the loss of moisture was not great enough to injure the trees.

Orange Tractor.—"I am working 100 acres of orange orchard this year with a 14-disk cultivator and a Samson 6-12 tractor bought last February," says R. W. Job of Plano. He carries five sacks of adobe soil on the disk; and the finely cultivated soil is much better than if left in clods for lack of time to work it down at the proper condition.

The picture shows an International Harvester tractor doing better work at one trip than Mr. Job does, because a double disk is being used.



Better Work with Less Traveling.

HOME-MADE TRACTOR.

To the Editor: In reply to your request for information concerning our tractor: The wheels and engine are second-hand; but the gears, clutch boxes (or bearings) and shafting are new. The engine is a 25 h. p. Overland, but being an auto engine we designed it to develop 12 h.p. on the belt and six at draw bar. This it will do continuously with plenty of reserve power. It weighs 3300 pounds and has a speed of two to four miles per hour. It cost a little less than $250 and does all the heavy stationary work, such as grinding grain and cutting hay, etc.; as well as tractor work. The wheels are from a harvester and another tractor, and the gears and bearings can be obtained from any company handling transmission machinery. The tractor pulls a 14-inch plow in dry hard adobe. **M. Van Hook.**

Dos Palos.

HYDRAULIC WELL DIGGING.

Considerable interest has been created in Madera county by the bringing in of a fine well by the Lewis Company of San Jose, which concern owns and operates the Island Ranch, four miles east of Madera.

Efforts have been made from time to time in the past to secure water in this section of the country, but it was not until the Bean Spray Pump Co., of San Jose, was induced to enter the field with one of their hydraulic deep well boring machines that the district was given a thorough test with satisfactory results.

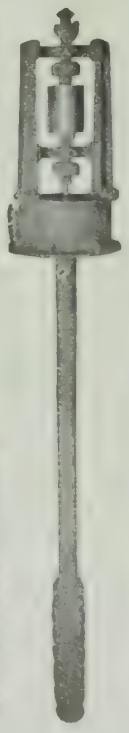
A test hole was first put down. This is a plan used by the Bean concern, which enables them to determine the possibilities of a permanent well and the approximate cost of the complete installation, before much money has been invested. The test hole is 477 feet deep, but the well is finished off at 317 feet, there being but little water-bearing gravel below this.

The well was put down by the Bean hydraulic system, which not only does the work quickly, but enables the well to be put down before the casing is put in. A heavy clay mixture is pumped into the hole

No Pit

is required with the

Krogh Deep Well Turbine Pumps

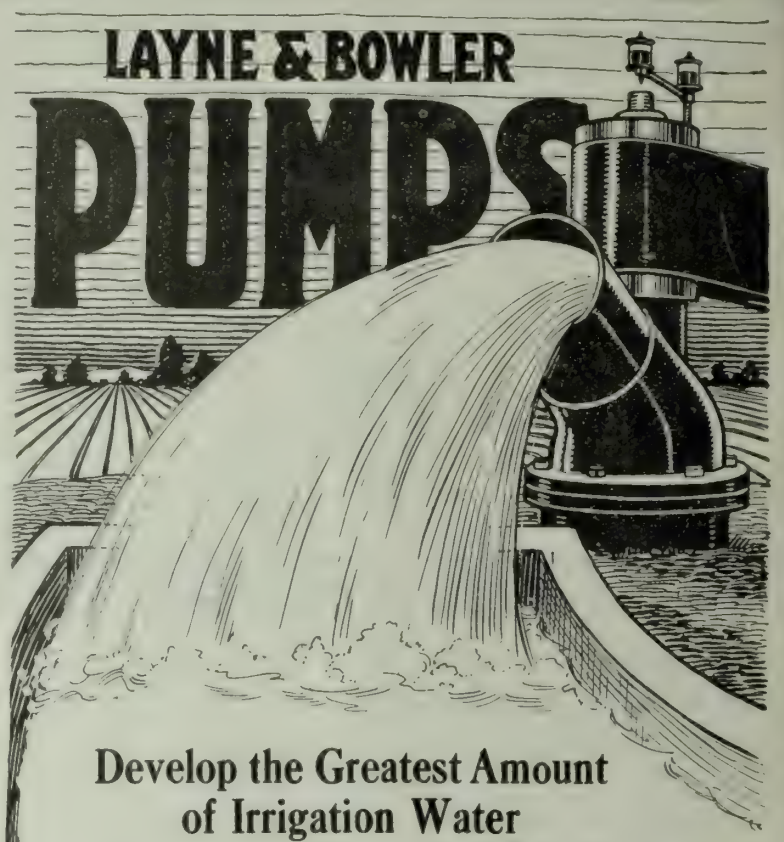


For bored or drilled wells from 10 inch inside diameter up; and for capacities of 250 to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.

Krogh Manufacturing Company

San Francisco -- Los Angeles

LAYNE & BOWLER PUMPS



Develop the Greatest Amount of Irrigation Water

In the development of water throughout the United States, the Layne & Bowler Corporation is now acknowledged to be the leader in intelligent development of underground water, as well as in the manufacture of pumps, and our engineers are in constant demand throughout the length and breadth of the land to assist in solving knotty irrigation problems and to correct the mistakes of people who have gone into the irrigation game without due preparation and knowledge of what was necessary. Let the World's largest water developers solve your pumping problems. We may save you hundreds of dollars.

Our new Catalog No. 25 will be off the press this week. Write at once for an advance copy.

Layne & Bowler Corporation

900 Santa Fe Ave., Los Angeles.



The BIG BULL Tractor

You see them everywhere

Do You Know?

That there are nearly 10,000 Bull Tractors in the field?—That whatever make of tractor you buy will beat horse work in speed and economy?—

That the **BIG BULL**, selling for **$645**, F. O. B. Minneapolis, plows more land per day than any tractor selling for less than $1200?—

That you can replace all the traction gears for $42.30?—

That it will run a 7-in. centrifugal pump, or a 24-in. separator fully equipped?—

That it is fine for grading roads and hauling.—

That it has the fewest parts and is the most accessible tractor made?—

That it is self-steering in plowing?— (You will appreciate this feature after steering a tractor all day.)

That a monthly bulletin of tractor information will be sent you free?— (Write Dept. A8.)

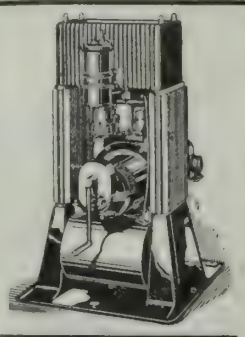
That the action of the lugs on the Bull Wheel subsoils the bottom of the furrow 4 inches deeper than the plow penetrates?—

That this increases crops on land plowed by the Big Bull?—

WELL, IT'S TRUE

HUGHSON & MERTON, Inc.,

530 Golden Gate Ave., San Francisco. 329 Ankeny St., Portland. 823 Railroad Ave., Spokane. 1229 S. Olive St., Los Angeles. 806 E. Pike St., Seattle.



Uni-Lectric GASOLINE-ELECTRIC UNIT LIGHTING SYSTEM

Electricity for Farm Homes

NO BATTERY

Size of complete unit 24 in. by 25 in. and 42 in. high.

CHEAP FUEL

Will operate 50 lights 7½ hours on 1 gal. mixture of 80 per cent coal oil and 20 per cent gasoline; cost 11c. No cost to install; operation cheapest on the market.

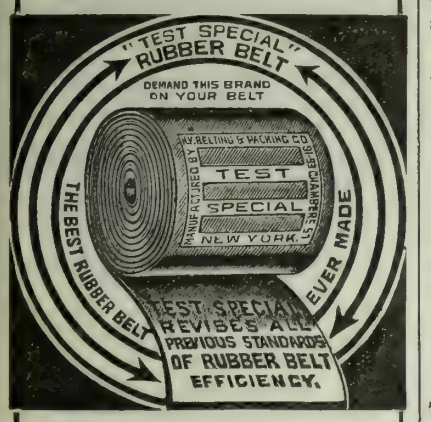
Karl A. Hedberg Co., Inc.

Electrical Engineers.

104 Clay St., San Francisco, Cal.

Advice in matters of electrical and mechanical transmission. A first-class electrical repair shop maintained. New and used motors and generators on hand.

Belting That Must Make Good



When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a **free sample** of **Test Special** together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

NEW YORK BELTING & PACKING CO.
519 Mission St., San Francisco
Established 1846

FILL OUT THIS COUPON—MAIL IT TODAY

New York Belting & Packing Co.,
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Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

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H.P. { Gasoline Engine _____ / Steam Engine _____ / Electric Motor _____

Diameter in Inches { Driving Pulley _____ / Driven Pulley _____

Kind of Drive { Cross _____ / Straight _____ / Perpendicular _____

Width of Belt _____ Ply _____

Distance Between Centers of Pulleys { _____ / _____

Revolutions per Min. of Driving Pulley { _____ / _____

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A pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.

WITTE



You can't buy any *good* engine at a lower price. You can't buy a *better* engine at double the price. Sold direct factory to user. Established 1870.

WITTE ENGINE WORKS,
2861 Oakland Av. KansasCity, Mo.
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2 H-P. $29.95
3 H-P. $47.85
4 H-P. $64.75
6 H-P. $89.90
8 H-P. $129.80
Write for prices on sizes 12, 16 and 22 H-P.

while the work is being done and this holds back the water and prevents the walls from collapsing.

After the well has been sunk by this method, special screens are constructed for the various sand and gravel strata encountered. This is preferred to the plan of inserting stove-pipe casing and perforating afterward.

Before the casing was put in, charges of dynamite were exploded at different depths which broke up the formation and permitted the water to flow in for a radius of several hundred feet. The Bean hydraulic developer was then inserted and the fullest possible flow secured.

When completed, the well was tested and developed a fine flow of 1395 gallons per minute, lowering the water level only 29 feet and making a total lift of but 41 feet.

The pump is a Bean Turbine, 15-inch size, and requires no pit. All oiling and adjusting is done from the top. The well is one of the finest in the county and Mr. Lewis states that he would not take $25,000 for it.

TRACTOR AIDS HORSE BREEDING

[G. F. Sampson in Orange Judd Farmer]

I have raised more colts during the three years in which I have had a tractor than in the previous 10 years. The machine does all the heavy work and thus saves overworking brood mares as their foaling season approaches. The machine also enables me to let the mares run to pasture at breeding time.

Formerly I had worked my mares to the very limit every day, because my work simply had to be done. The consequence was that the mares were not bred. Now that horses are so scarce and high, especially good horses, it will pay everyone who is doing much farm business to operate a tractor, if only to enable his mares to raise more colts, horses, or mules.

Instead of the tractor hurting the horse market, my experience is that the machine will benefit the trade. Besides the destruction of horses and mules by the war, the demand for good horses and good mules is going to insure a good market at fair prices for all good stock of that kind for many years to come. At the same time, farm work also is so increasing in variety and amount, that the tractor has become indispensable. I can plow with it more deeply, cultivate more thoroughly and raise better crops at less cost than with horseflesh or mules. Both forms of traction have their uses, and there is room enough for both.

I remember that when the electric light became a commercial success, shareholders in gas companies feared for their investments. Experience showed that more and better light created an increased demand. Today gas companies are more profitable than ever, while the electric concerns are doing well also. The same principle applies to this tractor, horse, and mule business—the more power that becomes available, whether mechanical or animal, the more use there is for it.

The California Hydraulic Engineering and Supply Co., San Francisco, have closed a contract with the McGillvary-Raymond Granite Co. for 12 American centrifugal pumps. This latter firm is subdividing 480 acres of land near Livingston into 40-acre tracts; and is to install one of these pumps on each tract, to be run by a motor.

Endurance



"How long a run for my money?" That is the vital question.

10,000 mile Savages are common. 20,000 mile Savages are not unusual. All Savage Tires give maximum service.

Ask any Savage user for his opinion of Savage endurance and Savage mileage.

Be sure to get our interesting Tire Book, No. 1438.

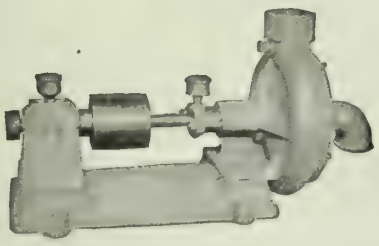
SAVAGE TIRES

BRANCH STORES:

SAN FRANCISCO 1125-27-29 Van Ness Ave. | LOS ANGELES 700 W. 7th St. | SAN DIEGO 936 2nd St.

THE WINSBY PUMP

Our New 1916 Type Pump



Best Model for Low Lift Pumping

Size.....	1 in.	1¼ in.	1½ in.	2 in.	
Price	$16.00	$20.00	$25.00	$30.00	F. O. B. CARS OAKLAND

WRITE FOR FOLDER 55.

Larger Sizes at Proportionate Prices.

Complete Pumping Plants of Any Size or Type Furnished and Installed.

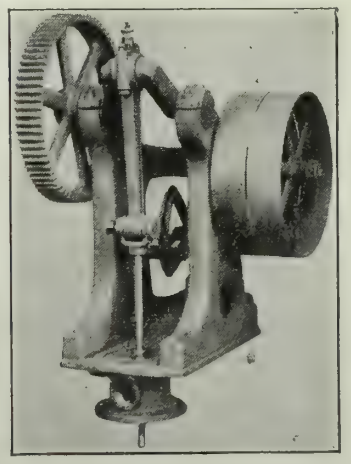
WE MANUFACTURE—Pumping machinery of all kinds and for all purposes. Mining, Milling, Concentrating and Rock Crushing Machinery, Ice and Refrigerating Machinery, Cold Storage Rooms and Counters. Water Wheels, Dredges and Hydraulic Machinery. Fire Hydrants and Cast Iron Fittings.

Write for descriptive folders and prices.

MANUFACTURERS UNITED IRON WORKS ENGINEERS

GENERAL OFFICES AND WORKS: OAKLAND, CALIFORNIA.

We are the largest manufacturers of pumping machinery on the Pacific Coast.



WILSON

Stroke, 12 inches.

Single Acting Pump

This pump is constructed along the same lines as our **Uniflow Duplex** pumps. Cast Steel Crankshaft. Malleable Links and Connecting Rod, Single Piece Frame, Straight lift, device which avoids slides, guides, beams, etc. Will do all work up and including 3 horse power and this without breakage or unreasonable wear. So simple any one can install.

PRICE, $75.00

WILSON & WILLARD MFG. COMPANY

15th and Santa Fe Ave.
Los Angeles, Cal.

SURFACE IRRIGATION EXPOSITION DRAIN PIPE.

We have puchased all the Drain Pipe in the Palaces and Courts at the Exposition. This is made of light galvanized iron in 10-foot lengths, and will slip together—can be used for surface irrigation.

PACIFIC PIPE COMPANY,
Main & Howard Sts., San Francisco, Cal.

General Agricultural Review.

GRAIN AND FIELD CROPS.

Merced grain harvest is well along.

Some of the Oakdale barley is going 15 bushels per acre.

Oats look especially good in certain parts of Salinas Valley.

Alfalfa hay is being sought around Hollister at $12 per ton f. o. b.

A ton of Eldorado county hay sold June 7 for $25. The usual price is $20.

The fine grain crop of the Tracy district was partly threshed by the wind.

The onion crop of the Sacramento river is estimated at half of normal acreage.

Rice on the 900 acres around Pixley last year is said to have yielded 43 sacks average.

The Healdsburg Canning Co. will can this summer nearly 200 acres of tomatoes.

A million grain bags were destroyed when Pier 46 in San Francisco was burned.

The largest oat hay crop in years is estimated for Stanislaus county by H. G. Turner.

Cool May weather helped the Mendocino grain and grain hay crop more than expected.

Fire destroyed 200 acres of barley and 200 of wild oats near Crows Landing. Was it insured?

The Eureka Girls' High School Club is raising beans which they are to can as part of the contest.

Uninsured grain on 680 acres was burned near Los Banos before the 150 fire fighters could stop the blaze.

About 365 acres are contracted for beets around Bishop, Inyo county, as an experiment to determine suitability.

Lima bean carryover June 1 is estimated at 250,000 bags; blackeyes at 60,000. Over 2-3 of these are in Ventura county.

Santa Barbara grain has been largely cut for hay so that the grain will be only about 15,000 sacks instead of 50,000 as last year.

Asparagus canning in the Delta is expected to continue until July, the cold May having delayed growth. The pack to date, however, is greater than to date a year ago.

An American rice polishing machine was recently installed in Hong Kong and the first shipment of polished rice ever made from China to U. S. was soon on the way.

Shipments of beans from Ventura and Santa Barbara counties were 760,000 bags between Sept. 1, 1914, and Mar. 1, 1915; there were 820,000 bags during the same period last season.

Better inspection of cantaloupes in Imperial Valley and better organization of the market distribution is bringing better demand for the greater crop at better prices than in previous seasons.

The U. S. June 1 wheat forecast for Cal. is 4,380,000 bushels. Last year the production was 7,040,000 bushels. Similar figures for barley are 29,100,000 bushels and 39,440,000. Oats 5,700,000 and 6,963,000.

CITRUS AND OLIVES.

Riverside has shipped nearly 300 cars of lemons.

The navel season is reported as one of the most satisfactory in many years for Upland growers.

Lindsay-Porterville orange growers think the fruit could drop pretty heavily and still leave a good crop.

A three-acre Valencia orchard four years old, with no buildings, recently sold near Orange at $2200 per acre.

The California Olive Growers' Ass'n has been dragging out a feeble existence. Col. Weinstock comes to the rescue with the raisin plan of organization to include 7000 acres of olives and $100,000 capital in $5 shares; 50,000 shares are to be preferred. Jan. 1, 1917, is the date of final organization or dissolution.

DECIDUOUS FRUITS.

Porterville has been shipping fresh apricots to the East.

Early Crawfords are sought at Atwater for $20 per ton.

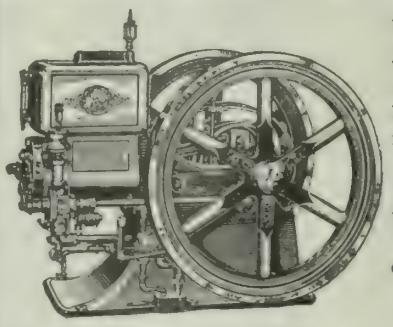
The Libby cannery at Selma opened on Royal apricots June 8.

Dried apricot pack this year is estimated at less than half that of last year.

No revision of the Growers' Information Bureau apricot crop estimate.

Arsenate of lead is suggested when the 12 spotted green "lady birds" get busy.

Tulare and Kings counties report full prune crops. They have 6 per



Do You Know---

that the R. & V. Engine is the best on the market—also the most reasonable in price?

Sizes from 1 to 48 h. p.

Wm Gregory & Sons

602 N. Main St., Los Angeles, Cal.

Irrigation Supplies.

Let Your Land Pay for Itself in Crops.

Alfalfa, Bean, Corn and Vegetable Land.

On the Electric Railroad, near Sacramento, the finest river sediment soil. An ideal place to live. 10% to 15% down, no further payment on principal for 3 years. 13 years to pay.

D. W. HOBSON CO. 819 J Street, Sacramento.

HAROLD O. CRANE CO. Alaska Commercial Bldg., San Francisco, Cal.

RHUBARB - CACTUS - HOGS

Wagner's Giant Rhubarb Plants less than half price.

If planted this May or June should yield 15 tons the first year.

Spineless Cactus, the best known dairy and hog feed. **$10 per 1000 slabs.**

Mulefoot hogs, choice pedigree breeding stock, both sexes, 140 head ready for delivery.

Bankable notes or mortgages accepted as payment.

J. B. WAGNER,

Pasadena, Calif.

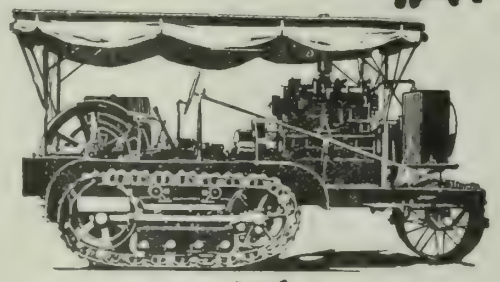
Wanted Myrobolan or Cherry Plums for seed. Good price offered for any quantity. Write P. O. Box No. 94, Loomis, California.

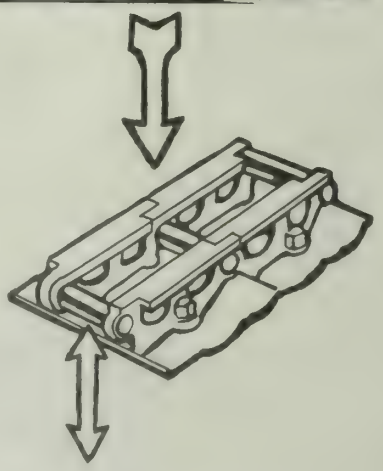
Why 2/3 of all tractors on the Pacific Coast are Caterpillars

CATERPILLAR

Reg. U.S. Pat Off.

Don't say Caterpillar unless you mean Holt!





Practically all the wear that can occur in the track is confined to this point—the pins and sleeves with which the tracksprocket engages. These are of case-hardened steel, and on many Caterpillars have lasted for years. They can, however, be replaced at a very slight cost.

The Caterpillar track combines greatest wearing qualities with least frictional loss in turning brake- into drawbar-horsepower.

It is this ideal combination of long time wear and power saving — characteristic not only of the track but of the whole construction of the Caterpillar — that largely accounts for the fact that two out of every three tractors on the Coast are Caterpillars.

From among the 3000 Caterpillar owners we receive many such reports as this:

"Our engine has made an average of 7½ to 8½ months' work for three years—the track which came with the engine is in good shape."

"Have used my Caterpillar 5 years. The original track chains are still in use."

Why not write for Bulletin C- 338, explaining the details in Caterpillar construction?

The Holt Mfg. Co., Inc.

STOCKTON, CAL. LOS ANGELES, CAL.
SAN FRANCISCO, CAL.
SPOKANE, WASH. PORTLAND, ORE.

GRAND PRIZE — San Francisco and San Diego Expositions

cent of the State acreage.

A large proportion of apricot pits have been sold. Present prices $47.50 to $50 per ton.

A car of Santa Clara cherries, sold in Chicago June 7 for $4904 and another on June 8 for $4827.

On June 8, $763,280 and 39,704 acres of peaches had been signed up with the Cal. Peach Growers.

Apples in cold storage June 1 were estimated at 251,927 barrels as compared with 108,212 barrels June 1, 1915.

The prune crop prospects have brightened to 75 per cent, as there is improvement in all principal districts.

"This is the worst apple season we have ever experienced," write Rivers Bros. of Los Angeles.

San Francisco buyers have been paying 6 cents for Sebastopol Tartarian cherries and 6½ cents for Royal Annes.

A meeting of prune growers June 24 is suggested to discuss crop and market conditions and name a safe price to hold the 1916 crop.

Arsenate of lead spray for pear slugs is recommended for Mendocino county by Horticultural Commissioner Claude Van Dyke.

The Stanislaus County Canning and Shipping Co. sold 1,000 tons of canning peaches to the Central Cal. Canneries at $25 for Phillips and $27.50 for Tuscans.

It is announced that packers were offering 6 cents for dried peaches early in June as compared to 2¾ cents a year ago. So much for organization, even before it gets to work.

The California Peach Growers is planning to handle the dried apricot crop of the State. A conflict with the Prune and Apricot Growers' Ass'n will likely be averted by a mutual understandng.

GRAPES AND SMALL FRUITS.

Grape leaf hoppers are scarce in Fresno county this year.

Yuba county grapes in some vineyards are afflicted with a black spot. In many instances, half of the berry is wasted away.

The fruit juice plant of the Sebastopol Berry Growers began operations June 6 with one press. Another press was installed June 9 and both will be operated 20 hours per day.

A spineless Mammoth blackberry of fine flavor, rather tart, almost free from seeds, large as ordinary Mammoth, prolific, early, and with good vine growth, has been propagated by W. C. Cory of Jamestown, Tuolumne county.

MISCELLANEOUS.

Yolo County Fair August 23-26.

Ventura bean farmers are greeting depredating squirrels with steel traps.

A potash factory on Searles Lake is to begin operations before the end of the year.

The forest rangers in Humboldt county are helping isolated farmers sell their products.

The Salt Lake Railway has begun spending 1 1-3 million dollars for improvements on account of increasing traffic.

MR. BROWN'S IDEA OF GUM-ROT.

To the Editor: After considerable study I have come to the conclusion that the cause of gum rot and gummosis, especially on old trees and in old groves, is caused by lack of moisture during the summer season.

Year after year, especially in years of light rainfall, the subsoil around trees dries out, and once being dry and not having a sufficient amount of rainfall the next winter to wet the subsoil, the coming dry weather finally kills the fibre roots and causes gum to ooze from the bark of the tree.

The orange tree is more subject to gummosis than the lemon tree and is mostly found in old groves. Upon grubbing out one of these trees affected with gummosis you will find that the fibre roots are all gone, nothing but a few straight roots remaining which are also affected in the same manner as the body of the tree.

While the tree is in that condition the gopher comes along and his gnawing at the roots harms the tree that much more. I have, on first noticing the gum rot on orange trees, run water around, wetting the subsoil thoroughly. By this method the rot will dry up and disappear inside two or three months and if this precaution is taken in the early stages it will entirely cure the disease.

As a proof of this you will notice that the gum rot, on trees affected, completely dries up in the winter, after the ground gets well soaked up with water, but as soon as the dry summer season sets in the gum rot reappears. I have watched this year after year. **G. T. Brown.**

Pomona.

[Although our notion of the matter does not entirely coincide with Mr. Brown's conclusions, growers will do well to measure them by their own observations.—Eds.]

California Garden Flowers $1.50 Postpaid Pacific Rural Press



Other Unrivaled Records

All made under A. A. A. supervision, by a certified stock car or stock chassis, and excelling all former stock cars in these feats.

100 miles in 80 min., 21.4 sec., averaging 74.67 miles per hour for a 7-passenger touring car with driver and passenger.

75.69 miles in one hour with driver and passenger in a 7-passenger touring car.

Standing start to 50 miles an hour in 16.2 sec.

One mile at the rate of 102.53 miles per hour.

1819 miles in 24 hours at average speed of 75.8 miles per hour.

Over 3800 miles at speed exceeding 75 miles per hour without evident wear on any engine part.

Hudson Super-Six Sets New 24-Hour Endurance Mark

Fastest Time for Such Distance ever made by a Traveling Machine

No man today—if he knows the facts—doubts the Super-Six supremacy.

At first the truth seemed like a romance. Think of one new invention, applied to a light six, adding 80 per cent. to its power.

Then official records began to pile up, certified by the A. A. A. The whole motoring world then had to concede this the greatest motor built.

But many men asked, "What about the endurance? Can a motor so flexible, so speedy, so powerful, stand up in years of road use?"

So we asked Ralph Mulford to take a stock Super-Six chassis and, under official supervision, show the world its endurance.

All Records Broken

He took a Super-Six stock chassis—certified by A. A. A. officials.

It had already been driven over 2000 miles at speed exceeding 80 miles per hour.

It had made a mile at Daytona at the rate of 102.53 miles per hour.

And he drove that car 1819 miles, on Sheepshead Bay track, equal to the distance from New York to Denver—in 24 hours of continuous driving—at an average speed of 75.8 miles per hour. At the end of that test—after nearly 4,000 miles of record-breaking strain—the car, when officially examined, showed no appreciable wear.

How Much Endurance Has It?

It will be many years from now before we can tell you how long a Hudson Super-Six will last. But the records we cite cover the greatest strains a motor car ever met. Many a great engine has gone to pieces under far lesser strain. Years of ordinary driving would never tax a motor like those thousands of miles of speed tests.

Yet the wear on the Hudson Super-Six was almost nothing. Certain it is that no man has ever built a traveling machine to compare with this car in endurance.

Greatest Endurance Proved

That was the last question—this one of endurance. In all other ways it has long been evident that the Super-Six stands supreme. Never has a motor of this size shown anywhere near such power. Never was an engine made to match this in smoothness. Never has a stock car recorded equal performance—in hill-climbing, quick acceleration or speed.

Handsomer cars have never been shown. Finer engineering is simply unthinkable, with Howard E. Coffin at the head of this department.

You are getting the car of the day when you get the Super-Six. Every man who knows the facts knows that. And, in view of our patents, rivalry is impossible.

No Need to Wait

It is natural to say, "Let us wait and see," when we meet such radical advancements. We think that nothing can excel in so many ways without falling behind in one.

But not one fact about the Super-Six is left unproved today. Not in one respect has its performance been matched. Not in any way has a rival motor been made to compare with this.

There is no need to wait to get Time's verdict on the Super-Six. The records prove the Super-Six supreme. A half-hour's ride without those records would convince any man of the fact.

Thousands of these cars are now running. You will find them in every locality. And every owner will tell you that he never meets a car to compare with his, in looks or performance.

These are things to consider when you buy a car.

Phaeton, 7-passenger, $1475 Roadster, 2-passenger, $1475 Cabriolet, 3-passenger, $1775
Touring Sedan $2000 Limousine $2750
(Prices f. o. b. Detroit)

HUDSON MOTOR CAR COMPANY, DETROIT, MICH.

Breeding 300 Pound Grade Cows.

[Written for Pacific Rural Press.]

The April reports of the Napa-Sonoma Cow Testing Association showed 21 cows that had given 40 pounds of fat or better during the month. Seven of these belonged to W. L. Mitchell of Napa county and were then in the seventh month of their lactation period.

Mr. Mitchell attributes this record as well as the fact that his mature cows average 300 pounds or better of fat, yearly, to the continual use of purebred Jersey bulls for the past nine years.

When he started dairying on his present 200-acre ranch Mr. Mitchell used a grade bull for one year. Then he recognized his mistake and always since then has paid a good price for registered bulls, bringing them from the East at times, and in other instances purchasing them in California and Oregon.

He used equal care in selecting as foundation females, heifers from the best grade Jersey herds in Sonoma county at that time. He never buys a cow now, preferring to raise them himself, and in this way guard against contagious diseases.

The average production of the milking herd at that time was about 175 pounds of fat yearly. For a number of years he weighed the milk from each cow once a month and tested it three or four times during the ten-month lactation period of the cows. In this manner he was able to weed out the poor producers and gradually increase the production to its present high average. He is a strong advocate of the cow testing association, having been elected president of the one in Napa and Sonoma counties at its inception, and has all of his cows entered. He believes a cow should be dried up two months in the year, usually breeding them to freshen August 15 to September 15.

A Natural Dairy Ranch.—The ranch is well situated for dairying purposes, comprising 110 acres of hill land and 90 acres of bottom land. Of the latter, 40 acres are planted to alfalfa, yielding three cuttings and pasture without irrigation. Corn is also grown on this lower land, averaging 15 tons of silage to the acre.

Since establishing the dairy, a silo has been in continuous use. The 14x32 resaw silo furnishes 30 pounds daily to the 40 milking cows from September 20 to February 20, fed in connection with alfalfa hay.

To supplement the silage and alfalfa hay, hill pastures are used as early as January and as late as June 1, in favorable years. Because part of this hill land is more fertile than the rest it will be planted to vetch and oats another year.

Besides its suitability for growing feed the ranch is well situated for building and drainage. The milk barn, separator house, and shed for winter shelter are located at the foot of the hill land. Well graveled lanes allow the cows access to either the hill pasture or the shed shelter. Mr. Mitchell says that the latter has more than repaid him; for with its concrete floor, it not only aids in keeping up the milk flow in bad weather, but is easily kept clean.

When he built it the present milking barn was thoroughly modern but advanced ideas have made it old fashioned now. Accordingly it is being remodeled this summer, with concrete floors and splash walls. The separator house is already a model of convenience and cleanliness, being equipped with steam boiler for running the separator and for sterilizing utensils. All buildings are drained to the lower land. A manure pit and shed has been built some distance from the buildings.

Profitable Dairying on Grain Ranch.

[Written for Pacific Rural Press.]

Twenty years ago, C. A. Beecher of San Joaquin county decided to keep a small herd of dairy cows on his grain ranch, to clean up the wastes. From the beginning he used registered Holstein bulls, gradually improving the producing abilities of the cow till 1913, when he sold the entire milking herd, retaining only the heifers.

During the past year those heifers averaged 271 pounds of butterfat from a little more than 7,000 pounds of milk, according to the report of the San Joaquin Cow Testing Association, of which Mr. Beecher is a member. And what is more, they did this on volunteer oat hay and wild pasture.

Mr. Beecher believes that they would have done better if they had been fed alfalfa hay; but alfalfa does not do well on his adobe land; and by feeding hay and pasture he is able to dispose of those crops at a profit as well as practice a rotation system in connection with his wheat farming.

There are 325 acres in the Beecher ranch, one-third of which is farmed to wheat, one-third allowed to grow a volunteer crop of hay and one-third pastured. Seasonal conditions sometimes alter this system; but in the main that has been the outline for 20 years.

Probably one of the most important reasons, next to breeding, why Mr. Beecher's cows do so well under this system is the manner in which the hay is cured. It is cut earlier than is usual with volunteer hay, and a rake follows directly behind the mower. Within six hours after it is raked it is in the shock, where it is allowed to cure. This method insures a nice green, tender hay.

Costs and Profits.—From the field, it is taken to the barn and stacked for fall and winter feeding, it being the practice to allow the cattle access to the hay early in the fall but usually they do not eat it till the pasture runs out along in October. They continue to eat it then, till about March 1, when the pasture is again ready for them. During that time they have eaten on the average three and a half tons of hay which is charged up to them at the rate of $10 a ton, a higher price than the average which hay buyers pay for such hay.

The hay ground last year is the pasture land this year, an acre of this being sufficient for one cow during the pasture season and being charged up to the dairy at $15 an acre.

The third of the ranch farmed to wheat is neither charged against or credited to the dairy, but Mr. Beecher believes that his grain yields have continued good longer than they would if the land were not pastured every third year.

As to the profits of his system, he points to the following cost and income per cow per year: Cost: three and a half tons volunteer hay, $35; pasture, $15; labor, $30; interest on cows, equipment, and depreciation, $10. Total cost per cow, $90.

Income: 7,000 pounds of milk, sold sweet at $1.50 a cwt., $105; one calf at weaning time, $5. Total income, $110. Profit per cow, $20. Mr. Beecher's own labor is figured in the cost of labor above.

Thirty cows are now being milked; but this number will be increased to 40 in the fall, which will reduce the overhead per cow accordingly.

Mr. Beecher's 20 years' work would seem to indicate that good dairy cows will consume feed, even on a grain ranch, more profitably than it can be disposed of otherwise, besides conserving the fertility, which is no small problem in itself.

Mr. Dairyman or Breeder---

Do you want to improve the butter-fat output of your herd? If so, I have just the bull you want.

Pietertje Cornucopia Creamelle

His dam on her first test made a record of nearly

25 Pounds, Testing 4.7 per cent.

He is just ready for service and just the sire for your herd.

Write, or come and see him.

F. STENZEL

Breeder of Holsteins.
SAN LORENZO, CALIF.



A pony could haul a heavier load than a horse if the axles were greased with C. & S. Pony (Graphite) Grease.

Sold in 1-lb. tins by most dealers

Ask yours

WHITTIER-COBURN COMPANY
San Francisco

MODEL HERD OF BERKSHIRES

Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 180837 and Breed's Model 165859, both winners of blue ribbons at State Fair.
Descriptive catalog upon request.
J. L. GISH, Laws, Inyo County, Calif.

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One of the interstate vaccine representatives, with his assistant, has in Imperial Valley alone immunized over twenty thousand hogs since the third of February, 1916, with perfect success.

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Contains everything necessary to repaint a Ford or similar sized car, including top. Simple directions on each can.
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GET STARTED RIGHT.

Registered DUROC JERSEYS

Service Boars from Prize-Winning Stock are money makers.
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Water Troughs, Windmills, Frames, and Towers, Steel and Wood.
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SCIENTIFIC PRESS PATENTS PATENT AGENCY
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Circular containing 100 mechanical movements mailed free.

Intensifying Hog Quality.

[Written for Pacific Rural Press by R. K. Walker, Devore.]

With the climate of this state so splendidly adapted to the needs of livestock, I look for California to be well represented in the future national champions of all breeds.

At the present time, the breeder of registered Durocs in California is very much handicapped, due to the scarcity of choice breeding stock and the right blood lines. He is often compelled to use sires that are distinct "outcrosses" in order to get a good individual to mate with his sows.

It is a well recognized fact that the best breeders of today are the men who have stuck to a certain family or line of breeding, often spending years to correct some fault such as a poor back or feet, at the same time keeping in mind the good points and weaknesses of the grand sires and grand dams and the hogs back of them. A careful breeder of today who has attained success with his herd by this continued line breeding would no more think of using a sire whose breeding made him a distinct outcross than he would of using one of another breed.

This success of line breeding is nicely illustrated by the methods used by McKee Bros. of Kentucky, the largest breeders of Durocs in the world. They paid five thousand dollars for the twice grand champion at the International, Defender, because his breeding was such that in crossing him on their sows, they were not making a distinct change in blood lines, but merely using an outstanding individual of the same blood lines. They have continued this line breeding and now are bringing it even closer and practicing inbreeding to some extent by crossing grand Champion sons of Defender on sows sired by him. Mr. McKee tells me in a letter of sometime ago, that the pigs of this breeding "are showing unusual stretch, large bone, and all the qualifications necessary to make unusually large Durocs." The class of hogs these men are producing, showing as they do, great scale, and extreme quality together with hardiness and prolificacy, justifies them in the lines of breeding they are following. These men are experienced breeders however, and can follow these practices with safety. Younger breeders should be careful about inbreeding, as this practice intensifies bad characteristics possessed by the sire and dam, as well as their good points which he is trying to fix. The inexperienced breeder should at first merely stick to the same general family lines and not use boars in his herd whose breeding makes them distinct out-crosses with his sows.

The possibilities for live stock raising, and especially hog raising in California, are absolutely unlimited to the man who understands and follows the correct principles of breeding, combined of course with proper feeding, without which all breeding operations must be a failure.

SUPPLYING BUYERS UNIFORM HOGS.

[Written for Pacific Rural Press.]

It is generally known that the man who buys livestock, whether he be professional buyer or farmer, is always attracted by herds and flocks uniform in size and color.

With none is this more true than with the hog buyer; and it is to cater to this preference that W. R. Stokes, near Orland, grades all of the stock hogs and pigs that he buys for feeders, as soon as they are placed in the feeding pens.

In April of this year he had between 125 and 150 head in the fattening pens. These were divided into a number of pens, one for red hogs, another for spotted ones, and another for black ones. They were also graded for size, so that you could hardly determine any difference in an entire pen.

But uniformity in size and color is not all that the buyer finds on this ranch. He finds uniform quality, for every hog is fed alike on a ration of skim milk, grain, and alfalfa pasture, from the time it is weaned till turned off in the finished stage.

The feeding quarters on this ranch consist of a house 90 feet long and 20 feet wide with a four-foot feeding alley running lengthwise of the entire building. Originally it was intended for a farrowing house, being divided into 30 pens, but at present most of the division panels have been removed to enlarge the pens for fattening purposes.

Because the 20 acres of alfalfa in the ranch was made into a hog establishment in the spring of 1916, Mr. Stokes is not yet certain which will prove the most economical ration for fattening.

In April he was feeding skim milk and ground barley, the barley being soaked with all of the milk it would hold. This made a fairly stiff wet mash which was fed three times a day with about twice as much skim milk, making the proportions about four of skim milk to one of barley. Mr. Stokes gets better results in feeding a light ration three times a day than he does in feeding a heavier one twice.

PIG CLUB POLICY.

[Written for Pacific Rural Press.]

The board of directors of the California Swine Breeders' Ass'n recently suggested that the financing of the Boys' Pig Clubs can best be done by banks and commercial clubs. It was also recommended that the breeder could aid in creating and maintaining these clubs by selling registered bred gilts to members of the clubs at $25 each.

This policy was agreed upon after carefully studying reports from agents of the U. S. Bureau of Animal Husbandry submitted by R. R. Ingals and reports of pig club organizers and bankers by D. O. Lively.

IT IS BETTER TO BUY AT THE

Welch Dispersal Sale

OF

Registered Holstein Cattle

Los Banos, Cal., Wednesday, June 28,

THAN WISH YOU HAD.

Remember, There Are

85 cows and heifers—candidates for great records. Make money and a reputation for yourself by buying some of these great producers and daughters of great producers and putting an A. R. O. record on them.

Remember, There Are

20 males—ready for service, including the three Herd Bulls. Don't overlook King Segis Wayne Pontiac, whose two nearest dams average over 34 lbs. butter in 7 days. Dairymen and Breeders should seize this opportunity to put a fine young Herd Sire at the head of their Herd at a price well within their reach.

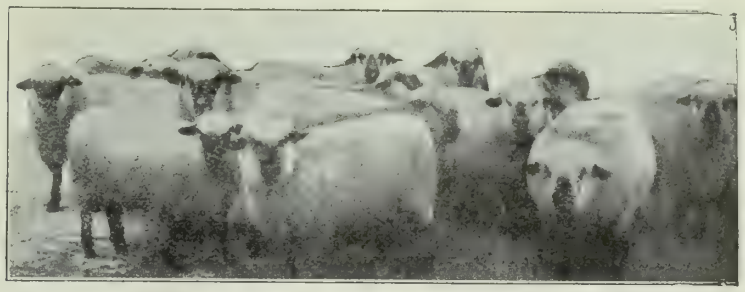
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Col. B. A. Rhoades, Los Angeles, Auctioneer.

Hillcrest Stock Farm

Thornton S. Glide, Prop. DAVIS, CAL.



SHROPSHIRE and MERINO SHEEP, and SHORTHORN CATTLE

Shropshires sired by rams imported by me from England. Yearling Rams and Ram Lambs. Individuals or carload lots. A Few Shorthorn Bulls for Service.

First Annual Auction Sale

25 Head Saddle Horses

JUNE 20, 1916, 7:45 P. M.

San Francisco Riding and Driving School.

7th Ave., near Golden Gate Park.

In this Sale will be Horses ready to use shown under saddle; Mares already bred to the P. P. I. E. Jr. Champion Le Grand McDonald; and Foals by their side; also some 2-year-olds and yearlings by Artist Jr., the winner of the Sweepstake at California State Fair last year he was shown. He was sired by Artist Montrose, winner of Sweepstake at Chicago World's Fair; Artist Jr. is sire of Don Pedro, the horse selected after an inspection of the State by the Japanese American Association and presented to the Mikado upon his coronation. Artist Jr. will be included in the Sale. Will also sell the imported French draft stallion Alexander.

Catalog furnished on request.

BRIDGEFORD COMPANY

519 California Street, San Francisco

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Send for sensible folder on feeding hogs

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Animal Food Dept. 704 Townsend St., San Francisco

BIG TYPE POLAND CHINAS

Gilts from Weanlings to one year old. Bred or open. Boars from weanlings to 8 months.

THE BROWNING STOCK FARM.

W. H. BROWNING, PROP. WOODLAND, CAL.

Tagus Ranch

BREEDERS OF PUREBRED

Holstein Cattle

Polled Angus Cattle

Duroc Jersey Hogs

Tagus Switch, Tulare Co., Cal.

With the Livestock Men.

DAIRYING AND DAIRYMEN.

I. Moss of San Francisco bought 22 dairy cows at the Harlan sale for his new dairy ranch in Glenn county.

The Porterville Co-operative Creamery Ass'n is advocating a Cow Testing Ass'n to enable dairymen to check up the creamery fat tests.

Chowchilla people are expecting a $20,000 creamery to be completed by Sept. to handle the product of 3500 cows.

The Cow-Testing department of the Kern County Farm Bureau has 830 cows signed up to begin testing July 1.

A $641 average was obtained for 126 Jerseys at the T. S. Cooper & Sons' sale in Penn. May 30. Nineteen cows sold at over $1000 each, and two sold at $3000.

While the number of establishments producing butter, cheese, and condensed milk in U. S. decreased 518 from 1909 to 1915, the total value of products increased 34.7 per cent.

An official record of 16,623.1 pounds milk in 180 days was just finished by Mosetta Mutual Paul Johanna, a Holstein cow owned by Mrs. Anita Baldwin. From this was made 697.917 pounds butter. She is in for a year's official record.

F. M. Johnson of Napa has sold his entire herd of grade Jerseys to H. T. Harrold of Orland who is substituting Jerseys for his large herd of grade Holsteins. Mr. Johnson will continue to enlarge his choice foundation herd of registered Jerseys.

J. M. Smullen, who delivers milk and cream to Sonora, is installing a refrigeration plant in his new modern dairy barn, in order to cool the milk and cream before bottling. He has splendid results feeding millet, mostly cut and fed green. The cows clean it up readily and keep up a good flow of milk.

Stanislaus County Cow-Testing Ass'n records for May show H. E. Cornwell's Holstein produced 76.2 pounds fat and two others over 60 pounds; L. D. Thompson had three Holsteins which produced over 60 pounds; F. D. Keeney a Jersey 61.3 pounds; J. M. Bomberger, Jersey, 63.5 pounds; 76 cows produced over 45 pounds in the month.

The Iowa Meadow Co. of Chino has just received four young registered Holstein bulls from the Stanford Vina Ranch for use on their 400 dairy cows. Two of the bulls were sired by King of the Pontiacs 14th; the others by Dutchland Colantha Sir Ormsby and by Geneseo Lad. The Vina Ranch has made some fine records and its herd is considered one of the best in the State by Manager H. C. Witherow of the Iowa Meadow Co.

SWINE BREEDERS AND STOCK.

W. W. Everett of the Riverbend Farm, Napa, will show purebred Durocs at the State Fair.

Otis Burrell was the winner of the pig-raising contest of the Armijo High School Agr. Club.

H. E. Boudier and Son of Napa have sold four weanling sow pigs to Geo. L. Horine of Winton, Merced county.

Bankers are being urged for their own good to extend credit to wide-awake farmers to purchase purebred hogs.

Geo. M. York of Modesto got the 1st prize 500-pound Berkshire sow shown at the Chico fair by Geo. Murphy of Perkins.

John Cantoni of Napa Jc., who went east last year as one of the winners in the Boys' Corn Club contest, s raising purebred pigs this year in a similar contest.

The Porterville Boys' Pig Club exhibited their stock at the end of the four months' contest. Lester Anderson received the full 30 per cent allowed for fitness of his two hogs for the block.

The Duroc Breeders' Ass'n of Stanislaus county will meet at the rooms of the Stanislaus county Board of Trade instead of the Modesto Chamber of Commerce as announced last week.

BEEF CATTLE AND BREEDERS.

A. W. Foster of the Hopland stock farm received a Shorthorn bull by express June 13 from Iowana Stock Farms.

New range grasses are needed in Humboldt county and Farm Adviser Christiansen is starting experiments to determine the best variety.

Lee Gill and H. Sickles of Porterville each shipped two cars of fat cattle to Portland June 7. Gill's cattle averaged 1300 pounds and $91.

On account of the campaign against cattle tick in the southern States, there is sure to be a heavy demand for stock there in the near future when tick eradication makes stock-growing safe.

MISCELLANEOUS.

Goats are practically free from tuberculosis, according to E. C. Voorhies of University Farm.

Goat milk cheese is to be made on the J. Howland ranch at Redlands, by Laurence Nourse, a recent University Farm School graduate.

SAN FRANCISCO LIVESTOCK SHOW.

[Written for Pacific Rural Press.]

An annual San Francisco Livestock Show to compare with those held in Portland, Denver, Kansas City, and Chicago, has taken firm prospects of realization.

Some 30 big stockmen and San Francisco business men met in San Francisco June 13 and launched the project by naming a committee of seven with power to work out details, finance the proposition, and pull off a show this fall if they see fit.

This committee consists of M. W. Newhall, A. W. Foster, F. L. Wash-

LIVESTOCK DIRECTORY

Rates in this directory, 3c per word each issue; if carried weekly for one year, 2½c per word.

SWINE.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—The kind that makes the money. Pure-bred—registered—cholera immune. An extra fine lot of weaned pigs—both sexes—representing the best and most popular blood lines this breed produces. Five different sires used. Can mate up not akin. Quality combined with size. Rapid growing—early maturing. A few nice fall gilts that will be bred and ready to ship in September. Write for prices and circular. C. B. Cunningham, Mills, Sacramento County, Calif.

REGISTERED DUROC-JERSEYS—Fall boars and gilts. Weanlings sired by an excellent son of the 1020-pound Royal Mundie. We have pigs sired by this boar weighing 240 pounds at 7 months, and out of line bred Golden Model, Crimson Wonder, Orion, Chief, and Colonel sows. For information write Haden Smith. R. 1, Box 84D, Woodland, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IRA Wonder won first and Reserve Championship P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IRA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEY — Weanlings, shoats, gilts and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

BIG TYPE POLAND CHINAS—The profitable money-making hog. The hog for the farmer. The real mortgage lifter. Large herd to select from. Bred sows, bred gilts, open gilts, weanlings of both sex. Boars ready for light service. Extra special prices. Geo. A. Smith, Corcoran, Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES — World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

REGISTERED DUROCS—All ages. One yearling boar. Satisfaction guaranteed. Frederick J. Johnson, Napa.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

BARGAINS IN CHESTER WHITES—Few excellent bred gilts, $30; sows, $35. Service boars, $20 and up. Weanlings, $10. Best blood lines. Only good individuals shipped. Dallas Bache, Hollister, Cal.

DUROC-JERSEYS—Some great weanlings of both sexes by "RIVER BEND HIGH MODEL." Improve your herd by introducing this blood. RIVER BEND FARM, St. Helena, Cal.

FOR SALE—Fancy belted Hampshire hogs. Well belted young sows and boars, registered. Prices reasonable. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonsall, California.

REGISTERED BERKSHIRES — BOARS—5 and 6 months old, $15 and $20 each. Also a few year-old ones. All pure-bred animals. G. A. Casey, San Jose, Cal.

DUROC-JERSEYS, REGISTERED — FANCY WEANLINGS, PRIZE WINNING SIRE—$7.00. Either sex. June delivery only. O. P. Burns, 1108 O Street, Fresno, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE, QUICK MATURING registered Berkshires—Both sexes, $10 each for weanlings. Older ones at farmer's prices. J. M. Bomberger, Modesto, Cal.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

DEL DAYO FARM—(Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen S. Day, Box 1140, Sacramento.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

LARGE TYPE POLAND-CHINAS—Now booking orders for Spring pigs rom our Nebraska prize-winning sows. H. I. Marsh, Route A, 348, Modesto.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

REGISTERED DUROCS from Eastern sows. One yearling and several Fall gilts. No culls. S. S. Southworth, Napa, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

FOR SALE—Two and three months old thoroughbred Poland China Boars. Mrs. M. A. Rodgers, R. 1, Box 34, Galt, Cal.

POLAND-CHINAS—250 lbs. in six months our aim. Imported sows. None better. Linn & Porter, Route A., Modesto, Cal.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

REGISTERED POLAND-CHINA SWINE — Prize-winners. Finest stock in the state. $20 up. M. Bassett, Hanford.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, $10. H. E. Boudier & Son, Napa.

REGISTERED TAMWORTH HOGS—all sizes and ages. Reasonable discount for quantity. L. J. Archer, Antioch, Cal.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRE PIGS — Write or call Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM — Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

CHAS. GOODMAN — Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys H. F. Harrold, Orland.

POLAND CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

READAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE — C. D. CONWAY, Ripon, Cal.

REGISTERED DUROCS—H. N. Leininger, R. D. 4, Chico, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

SHEEP AND GOATS.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

THE BULLARD FLOCK RAMBOUILLETS — Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

FOR SALE—Shropshire bucks, yearlings and lambs. Individuals to car lots. Purebred but not registered. J. B. Bloom, Dixon.

KAUPKE BROS., WOODLAND, CAL.—Breeders and importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets, Hanford, Cal.

BEEF CATTLE.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francico.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEIN bull calves. Sired by Lorena Korndyke Alcartra, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell. Escalon, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

FRANK MEACHAM, Petaluma, California — Breeder Red Polled Cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

VANDERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller and Lux, Colony Farm, Dos Palos, Cal.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS — Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

BULL CALVES from a grandson of Colantha Johanna Lad and from a son of King of the Pontiacs. J. W. Benoit, Route C, Modesto, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke Co., Lockeford, Cal.

HOLSTEIN BULLS out of A. R. O. cows, sired by a son of King of the Pontiacs. Prices reasonable. J. H. Harlan Co., Woodland, Cal.

REGISTERED HOLSTEINS—32 high-grade Holstein heifers coming fresh this Fall for sale. E. E. Freeman, Route B, Modesto, Cal.

TWENTY-EIGHT high grade yearling and two-year-old Holstein heifers for sale; some bred. K. W. Abbott, Milpitas, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

REGISTERED JERSEY BULLS from Register of Merit cows. D. F. Conant, R. "B," Modesto.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BREEDERS OF A. R. O. Holstein-Friesian cattle exclusively. Dirk Dairy Farm, Lemoore.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEYS — Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

burn, R. B. Hale, B. F. Schlesinger, W. T. Sesnon, and A. P. Giannini.

A $10,000 guarantee fund is to be raised, as it was shown by M. H. Tichenor that all the big shows had to be financed that way in their early years, but all are now self-sustaining. He made the point that the Nat'l Dairy Show always had a deficit until four years ago when they began appealing to the country people. Since then it has been a great financial success.

D. O. Lively showed that California needs such a show, to encourage production of more and better stock. California spends $30,000,000 annually to buy 70 per cent of the pork we eat, from Utah and Idaho where production conditions are far less favorable.

Such a show would benefit San Francisco business men, who will be asked to put up the guarantee fund, as it does the business men of the other show cities. Letters from those were read highly endorsing their shows as a benefit to city business and country livestock breeding.

Mr. Newhall pointed out that such a show should have two objects; that it would fail its opportunity if it did not provide the second: (1) opportunity to standardize the ideals of livestock breeders, and through them, their livestock; (2) disseminate better stock throughout the State. If there is a chance to buy good stock at reasonable figures, people would be attracted from all over the State. This, more than any other factor, would work for State livestock improvement. Seeing the animals would educate to higher ideals, but there should be lecturers to point out why certain conformation is desirable and profitable, what the better higher-priced stock will do, and what "better livestock" means.

DAIRY CATTLE.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young Stock for sale. W. J. Hackett, Ceres, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd, D. & H. Rowles, Modesto.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

HORSES AND MULES.

FOR SALE—at a sacrifice—one registered Jack and seven Jennets. Will trade for dairy cattle. D. O. Lively, 216 Hobart Bldg., San Francisco.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

FOR SALE—A Bargain. One of the best herds of registered Holstein cattle in California. 70 head. 40 tuberculin tested cows, several A. R. O.; all young. ALSO—three stallings, 30 head each, high grade Holsteins in fine condition and good milkers. ALSO—at a sacrifice, one registered Jack and seven Jennets. Will trade for dairy cattle. D. O. Lively, 216 Hobart Bldg., San Francisco.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells live stock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb. boar. Ed E. Johnson, Turlock, Cal.

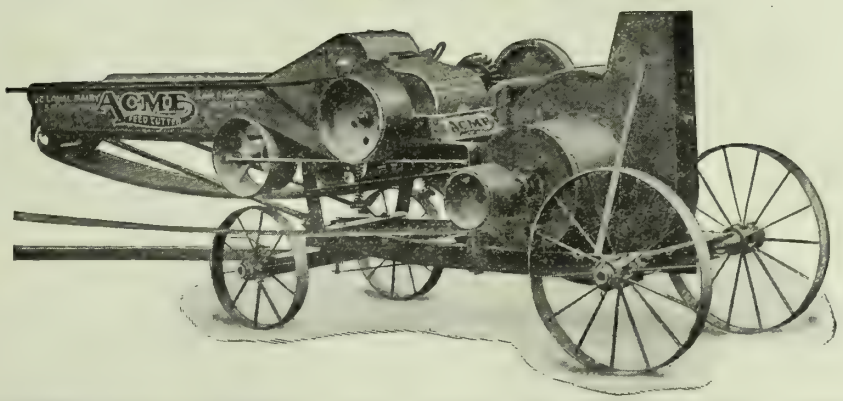
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The Triumph of the Silo Age

in strength, durability, simplicity, economical power, enormous capacity and absolute safety, the **ACME FEED CUTTER** excels all others.

The Acme Alfalfa Meal Attachment

Can be fitted to any size Acme Feed Cutter. This attachment will enable the making of an excellent grade of **ALFALFA MEAL** from alfalfa hay at a cost not exceeding that for baling.

Cut Out the Mill Feed Expense Bill by Feeding Silage and Alfalfa Meal Made with an Acme Cutter.

Send for catalog and sample of alfalfa meal, stating the kind of feed you have to cut.

GOOD SILAGE INCREASES THE MILK FLOW 25 PER CENT AND REDUCES FEED COST 15 to 20 PER CENT.



IT IS NOT A QUESTION of whether you can afford a silo. It is a question of how long you can afford to be satisfied with the lowest milk yield from your cows and the highest cost for feed.

SILAGE IS BY FAR the least expensive feed that you can use and at the same time the greatest milk-producing feed.

Ideal Green Feed Silos

are increasing the profits of thousands of Pacific Coast farmers. The men who use these silos are getting big returns because their cows are giving a large flow of milk.

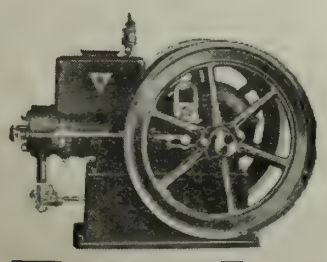
THERE IS NO QUESTION about the value of silage—GOOD silage. The only men who doubt the value of silage are those who bought cheap makeshift silos that produce a poor quality of silage.

IT DOES NOT PAY to try to save a few dollars on the first cost of a silo. The loss due to spoiled silage is likely to amount to many times what you hope to save on the first cost.

REMEMBER that you will get from 20 to 30 years' service from an Ideal, and that it is a strong, tight silo that will protect your silage perfectly. In the better quality of silage you get, the Ideal saves each year more than the difference between its cost and that of an inferior silo.

DO YOU WANT PROOF of the extra value of the Ideal? Do you want to know just why it will give the best silage and last the longest? Then ask us to send you our large illustrated catalog that shows every detail of this silo; how the parts are made and put together and the quality of the material used.

YOU CAN THEN JUDGE for yourself. The crop you put into a silo is worth a lot of money. Don't take any chances on having it spoiled by putting it in a cheap silo, but buy the best you can get. Ask for the catalog.



Dependable Power

CAN YOU AFFORD AN ENGINE THAT BALKS?

When IT'S TIME to separate the milk, grind feed, cut silage or pump water for the stock or to irrigate, you cannot afford to waste time tinkering with an engine.

YOU WANT ONE THAT "will deliver the goods" any and all the time.

ALPHA ENGINES

GASOLINE, KEROSENE, or DISTILLATE are always "on the job" ready to deliver power when you want it.

NO BATTERIES OR COIL needed. All sizes are equipped with a "built-in" magneto that makes starting quick and easy without cranking. Send for Engine Catalog. **IN SIZES 1½ TO 50 H. P.**

De Laval Dairy Supply Co.

SAN FRANCISCO SEATTLE

Everything for the Dairy

Veterinary Queries and Answers.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for $1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

COLT RUPTURED.

To the Editor: My colt is ruptured around the navel.—G. W. I., Watsonville.

[Have your veterinarian operate on it.]

SAND CRACK.

To the Editor: My mare has a sand crack on the inside of her front hoof. It extends the whole length of hoof and sometimes bleeds. —D. R. P., Richfield.

[Cut this crack right down to the quick on both sides and then cauterize with a red hot iron.]

PIGS ITCH.

To the Editor: My 40-pound pigs itch on the rump and sides. Absolutely free from lice and I think they have no worms.—E. S. H., Niland.

[They have a mange mite. Dip these pigs once a week in a solution of liquor cresolis compositus 2 per cent.]

CHEMICAL DEHORNING.

To the Editor: Is there a safe chemical to use in dehorning a 3-year cow, to be used by one experienced in handling drugs.—B. T. S., Watsonville.

[No drug can be used for dehorning at this age.]

SWELLING ON TOP OF HEAD.

To the Editor: A mare has a swelling on top of her head. She travels with her head down. I have blistered twice in the last few days.—F. G. D., Madera.

[This is poll evil. An operation is the only cure. Consult nearest veterinarian.]

HEIFER BLOATED.

To the Editor: A heifer with second calf bloated three or four days ago and is still that way. She is short winded; eats and drinks; seems in no pain. Has not been on alfalfa pasture. Been feeding this year's first crop alfalfa hay.—W. J. L., Wheatland.

[This is indigestion. Give two pounds epsom salts in one gallon warm water. Then 1 teaspoonful fluid extract nux vomica three times a day for a few days.]

FAILS AFTER CALVING.

To the Editor: A heifer with first calf gave a little milk at first but flow reduced gradually to almost nothing. Eyes bloodshot; lies down most of the time; eats nothing; staggers when she walks.—P. D., Holtville.

[This cow has inflammation of the uterus and at this late date there is little that one can do.]

LEGHORNS THIN.

To the Editor: Have 700 year-old Leghorns, one and two fingers out of condition by the Hogan system. The house is 20x70, and there are just enough roosts for them to crowd on. Have a balanced mash before them all the time besides feeding wheat and Egyptian corn in the litter.—S. T. C., Santa Rosa.

[Crowding probably has a bad effect on these birds. A balanced mash fed with as wide a grain ration as you are feeding would not make a balanced ration. Reduce the carbohydrates in your mash and the birds will balance the ration themselves from the grain.]

GIVE THE BOYS SOME SHEEP.

To the Editor: I wish to call the attention of many farmers throughout this state to the possibilities open to them of carrying a few sheep as a side issue or a by-product of the ranch.

If you have fence lines, grain and weeds are growing which could be cleaned up by a few sheep.

Many localities labor with the problem of cleaning out irrigation ditches in the spring. Sheep will not only take all the growth out of these ditches to facilitate the flow of water but will at the same time firm the bottoms and banks better than anything else and punch in gopher and squirrel holes for you.

Sheep are voracious weed-eaters. Of 480 miscellaneous varieties of weeds, sheep will eat 430; can you beat that?

How about your stubble fields? Of course you turn stock in on them or rent them, in which case the other fellow makes a piece of money at your expense; your sheep, however, will make you good returns here, along with other stock. Then you have them for use in other ways the rest of the year, where you could not handle other stock.

How many side county roads are there in your neighborhood lined with an abundance of feed going to waste?

For the Boys.—I have often wondered if the average rancher appreciates the opportunity offered by a small flock of sheep for the education of his young boys and the stimulation of their interests in the ranch.

My father made his first nineteen dollars out of three ewes which were given to him personally by his father. The feed they ate was never missed, while their boy owner made out of them more money than he had ever had before. It opened his eyes to something more than living and going to school. It gave him a personal interest; it showed him a way of making money and the possibilities of ranching as a business. He never forgot it.

In the average locality it will surprise you how many places a boy can hunt up, where he will find free feed for his sheep, if they are HIS sheep!

Go to it, Mr. Rancher, a few sheep are a good thing for you; they are a supremely good thing for your boys. The city doesn't need your boys; the ranch needs them more, because they know the business. Train them to realize that it is a good business.

Oakland. Wm. Curtis Clark.

Shorthorn Bulls
and
: : Heifers : :

On April 21st we arrived from Missouri with a carload of choice registered Bulls and Heifers.

INSPECTION INVITED.

H. L. & E. H. MURPHY,
Perkins, Sacramento Co., Cal.

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and [illegible] pigs of both sexes. This is the largest herd of TAMWURTHS in the State. Our Stock is sure to please.

Write or call and see us.

SWINELAND FARM,
W. O. PEARSON, Prop.
Woodland, California

What a
DE LAVAL
Cream Separator
SAVES
Over any other Separator or Creaming System

QUANTITY of cream that no other separator will recover completely, particularly under the harder conditions of every day use.

QUALITY of cream as evidenced by De Laval butter always scoring highest in every important contest.

LABOR in every way over any gravity system, and also over any other separator, by turning easier, being simpler, easier to clean and requiring no adjustment.

TIME by hours over any gravity system, and as well over any other separator by reason of greater capacity and the same reasons that save labor.

COST—since while a De Laval Cream Separator may cost a little more than a poor one to begin with it will last from ten to twenty years, while other separators wear out and need to be replaced in from one to five years.



PROFIT in more and better cream, with less labor and effort, every time milk is put through the machine, twice a day, or 730 times a year for every year the separator lasts.

SATISFACTION, which is no small consideration, and can only come from knowing you have the best separator, with which you are sure you are at all times accomplishing the best possible results.

EASILY PROVEN—these are all facts capable of easy demonstration and proof to any user or intending buyer of a cream separator. Every De Laval agent is glad of a chance to prove them by a De Laval machine itself — without the slightest obligation to the prospective buyer unless entirely satisfied.

If you don't know the nearest De Laval agent simply address the nearest main office as below.

De Laval Dairy Supply Co.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

SAN FRANCISCO, SEATTLE.
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER.

SANTA ANITA RANCHO
ANOAKIA BREEDING FARM

HOLSTEIN CATTLE

The breeding herd of registered Holstein cattle at Santa Anita Rancho is made up of individuals selected strictly upon their merits as producers, high individual quality, and production and proven transmitting power of their ancestors. **PRINCE GELSCHE WALKER,** whose combination of breeding, individuality, and the production of his daughters stamp him as one of the greatest young sires of breed.

Females in the herd are making large official record as rapidly as they freshen, and the herd is being developed to become one of the largest groups of high producers in the West.

At present a few bull calves are offered for sale. These are straight, well-marked youngsters, bred right, and priced moderataely.

BERKSHIRE HOGS

The breeding herd of registered Berkshires has been carefully selected, and represents the blood lines that are in the very first rank of the breed. The herd is headed by **KINTYRE LAIRD,** first prize junior yearling and reserve senior champion boar at Panama-Pacific Exposition. He is an unusually good type, and comes from a family noted for uniformity and prize-winning quality.

A few boar pigs are offered at this time.

POLAND-CHINA HOGS

In founding the herd of registered Poland-Chinas at Santa Anita Rancho, the choicest individuals of the most noted prize-winning families in the the West were drawn upon, and for uniformity, desirable size and quality the herd is unexcelled in the West.

At the head of the herd is **BANKER'S BOY,** junior champion and reserve grand champion at P. P. I. E.

Anita M. Baldwin — **W. H. TAYLOR, Superintendent.**
Santa Anita, Cal.

The Madera Creamery Co. has been found to take over the business and property of the Madera Co-operative Creamery Ass'n.

Hay and Forage for the Horse.

[By Prof. F. W. Woll, University Farm, Davis, Cal.]

The hay and forage crops used in feeding horses include nearly all rough feeds that are of value for stock feeding. Only a relatively small number are fed by California farmers, however, although a good many more might be fed to advantage in special cases where there is a shortage of the forage commonly fed, or where other feeds become available at prices that render them economical for feeding purposes.

To make good feed for horses, the hay must meet at least three requirements: It must be palatable to this class of animals; must be free from dust and mold; and handle with the least possible loss of leaves and fine stems. It is generally considered by farmers and horsemen in the Eastern and Central States that timothy hay fulfills these requirements better than any other forage crop; and this hay is the most important horse feed in that section of our country. It is, in fact, considered as essential in feeding horses as are oats among the grain feeds.

For horses that are hard worked or driven fast it is probably true that no single hay crop will prove more satisfactory than timothy; but this does not hold good in the case of colts, growing horses, or brood mares. These need some forage crop that furnishes a larger proportion than timothy does, of the class of nutrients known as protein, or flesh-forming substances, like mixed clover and timothy, red, alsike or crimson clover, alfalfa, cow peas, etc. We thus find clover and timothy hay commonly fed in the East, and in Western States various leguminous crops, especially alfalfa. These hay crops are in general less satisfactory for working horses than straight timothy, as they are often dusty and are likely to cause looseness of the bowels; but they have the advantage in being higher in protein than timothy. A good grade of timothy contains about three per cent digestible protein and forty-five per cent digestible carbohydrates and fat (starchy components), while alfalfa contains over ten per cent digestible protein and nearly as much carbohydrates and fat as timothy.

Timothy Unnecessary. — In this State timothy is grown to only a small extent by farmers from the Eastern States whose previous experience led them to believe that horses must have timothy hay and that no other kind of forage can take its place. That this is a mistaken idea is proved by the fact that few horses in the Western States ever taste timothy, and still look as well and do as good work as horses in any other part of the country.

There is a prejudice against legume hay among many horsemen, and perhaps especially against alfalfa, as it is believed to make the horse soft and unfit for heavy work. Trials at a number of experiment stations, as well as extensive practical experience, have shown, however, that the health or the efficiency of the animal will not suffer from long-continued exclusive feeding of alfalfa when this is made and fed right. Attacks of colic and other disorders that sometimes occur are due to the method of feeding practiced and are not a necessary result of the alfalfa ration.

Precautions with Alfalfa.—The main precautions to be observed in feeding alfalfa and other kinds of legume hay to horses are: It should be fed in only limited amounts, for work horses not over 12 to 15 lbs. per 1,000 lbs. body weight. It must be bright and clean, and as free from dust as possible.

Alfalfa intended for feeding horses should not be cut until quite mature. Such hay is lower in protein and higher in fiber than early cut alfalfa, but comes nearer to timothy and is a better horse feed than the latter. Alfalfa hay was found more valuable than timothy hay for hard-working farm horses in trials at the Illinois Station, as shown by the fact that less grain was necessary to prevent them from losing weight than when timothy was fed.

Grain hay, wild oat, and stock hay are the main horse feeds in the Coast regions and other sections of the state where alfalfa is not grown. Hay from oats cut when in the milk will compare favorably with clover hay and cow pea hay according to trials at the North Carolina station; and this as well as other kinds of grain hay, are important forage crops in the sections mentioned. There is no marked difference in the chemical composition of these hay crops and timothy hay, or in the amounts of net energy that they furnish. They may, therefore, be considered of approximately similar feeding value.

(To be continued next week.)

PROFITABLE STEERS WITHOUT CORN.

[Written for Pacific Rural Press.]

A recent experiment carried on by the University of Missouri in beef cattle finishing should be of interest to those who have been interested in finishing steers on the alfalfa ranches of this State.

Five lots of six two-year-old steers were included in the experiment, and while the average daily gain per steer was larger where shelled corn had been included in the ration, the most economical gains were secured when an average daily ration of 5.05 pounds of old process oil meal, 37.62 pounds corn silage and 4.03 pounds of alfalfa hay were fed.

The steers receiving the above ration were fed 133 days, being started on two pounds of oil meal per day and gradually increased during the latter part of the fattening period till they were eating seven pounds apiece daily. They were fed all of the alfalfa hay and silage they would consume.

With corn silage figured at $4.50 a ton, oil meal at $37 a ton, and alfalfa hay at $14 a ton, the cost of gain per hundred pounds was $8.58 and the net profit per steer for the feeding period was $14.56. Where the above ration was fed, hogs were practically eliminated as a profitable factor.

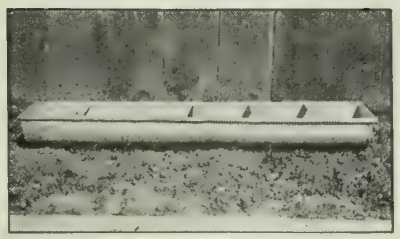
There are 850 creameries in Minn. of which 622 are co-operative. They are said to pay 5 to 8 cents per pound more for fat than the private creameries.

More Hogs Die

Or Become Sickly and Unprofitable from Causes which Are Absolutely Preventable than the Average Swine Owner Realizes

Filthy and ill-smelling surroundings and food receptacles are an ever present menace to the health of any hog. They invite disease, and once the disease is contracted, do more to help spread it than all other causes.

ARMCO IRON HOG TROUGHS



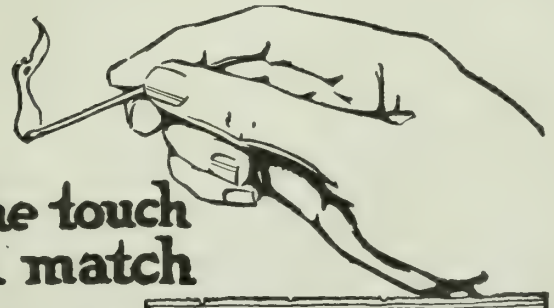
because of their smooth, heavily galvanized surface, can easily be kept bright and sanitary. There are no cracks or crevices in which germs can lodge and multiply, no rough or sharp edges to injure the animals, and no leaks to cause sloppy and unhealthy pens. Built from a highly rust-resistant material—ARMCO IRON—they are permanent, and on account of their light weight can be transported with ease from one place to another.

AN OUNCE OF PREVENTION IS WORTH A POUND OF CURE. The expense of installing our troughs is comparatively small—the results obtained will more than justify your good judgment.

Troughs can be furnished in sizes to suit your requirements, and will fit into almost any type of frame. Further particulars and literature on request.

California Corrugated Culvert Co.

Stock Tanks. Dipping Troughs.
Watering Troughs. Storage Tanks.
417 Leroy St., Los Angeles. 406 Parker St., W. Berkeley.



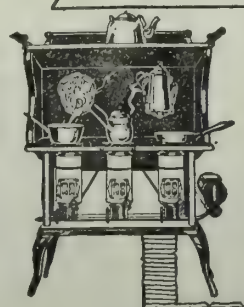
At the touch of a match

All the conveniences of gas—better cooking and a cleaner cooler kitchen

Bakes, broils, roasts, toasts. More efficient than your wood or coal stove, and costs less to operate. Your cooking is better, too, because you have heat-control like a gas stove.

NEW PERFECTION OIL COOK-STOVE

For Best Results Use Pearl Oil



The New Perfection gives a clean, odorless, sootless flame because of the long blue chimneys. Cuts out the drudgery of wood or coal. *Keeps your kitchen cool.* In 1, 2, 3 and 4-burner sizes, ovens separate. Also cabinet models with Fireless Cooking Ovens. Ask your dealer today.

Standard Oil Co.
(California)

Poultry for Profit---Producing and Marketing.

WOMEN'S POULTRY INTEREST.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

The farm hen in California has been somewhat set aside in recent years for the automobile and other excitements. That was but natural, for farmers' wives and daughters like to have some outside diversions, and they need it too. But diversions, while they are pleasant and wholesome in moderation, don't keep the pot boiling; and farmers' wives and daughters are great hands for liking to give their men folks a full dinner-pail. So they are going back to the old pastime of raising chickens. This pastime is wholesome, profitable, moral, and gives toothsome dinners for the family while increasing the pin money for the women.

Need Clean Poultry Quarters.—The Press has given much space to the expert who wrote so well on the egg question. Every farmer's family should read and reread those articles on the betterment of the farm egg under the $7,000,000 heading.

If every one would be honest and keep poultry quarters clean, the farm egg would soon be placed among the best eggs from the large poultry plants that are run on sanitary principles. The fact that an egg has a shell that is supposed to keep it clean, is responsible for a great deal of neglect along the lines of cleanliness. But the shell is porous. It absorbs any foul odor or filth, and is nearly as easily contaminated as if it lay unprotected in the dirt.

That is one reason why we oppose the Chinese egg. We have all to eat at public restaurants and hotels sometimes, and we don't relish having to eat when we know these public places are using eggs that are produced under insanitary conditions. But people who live in glass houses should not throw stones, so we should make up our minds to keep the nests and poultry houses as clean as we would want to see them if we were the purchaser and the other fellow the producer.

There is no State in the Union where women can make good with poultry as easily as in California. An invalid, if able to walk around, will gain health and strength quicker in caring for a few fowls than by sitting in a rocker, thinking of her aches and pains.

Tending chickens is a panacea for aches and pains, because it occupies the mind and carries it into one of the most natural channels; that of helpfulness to something that lives and needs help. If a man has a sickly wife, the greatest kindness he can do is to buy her a few good chickens of a variety she admires and let her have room to keep them and raise a few chicks. Some women love flowers and they are good. I love flowers, but they never fill the bill; I like something I can talk to.

Eat Orchard Pests.—The farm is the natural home for poultry, and where a man has a five or ten acre fruit orchard and has but one crop a year the poultry makes an awful good side line to help out. In an orchard hens pay threefold, namely to provide meat and eggs for the family table, and groceries, and at the same time enrich the land. You can soon see where the poultry have run in a prune orchard; the leaves are a dark rich green, no faded out, sickly green, but a color that tells of vigor and life in the tree. Fruit growers, above all other farmers should have a good flock of hens; they keep insect pests down to where they can't hurt much. With a little feed they make eggs out of the pests and they help out amazingly between crops. I know, for I've been there, and will say that my poultry always kept me clear, so that I did not have to take the first price a buyer offered.

Debtor Makes Fruit Prices. The fruit crop was mine till the right price was offered; it's the man who gets in debt that makes the price of fruit, and his name is legion. Keep out of debt, farmers, and you can name your own price—presuming, of course, that you know the law of supply and demand. I always practiced the keep-out-of-debt game on crops, never mortgaged a grain crop in Dakota; we always went without what we could not buy for cash and kept the crop clear; then if a prairie fire got it or hail or one of the many things that do take grain crops, we were just where we stood before and all we had to do was either starve or hustle. We generally hustled, and if it had been absolutely necessary would have rustled before starving.

Debt is almost as bad as war; it holds the family in bondage; it's better to raise a flock of fowls and do a little hustling.

DUCKS MOLTING.

To the Editor: How long does it take ducks to molt? They began last year, about the first week in July. I feed alfalfa, bran, middlings, sand, shells, blood, and meal when they are laying; but when they stopped I discontinued the latter. I gave several doses of oil cake meal.—S. M. F., Richfield.

[Answered by Geo. H. Croley.]

[There is no way to determine, with any certainty, just how long it requires for any fowl to molt; your ducks may require two or three months to complete a new coat. The length of time is determined by probably not less than one hundred variations of conditions, including feed, previous care, and climatic disturbances. If you are not particular as to the time they take to molt, provided you get lots of eggs for table use—but not for breeding purposes—we advise keeping them almost entirely out of the sun, feeding the best egg-producing feed with lots of greens, using every means to induce the ducks to eat all they can possibly digest. The ability to form new feathers and at the same time lay eggs is determined by the amount and quality of the food consumed. To keep them to eat enough, observe the flock.

If the feed you mentioned induced satisfactory egg-production, feed it right along, but feed often; don't let them get "stalled on their feed." Oil cake meal—a small amount every day—is desirable in that it not only seems to directly assist the process of molting, but will render the feed more appetizing.]

Fat and flesh are not the same thing. Some fat is necessary to fowl, but not overmuch.

DROPSY IN HEN'S ABDOMEN.

To the Editor: I have some Black Minorca hens, 4 years old. In the abdomen there has formed a big bag full of thick water. Does it affect the flesh of the hen in any way? —A. E., Kingsburg.

[Answered by Geo. H. Croley.]

[Dropsy is almost always the result of a run down condition. In fowls, it is usually caused by an excess of starchy or fattening foods, in connection with a lack of sufficient exercise. The fowls may be relieved by inserting a hollow needle through the skin, letting as much of the liquid escape as possible. Before using the needle, and after operating on each fowl, put the needle in boiling water. Permanent relief can only be secured through a general improvement of the health of the fowls. They should have more nitrogeneous food, and less fat forming material. When the trouble is not serious, the following remedies assist in giving temporary relief, without tapping with a needle: Two

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No other roofing has been imitated as much as RU-BER-OID. There is no connection whatever between RU-BER-OID and the roofings called "Rubberoid." More than 300 imitators have referred to their roofing as "Rubberoid," solely to make the buyer think he is getting

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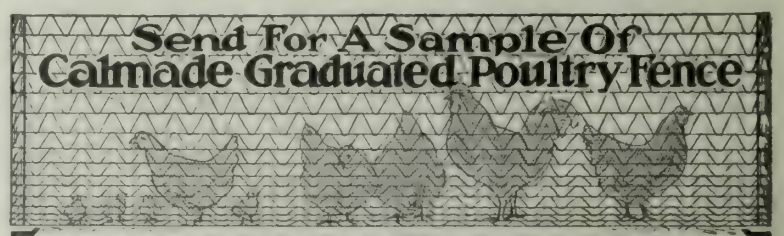
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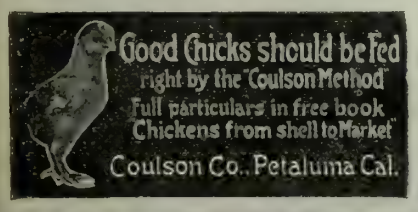
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teaspoonfuls of nux vomica in one gallon drinking water, or 4 grains arsenate of iron to one gallon of water. In case the needle is used, substitute for the above remedies, 4 tablespoonfuls sulphate of magnesia to each gallon of water for one week and then change to iodide of potassium, using 80 grains (1-6 of an ounce) to one gallon of drinking water. Fowls that have had dropsy should never be used for breeding. The flesh is unfit for food while the fowls are ill, but after complete recovery, it is perfectly wholesome.]

U. S. CONTROLS INTERSTATE SHIPMENTS OF BAD EGGS

[By Geo. H. Croley.]

Shipments containing more than five per cent of bad eggs are regarded by the U. S. Dept. Agr. as a violation of the Food and Drug Act.

"In the opinion of the Department, eggs which contain yolks stuck to the shell, moldy eggs, black spots, mixed rots, addled eggs, black rots, and any other eggs which consist wholly or in part of a filthy, decomposed, or putrid substance, are adulterated.

"The investigations of the Department have shown that it is commercially practicable, by the methods of candling, to eliminate from any given shipment most of the eggs of the kinds which the Department regards as adulterated. It is not the practice of the Department, however, to base proceedings under the Food and Drugs Act on shipments of eggs unless there are present larger percentages of bad eggs than are ordinarily present in recognized commercial grades of candled eggs. The Department is informed that cases of eggs are not allowed to receive even the lowest candled egg grades if they contain more than one and one-half dozen or 5 per cent of bad eggs. Country shippers who are not certain of the freshness of their eggs should candle them before shipping them in interstate commerce."

POULTRY THIEVES.

As a protection against thieves, who have stolen $10,000 worth of fowls in four months, Petaluma poultrymen recommend passage of an ordinance requiring poultry dealers to keep a record of all purchases. The following items would comprise this record: Date of purchase; residence of person selling fowls; breed, as nearly as possible; number of fowls of each breed; approximate age of fowls; if person selling raised fowls. In case person selling purchased fowls, name of person from whom they were purchased; the records must be kept open for inspection by officers of county or cities.

WHITE DIARRHOEA.

To the Editor: My hens are dying from white diarrhoea.—H. C. J., Dos Palos, June 2.

[See issue May 27.—Ed.]

WING FEATHERS GROW TOO FAST.

To the Editor: Wing feathers on young chicks grow but feathers on body do not.—T. R., Milpitas.

[See page 626, issue May 20.]

Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired Heavy Winter Layers. W. C. Smith, Prop., Corning, Cal.

CLOSING OUT—FOR SALE CHEAP—3 Electric Incubators, 576 egg capacity each. 2 Electric Incubators, 144 egg capacity each. 16 Electric Brooders, 150 chick capacity each. Complete with circuit breakers, thermostats, connecting sockets, etc. Address T. R. Jacobs, P. O. Box 395, San Mateo, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396, Los Gatos, Cal.

BABY CHICKS—We will hatch during May and June, so order now and get them when you want them. All good strong youngsters from good layers. White and Brown Leghorns, Barred Rocks, R. I. Reds and Black Minoreas. Campbell Poultry Ranch, Campbell, Cal.

PLACE YOUR ORDER NOW for May delivery of White Leghorn Chix from Jackman's purebred, heavy egg-producers. You get the best at lowest prices. $8 per hundred, $75 per thousand. Sunnyside Poultry Farm, R. 2, 1610 Vine St., Sacramento, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., Inc., Poultry Supplies, San Francisco.

PREVENT WHITE DIARRHOEA—White Plague of the Chicken Raiser. No drugs. Grow it yourself. Tried, sure remedy. Send $2.00 for plain instructions. J. Clemons, 379 Noe St., San Francisco.

PLACE YOUR ORDERS with the SANTA CLARA HATCHERY for the different breeds of baby chicks and baby ducks. Joseph A. Bihn, Prop., San Jose, Cal., Route 6, Box 336C.

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WHITE LEGHORN BABIES and Hatching Eggs from Hoganized, heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorcas, White Leghorn, stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

BABY CHICKS—Strong and healthy, from high-bred free-range White Leghorn stock. Prices on application. Western Hatchery, W. S. Waldorf, Petaluma, Cal.

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WHITE WYANDOTTES—Blue-ribbon winners. Eggs, $2 to $5. Chicks, pullets, cockerels. R. W. Stawetski, Route 2, San Jose, Cal.

TRAPNESTED LEGHORNS—White and Buff Stock Eggs, chickens. Arthur R. Schroeder, Box 179B, Mountain View, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

EASTMAN'S BRED TO LAY Barred Plymouth Rocks. Fairmead Poultry Farm, Fairmead, Cal.

BEST FOR YOU—Hogan Tested Leghorns and Barred Rocks. C. W. Hinrich, Palmdale, Cal.

TURKEYS, DUCKS AND GEESE.

INDIAN RUNNER DUCKS—Imported Stock. Absolutely Pure-bred. Tested Layers. Breeding pens. 6 ducks and 1 drake, or separately. Fancy stock at reasonable prices; hatching eggs. W. R. Anderson, Lafayette, Cal.

HART'S BRONZE TURKEYS AND EGGS—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

EGGS FOR SALE from my prize-winning Mammoth Bronze Turkeys. Now $2 per doz. N. E. Mulick, Willows, Cal.

PEKIN DUCK EGGS for hatching, $1.00 per dozen. L. D. Collins, R. F. D., 540, Denair, Cal.

PHEASANTS—Golden and Ringneck. Eggs from April on. T. D. Morris, Agua Caliente, Cal.

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LEADING RABBITRY IN AMERICA—Flemish Giants and New Zealands. Cut your living expenses. Catalogue free. Empire Rabbitry, Empire, Cal.

BELGIAN HARES—Young stock for sale. R. St. Helena, Cal.

Classified Advertisements

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SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS. 306-8 Howard St., San Francisco.

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FIELD GAS ENGINES—One 20 h.p., one 15 h.p. with magnetos. Cheap. Motor installation cause of selling. The Phalanx Company, 516 Chamber of Commerce, Los Angeles, California.

WE HAVE ONE SECOND HAND Southwick Horse Power Hay Press, in good condition. If interested, write for price. Dixon & Griswold, 146 North Los Angeles St., Los Angeles, Cal.

FOR SALE—Threshing Machine, 16x32-inch cylinder. Self-binder. 5 ft. cut. Cheap; in good condition. Trade for cows or heifers. Address T. G. Hester, Morgan Hill, Cal.

SPECIAL FOR CAMERA OWNERS—Roll films developed FREE. Secret process produce fine pictures. Prints 1c up. Send for samples. Sunset Studios. San Diego, Cal.

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TO REDUCE THE HIGH COST of living, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 1006 Clay St., San Francisco.

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FOR SALE—Complete canning plant. Used one season. Capacity, two tons per day. Address C. H. Drake, Calistoga, Cal.

TREES AND PLANTS

AVOCADO TREES for sale, fine field-grown budded Ganter and Harman variety. $1.00, $1.50 and $2.00. Magnolia Nursery Whittier, Cal.

AVOCADO SEEDLINGS FOR SALE—Also all varieties of Budded Avocados. Newberry-Sherlock, R. F. D. 2, Pasadena, Calif.

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WANTED.

WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. K. Humphrey, Principal, Stockton, Cal., Box 704.

USED WINDMILL in good condition. C. L. Clawson, Fairmead, Cal.

LAND FOR SALE

COLVILLE INDIAN RESERVATION, WASHINGTON, OPEN FOR SETTLEMENT—Drawing July 27th. About 500,000 acres. Fruit, Farm and Dairy land. Complete Sectional Map and Description. Postpaid, $1.00. Soldiers, sailors (or their widows) of the Civil or Spanish Wars may register by Agent. Write us for blank forms, which we will furnish free. SMITH & McCREA, Room 108, Eagle Bldg., Spokane, Wash.

STATE LAND NOW comng on market for first time. LISTS any three counties and services until 1917, $5. COUNTY Sectional MAPS showing GOVERNMENT Land. $2.50 ANY County. STATE Map showing 600,000 acres SCHOOL Land, $2.50. June Booklet, FREE. JOSEPH CLARK, Sacramento.

FOR SALE—Relinquishment Coachella Valley; cleared, level silt, no alkali. Dates, figs, olives, almonds, grapefruit. Early gardening. Box 57, Palm Springs, Cal.

WANTED to hear from owner of good farm for sale. Send description and cash price. R. G. [illegible], Minneapolis, Minn.

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For Every Purpose NEW Threads & Couplings Hot Asphaltum Dipped
Second Hand and NEW
Screw Casings Fittings and Valves Guaranteed for Pressure
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The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends: As the season runs along, the popularity of checks seems to be unabated. Not only the always good black and white, but green and yellow, blue and black and other combinations are much in evidence. They make very nobby, striking looking suits, especially this year when the skirts are so short and the shoes are so pretty. But the extreme combinations are only for the women who have many changes — the more conservative blues or grays or dark greens are better style for those of us who must wear a suit a long time and for many occasions.

I have seen a number of well-dressed women wearing silk one-piece dresses of dark striped patterns. These were worn without any coat and with a neck-piece of fur. I had thought perhaps our cool bay climate was responsible for the wearing of furs through the summer months, but a friend of mine from Chicago told me they wore their furs there all last summer—if it was too suffocatingly hot to wear them around the throat, they were carried over the arm. So in that locality, it is style, rather than comfort, that makes women wear fur in mid-summer.

White suits are always pretty, especially for young people, and here in California a substantial white suit can be worn for dress the year round—this year there have been many combinations of taffeta and cloth.

Shoes are wonderfully attractive—in all the light shades and combinations of light uppers and black vamps, they are a joy to look at. The white shoe is much in evidence and now that there are such good cleansers on the market, there is no excuse for their not looking clean and nice. I know one college girl who wore white shoes to school last fall who cleaned them every night. It was just as much a part of her toilet as washing her face.

Colored stockings worn with low white shoes should harmonize with either a tie, hair ribbon or sweater to be nobby.

The white corduroy tam-o-shanters are being shown again for use in machines. They are made with a solid band part of the way round the head and elastic the rest of the way, so that they can fit any size head.

The white middy hat is always good for outdoor use and it is quite commonly seen in machines. Turned down all the way around, it shades the eyes and does not catch the wind. The custom of wearing flying veils in machines is not as prevalent as it was—now most women wear small hats or caps and face veils.

Silk and lisle gloves seem to be more worn this spring than for some years. They are very much more comfortable for hot weather wear than kid and they can be washed with soap and water when soiled. Some of the best makes are guaranteed against the tips wearing out while the rest of the glove is in good condition and if that happens, the glove will be replaced. Yours devotedly, **Rosabella Best.**

DELICIOUS FRUIT DROPS.

Fruit drops can be made any desired flavor, but cherries, raspberries and currants are particularly good and attractive in color. Crush the fruit and put through a sieve. To each pint of strained fruit, add 1 pound of granulated sugar and cook slowly until very thick. Care must be used that it does not scorch. Drop small amounts on waxed paper and let dry. These are very delicious, and as wholesome as any candy can be.

THE INFLUENCE OF THE VOICE.

American women are criticised the world over for their shrill, harsh voices. It is much to be desired for one's own pleasure and that of their friends, that a low, subdued but clear voice be acquired. If the effect upon our friends of a disagreeable voice is unpleasant, how much more so must it be on the sensitive ears of little children. Every mother owes it to her family as well as to herself to cultivate a low, firm tone. It is not only soothing to very small children but has the effect of causing older ones to be more attentive and observant. No household can be quiet and orderly where commands are shouted at children, for children give quick obedience only where they feel the quiet, controlling power of the mother, which is evidenced by self-contained, careful speech.

CRYSTALLIZED FRUITS.

One of the Rural Press subscribers, Mrs. H. B. Monteith, of Santa Rosa, sent the office a very fine box of crystallized fruit consisting of figs, strawberries and orange peel that she put up herself. She advertises to sell the recipe and send samples to interested parties. This might prove to be an interesting as well as lucrative business for women who have a little spare time. Good crystallized fruits sell in the stores at the price of the very best candies and as they are more wholesome, there should be a good demand for them. Even if one had no desire to manufacture this product commercially it would be worth while to be able to make it for friends and family.

TO REMOVE PAINT.

To the Editor: How can I best remove dried paint from windows and bathtub?—R. H., San Bruno.

Any of the following are recommended for removing paint: gasoline, turpentine, chloroform, oxalic acid, alcohol, caustic potash, salsoda and quicklime. There is also a liquid paint remover that can be purchased at any hardware store that will soften the paint, so that it can be scraped off with a knife.

CLOSET SPACE.

The available space in every closet can be doubled by having either a curtain pole or gas pipe fastened across the closet, the ends resting in sockets. Place it about 10 inches from the wall it parallels, and use wire or wooden hangers for the garments.

INQUIRY FROM ARGENTINA.

To the Editor: I have read with interest a little article on your page called "Shine the Silver." In this country, those "Silver clean" pans are not to be had and I have been wondering if an ordinary zinc pan or dish would do. Would you mind letting me know if it is the same and how much salt and baking soda to put to the litre of water.

We have received the Pacific Rural Press for many years and think a great deal of it.—A. M. K., Argentine Republic.

Directions for the use of Silver clean pan are as follows: for each quart of water, add one teaspoonful of common baking soda and one tablespoonful of salt. These proportions do not need to be strictly observed. As to the use of the zinc dish, why not try it on some silver. It could do no harm.

OF INTEREST TO WOMEN.

A number of courses in which women are vitally interested will be given at the Summer School in Berkeley this summer. One is on "Food Conservation," another is on "Practice in Cooking," still another is "Practice in the Preparation of Meals," and there will also be training in the planning of diet so as to make people happy, contented and well.

LINGERIE PINS.

The use of lingerie pins is very general but many people object to their showing through a thin waist. A very good way to obviate this difficulty is to crochet a simple rosette and fasten the small safety pin to the back of it.

PARSLEY EASY TO HAVE.

Every kitchen ought to have fresh parsley at hand, for soups and gravies, and for garnishing dishes of meat.

If the yard is not convenient, a large flower pot will do. Or even a box. Some should be kept growing all the time. Five cents' worth of seed will last years unless the parsley is too liberally cropped. In a yard, it will grow practically without cultivation.

SHOWING THEIR SPEED.

She looked with some apprehension over the ginghams spread before her.

"These don't look like fast colors to me," she said.

"Indeed they are, ma'am," answered the clerk earnestly. "You just ought to see them when they begin to run."

FLORAL DEPARTMENT.

[By Geo. N. Tyler.]

Chrysanthemums that were planted out in early May are now in strong growth—if you have not staked them, do so at once, using the split shakes as described in former article. They also like water on the foliage and on hot days should be sprayed two or three times and be sure and give them a good spraying after sundown; they are one of the plants that like spraying in the evening, and besides you keep down black and green aphis, one of their worst enemies. Singles and pompons that you want for sprays should be headed up to July to make them stocky and also make more flowers. You can still put in cuttings up to July and get good flowers, but the stems will not be so long.

Pelargoniums are making strong growth now and will shortly have a second crop of flowers. It is time now to think of getting your bulbs for fall planting; make out a list of what you want and send it in to your florist and he will fill your order as fast as the different varieties arrive. By ordering early you get better and stronger bulbs, and it doesn't do any bulb good to remain long out of the soil.

Dahlias that are blooming or showing flower buds should be given a mulching of half rotted manure; and give them abundance of water through this manure. To do their best they should have such an abundance of water that if you break off a stem the hollow part will be filled with water.

Early planted Gladioli are now coming into flower. Give them an abundance of water and as soon as the first flower opens, cut the stalk leaving three or four leaves, and your bulb will not be injured in the least. Every bud will open in the house, and the old flowers will not dry up or wilt as they do when left on the plants and allowed to dry out.

You can do budding on roses this month and get good results; also put in all the cuttings you can of the half ripened wood, and they will bloom next spring.

Friesias, to bloom for Christmas, should be planted in July. Friesia Purity is the best on the market, although there are some new novelties in colored ones being sent out, but the prices are prohibitive. There is a lavender tinted one and also a strain called rainbow. In another year or two they will be cheaper. In potting or boxing friesias, use one-third thoroughly rotted manure in your compost, put six to ten bulbs, or rather cones, in a five-inch pot, give them a good watering, then plunge the pots in the ground and cover with a board; do not let them dry out or they will not bloom.

After the growth starts they should be given some sun, but still be careful with them and do not let them dry out. Further cultural directions will be given later.

Wire "vine staples" make prettier and more permanent vine supports than leather or string.

THE CITY FARMER.

I read the seedsman's catalogue
With eyes that open wide.
I'm frank to say I'm all agog
At what I find inside.

The prize tomatoes fairly seem
To burst their ruddy skins.
The radishes and parsnips gleam
Like newly burnished tins.

I am enraptured with the corn.
I love the early quince.
The cauliflower might well adorn
The garden of a prince.

I read the book with greatest heed
Its final page I scan
And then I buy a turnip seed
And plant it in a can.

—Ex.

FAMILIES.

A family will do you a lot of good, and it is very fortunate to be born into a family, rather than into an asylum.

When you are young you are always bumping into your family. You start out 'cross-lots to El Dorado, and your little sister gets in your way. Perhaps El Dorado is a cookie jar, and your little sister has taken the last cookie.

It is not until years later that the comforting thought comes to you that it is merely because you had a little sister and a mother and a father, that there was such a possibility in the world as a cookie, for you. Orphans do not have cookies between meals. They eat standardized meals, out of standardized dishes, at standardized hours.

A family teaches you that roses grow on thorny stems, but that roses grow close to home. It also teaches you that with every delight there is a division table. At the schoolhouse they teach the multiplication table; at home they teach the division table. A jar full of cookies must be divided by five.

And the nice thing about it is that a family teaches this very hard, relentless, unescapable rule of life in a very soft way. Mother rubs you soothingly, and says, "That's a nice boy, George. That's the last cookie, and I would give sister half of it, that's a nice boy."

Mother kind of eases half a cookie away from you for little sister.

You are lucky that somebody didn't punch your face and take the whole cookie.

Still, everybody in a family is hard on each other, for the reason that they rehearse on each other. A family is all behind the scenes; there are no calcium lights or electric spotlights on your little sister when she comes down to breakfast in her nightie. You think it is careless; you hate little sister's bare feet; yet when you grow up you will pay money for a theatre ticket to see Marguerite Clark's bare feet. That is funny, too, because there is a whole lot more naivete about little sister's bare feet than there is about anybody's commercialized bare feet.

But a family is all behind the scenes, and this teaches you that to everybody, on street cars, or in stores, there is a behind-the scenes side. Knowing your own father and mother, and how kind they are, you give stolid-faced old men and old ladies on the street car credit for some kindness at heart which they don't show on the surface.

And knowing the utter uselessness of your 16-year-old sister, you are suspicious of the beauty of other 16-year-old queens. You can see them lolling late in bed. You know women.

And then you see responsibility spring up in little sister. By and by she takes a broom seriously. This teaches you that there is possibility in every clod.

It is a great thing that we cannot run away from our families. (It is only in books that any boy ever gets more than 45 miles away from home before he ought to). All our lives life is pulling us back and telling us to take another look at our family, and the kaleidoscope has always changed.

In time we get father and mother on their proper pedestals, and no heroes in the world are so heroic; and, in time, we come to classify our barbarous little brothers and big brothers and big and little sisters, all as human beings.

A family is one of the finest things into which to be born.—Selected.

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Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS

San Francisco, June 14, 1916.

WHEAT.

The local wheat market is very firm, and California club has been marked up a little since last week, other grades being scarce. The firmness, though due largely to the waterfront strike which cuts off supplies from northern and interior points, is in line with Eastern markets.

Cal. Club, ctl. .....$1.65 @1.70
Northern Bluestem ...1.87½ @1.90
Northern Red ..... 1.85 @1.95

BARLEY.

New barley is now coming in fairly well, and the average quality is said to be unusually good. The new offerings, together with reports of a comparatively large holdover from last season, have caused some weakness, and both grades are lower locally. Buying, however, is now quite active in the country, and new grain is beginning to move East by rail.

Shipping, ctl. .....1.35 @137½
Choice Feed, ctl. ...1.27½ @1.30

OATS.

There is little new in this department, as no new stock of any consequence has appeared, and old offerings are limited, with no active demand.

Red Feed .....$1.40 @1.42½
Whte ..... 1.55 @1.60

CORN.

Eastern corn is moving about as usual to the local mills, with little demand elsewhere. Egyptian and similar grains are in good demand in many parts of the country, but inferior offerings will hardly bring the prices quoted.

Eastern Yellow, ctl ....$1.80 @1.85
Milo Maize ..... 1.40 @1.45
Egyptian ..... 1.45 @1.50

BEANS.

Not much movement in most lines at present; recent sales have left stocks very light; trade not much inclined to take hold at these prices. The recent advance, however, is quite firmly held, and any renewal of demand would no doubt send values up another notch. Large whites, indeed, are already held at an advance, being cheap as compared with small whites. Limas, however, are receiving more attention than anything else at the moment. This variety moved slowly for a long time, but stocks held by the trade are cleaning up, and the extreme prices of other varieties have given them a better position. Purchases for Eastern shipment have been very heavy in the last fortnight, resulting in a sharp advance in values.

(On wharf, San Francisco.)

Bayos, per ctl. .....$5.00 @5.25
Blackeyes ..... 2.90 @3.00
Cranberry Beans ..... 4.85 @5.10
Horse Beans ..... 3.00 @3.25
Small Whites (south) .. 7.00 @7.10
Large Whites ..... 6.50 @6.70
Pinks ..... 5.10 @5.25
Limas (south) ..... 5.10 @5.20
Red Kidney ..... 6.50 @6.75
Mexican Reds ..... 4.90 @5.25
Tepary Beans ..... 4.00 @4.50

HAY.

All quotations are now on new crop hay, which is coming in freely, old stock being about cleaned up. Though increasing, arrivals have been curtailed by the river strike; and the same trouble has stopped shipments to Hawaii and coastwise ponts. The harvest is pretty well over in many districts, and baling is actively under way, while many rail shipments are leaving the interior for Nevada, etc. Arrivals here show very fine quality, and conditions have favored an unusually high-grade harvest. This has caused an easier feeling in wheat hay, while wild oats and barley are higher. Local trade is quiet, partly for actual lack of consuming demand, and partly due to the belief among consumers that prices will be lower as receipts increase. Offerings of alfalfa are light.

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, Cal., June 12, 1916.

Shipments of deciduous fruit increasing; apricots will be lighter from now on. Active demand for all varieties, especially plums and late cherries. Practically all the cherries, however, are now cleaned up except a few cars remaining in the Santa Clara Valley.

Unprecedented prices are being paid for fancy Japanese plums and inquiries are numerous for pears. The first Bartletts have already been shipped from the State, which is the earliest that has been known in years.

The demand for fruits is more active east of Chicago than it is west, which would indicate that our prices are too high for the smaller markets and as soon as the movement is heavier, prices must necessarily be lowered to conform with conditions and to put the fruit into consumption.

California has had practically no competition from the East as yet, but Georgia will shortly be shipping, and this may affect our peach prices on the Atlantic seaboard; but with it all we anticipate a brisk demand and high prices, though there will be a slight easing off within the next ten days.

Prices for the week:

Chicago — Royal apricots averaged$1.55; Clyman plums, $1,17; Climax, $1.78; Beauty, $1.70; Formosa, $1.60; Comet pears, $1.50; Kounce, $1.70.

New York—Royal Anne cherries averaged $1.80; Bing, $2.27; Oregon, $1.87; Republican, $1.95; Tartarian, $1.75; Royal cots, $1.80; Clyman plums, $1.25; Beauty, $1.77; Formosa, $2.00; Climax, $1.85; Tragedy, $2.40; Alexander peaches, 95c.

Boston — Republican cherries, $2.07; Bing, $2.35; Annes, $1.90; Beauty plums, $2.25; Clyman, $1.65; Formosa, $2.45; Apricots, $1.70; Alexander peaches, $1.35.

[Total shipments to date 787¾ carloads as compared with 360¾ to the same date last year.]

No. 1 Wheat .....$12.00 @13.50
No. 2 ..... 9.00 @11.50
Tame Oats ..... 12.00 @15.00
Wild Oats, new ..... 10.00 @12.00
Barley, new ..... 10.50 @12.50
Alfalfa, new crop ... 8.00 @12.00
Stock Hay ..... 7.50 @ 9.00
Straw, per bale ..... .25 @ .40

FEEDSTUFFS.

Rolled barley is lower in sympathy with the whole grain, and oats also are easier. Alfalfa meal has dropped sharply, and no alfalfa-molasses meal is offered.

(Wholesale prices, per ton, carload lots, San Francisco.)

Beet Pulp, per ton ..$22.50 @23.50
Alfalfa Meal, per ton. 17.50 @20.00
Alfalfa Molasses Meal, per ton ..... Nominal
Bran, per ton ..... 28.00 @29.00
Oil Cake ..... Nominal
Cocoanut Cake or Meal 23.00 @25.00
Cracked Corn ..... 40.50 @41.50
Mddlings ..... 35.00 @36.00
Rolled Barley ..... 28.00 @29.00
Tankage 45.00
Rolled Oats ..... 29.00 @30.00

VEGETABLES.

Offerings in several lines of garden truck are running rather light, and values are well maintained, with some advances. Good string beans are scarce, and everything in this line is higher. Values for green peppers are well maintained, and tomatoes also are comparatively high, with little really good stock available. Rhubarb has stiffened up a little, with only moderate offerings, while the top price of asparagus has been marked down. The best offerings of green corn are doing better, though there is plenty of ordinary stock.

String Beans, lb ..... 4 @ 7 c
Summer Squash, box..60 @75 c
Peppers, bell, lb .....15 @20 c
Rhubarb, box, bay ....65 @90 c
Asparagus, box ..... 1.25 @2.25
Lettuce, small crate ...50 @65 c
Eggplant, lb .....10 @15 c
Peas, lb. ..... 4 @ 5 c
Tomatoes, crate .....60 @90 c
Green Corn, doz .....15 @35 c
Okra, lb .....20 @25 c

POTATOES AND ONIONS.

Oregon potatoes hold steady at the recent advance, and new river stock is firm. Arrivals from that district are comparatively light, and include some very attractive stock. Onions are quite firm, and new local stock has been marked up. Australians are still offered in a limited way. Fancy garlic is higher.

New Potatoes, ctl. .....$1.75 @2.25
Oregon Burbanks ..... 1.90 @2.10
Onions, red ..... 1.75 @2.15
Australian 2.50
Garlic, new crop, per lb ..5 @ 8c

POULTRY.

Offerings are ample, both from local and Eastern points, but good stock is readily disposed of. Large broilers and both grades of hens have been marked down a little, but are steady at the new prices.

Broilers, 15 lbs. to doz. and less, lb. .....21 @22c
do, over 15 lbs. to doz ...23 @25c
Fryers .....25 @30c
Hens, extra, per lb. .....19 @20c
Small .....15 @17c
Smooth Young Roosters, per lb. .....25 @28c
Squabs, per doz. ..... 2.00 @3.50
Geese, per pair ..... 2.25 @3.00
Ducks .....15 @16c
Old .....14 @15c
Belgian Hares ..... 9 @10c

BUTTER.

Offerings have increased again this week, and with the vacation season on the local street demand is limited. Prices have accordingly dropped a little, though no continued depression is likely in view of conditions in other markets.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	26	26	26	25½	25½	24½
Prime Firsts	25	25	25	25	25	24
Firsts	25	25	25	24½	24½	23½

EGGS.

Arrivals for the last week have been rather large, but there is a strong shipping demand, especially for the south end of the state, which has taken up all surplus lots at a slight advance.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	25	25	25	25	25½	25½
Sel. Pullets	23	23	23	23	23	23

Special Livestock Market Report.

Heavy cattle may be in better demand during the next two or three months, though they are too plentiful just now. Prices are being held however. More than 2-3 of the cattle on the Portland market were from California, ranging a little lower at $8 to $8.25.

Hog receipts in San Francisco are letting up; they were more plentiful in Portland at lower values than last week.

Sheep are slightly stronger at San Francisco, enough to raise the lamb quotations, though there is no great demand for more than are coming. They have been scarce at Portland.

Wool holds strong as last week with a rise on Mendocino staples. London sales closed 5 per cent higher on fine wools but closed at last sales prices on coarse staple. Australian sales are postponed indefinitely as the embargo prevents shipment elsewhere than to England.

CHEESE.

The market continues firm, with a good demand, and notwithstanding large arrivals from the East, both local grades are higher.

Y. A.'s fancy .....16 c
Fancy Calif. Flats, per lb ...15½c
Monterey Cheese .....16@17 c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	27	27	27	27	27	27
Eggs	24	24	24	24	24	24

DECIDUOUS FRUITS.

The comparatively easy price of berries is bringing a better movement, but loganberries have dropped sharply, on heavy arrivals. Only strictly fancy strawberries will bring the top figure, most offerings being easy. Old apples are still a factor in the market, while green stock is easier, with increased supplies. Cherries are stiffening up a little, shipments from various sections being lighter, especially of really good stock. Royal Annes are especially firm. The best apricots have been marked up a little, and everything in this line is steadily held, with a good demand. Ordinary peaches have declined, but fancy stock remains fairly firm. Black figs have dropped sharply, and cantaloupes also are much lower. Plums are offered in several varieties, but the general range is unchanged.

Currants, chest .....$4.00 @5.00
Loganberries, chest .... 2.50 @3.00
Gooseberries, lb ..... 3@6 c
Blackberries, chest .... 4.00 @5.00
Raspberries, chest .... 8.00 @10.00
Strawberries, chest ... 4.50 @10.00
Large Whites ..... 6.50 @6.70
Apples, old ..... .75 @1.25
green, box ..... .65 @ .75
Cherries, black, 10-lb. bx 1.00 @1.25
White, do ..... .75 @1.25
per lb. black ..... .08 @ .11
White ..... .05 @ .07
Apricots, crate ..... .75 @1.10
Peaches, crate ..... .60 @1.00
Figs, black, box .....1.25 @1.75
White .....1.25 @1.50
Plums, crate ..... .75 @1.00
Cantaloupes, standard crate ..... 1.50 @1.75
Watermelon, lb ..... 2 @2½c

DRIED FRUITS.

The dried fruit market remains fully as firm as last week, and packers appear to be taking more interest, though they are not as a rule going in very heavily, and still refuse to meet the views of the more optimistic growers. They cite many conditions which they believe will prevent the realization of the top prices asked, and there is certainly much to be said against getting prices too high, even if it is possible to do so temporarily. On the other hand, crops in practically all lines are short, and the prices prevailing for shipping and canning fruit will greatly limit the amount dried in most varieties; while the general prosperity in consuming districts East may warrant higher values than usual. Apricots are now being bought at as high as 13c, and little can be had below 12½c, while many growers are holding for 15c. New York reports an active movement among packers to buy back from the trade contracts sold earlier at much lower prices. There are still a good many old peaches, but they are firmly held at about 5c; while new crop peaches are being contracted as high as 6c. Canning prices generally are high.

Apples, old crop .....5½ @6 c
Apricots, per lb, 1916.12½ @13 c
Figs, white, 1916 .... 6½ @ 6¾c
Black, 1916 ..... 5 @ 5½c
Calimyrna, 1916 .....9 @10 c
Prunes, 4-size basis, 1915 5 c
1916 .....5 @6 c
Peaches, old .....4¾ @5 c
1916 .....5¾ @6 c
Pears .....5 @6½c
(Associated Raisin Co. Prices)
Fancy Seeded, 16 oz. .....7 c
Choice Seeded, 16 oz. 6¾c
London Layers, 3-crown, 20-lb. box, 1916 .....$1.30
Imperial Clusters, 6-crown,

20-lb. box, 1916 ..... 2.75
Bulk, layers, 50-lb. box. 1916 2.75

CITRUS FRUITS.

The 27 cars Valencias sold in New York June 12 averaged $3.50 to $4.70. Three cars Navels averaged $3.35 to $4.30. The good demand for large sizes is interesting. Valencias are good sizes and fine quality. Lemons averaged $3.60 to $4.20. Cool weather has curtailed demand. Grapefruit averaged $2.50 to $4.25. At Boston large sized oranges were lower and lemons better; oranges averaged $3.70 to $4.35, lemons $4.50 to $5.00. The St. Louis market averaged $3.45 to $3.95 on oranges, $2.25 on grapefruit, and $3.35 on lemons.

The top figure on lemons in San Francisco has been shaded a little, but otherwise last week's figures prevail on all lines. The advance has tended to limit the local movement somewhat, especially as deciduous fruits are steadily becoming more plentiful, and oranges are rather quiet here.

Oranges, Navels	$1.75@3.15
Valencias	2.75@3.25
Grapefruit	1.50@2.50
Lemons, box	2.50@4.25
Lemonettes, box	1.50@2.00

HONEY.

Shipments of new honey are coming in steadily, and while there is still a good demand for desirable offerings, values show a little less firmness. Both grades of comb honey are much lower, as this class of goods has been very scarce for some time. Fancy extracted holds up well, but the lower grades have declined.

Water White, comb	13 @15 c
Amber	8 @10 c
Water White, extracted	8 @ 9 c
Light Amber, new	5 @ 6 c
Dark	4 @4½c

HORSES.

More horses are offered here this week than for several weeks previous, the sales including a lot of livery stock and a good-sized shipment from northern California, mostly heavy, attractive stock. The sales developed no particular change from recent conditions, however, this market being rather apathetic, and all but the most attractive horses are slow of sale. Values, however, are pretty well maintained. Large shipments are still going from country points.



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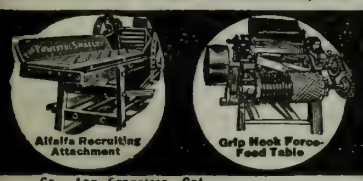
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Patented recutting attachment makes dandy Alfalfa Chop for fattening cattle, sheep, hogs and poultry. Needles leaves, stems and all without waste or injuring color of the hay. Sell your No. 1 hay and mill the off-grades for feeding. Make combination feeds from clover, rice straw, bean straw, pea vines, oats and rye, or dried cornstalks. Capacities 1200 to 2700 lbs. per hour. 500 to 800 pounds of meal per hour can be made with recutting attachment on Junior mill (operated with 6 to 8 H. P. engine.) Send QUICK for FREE Book.

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HORSES.

(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs and up	$ 250
Drafters, 1550 to 1650	150@200
Chunks, 1350 to 1500 lbs	150@175
Wagon horses, 1050 to 1350 lbs	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@ 75
Farm workers	50@100

LIVE STOCK.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)

Steers, No. 1	7 @7½c
No. 2	6¾ @7 c
Cows and Heifers	5¾ @6 c
No. 2	5 @5½c
Bulls and Stags	4 @4½c
Calves, light	7½ @8 c
Medium	7 @7½c
Heavy	6 @6½c
Hogs, grain-fed:	
100 to 150 lbs.	7¾c
150 to 250 lbs.	8¼ @8½c
250 to 325 lbs.	7¾c
Prime Wethers	7 @7½c
Spring Lambs, f. o. b. country points	$5.00@5.50

DRESSED MEATS.

(Wholesale prices to dealers.)

Steers	10¾ @11½c
Veals, large	12½ @13 c
Small	13 @14 c
Prime Wethers	14 @14½c
Spring Lambs	16 @17 c
Hogs	11 @12 c

WOOL.

(Prices paid in the country.)

Red Bluff, year's	25@27c
Sacramento Valley, y's	19@35c
Mendocino, year's	31@32c
Mendocino, 7 months'	26@27c
Southern, year's	18@21c
Southern, 7 months'	15@18c
Imperial Valley, year's	17@19c
Imperial Valley, 7 mos.	14@15c
Nevada	21@23c

WEEKLY BUTTER AVERAGES.
Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	28.60	28.00		28.20
" 9	25.33	26.66	26.00	28.10
" 16	27.50	27.83	26.83	28.16
" 23	30.66	28.25	30.66	28.50
" 30	28.66	36.33	28.00	36.66
Feb. 6	26.66	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25
" 20	29.00	32.00	27.16	32.00
" 27	29.10	30.90	27.00	35.25
March 6	27.00	24.08	25.25	24.16
" 13	24.66	29.91	24.00	28.83
" 20	23.00	28.33	22.50	27.16
" 27	22.91	28.50	23.00	28.08
Apr. 3	23.00	28.50	22.23	28.83
" 10	23.08	29.31	22.00	28.00
" 17	23.00	27.33	22.00	27.50
" 24	23.00	25.25	22.00	25.00
May 1	23.08	24.33	22.00	25.33
" 8	23.00	24.10	23.08	25.00
" 15	23.16	22.25	22.90	20.83
" 22	23.75	23.16	21.96	22.50
" 29	23.08	24.16	21.83	24.58
June 5	23.90	25.50	23.00	27.00
" 12	24.38	25.83	23.83	27.00
" 19	25.16		26.00	

WEEKLY EGG AVERAGES.
Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 30	28.16	36.33	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50
" 13	23.00	28.90	25.10	28.00
" 20	23.60	23.66	23.58	20.33
" 27	21.40	20.30	20.80	18.50
March 6	20.50	18.33	19.00	18.00
" 13	20.66	19.50	19.00	18.91
" 20	21.00	20.00	19.66	19.08
" 27	20.83	21.41	18.50	20.83
Apr. 3		21.75		21.00
" 10		22.00		21.00
" 17	22.00	21.16	23.08	20.91
" 24	21.80	21.83	22.25	22.58
May 1	26.16	21.00	22.00	22.58
" 8	23.33	21.20	22.00	21.41
" 15	23.58	24.58	23.00	25.66
" 22	23.58	25.46	23.00	25.00
" 29	23.50	25.33	23.00	26.50
June 5	22.50	25.00	20.70	24.41
" 12	22.00	25.00	21.00	24.16
" 19	22.00		20.09	

Publisher's Department

Mr. Frank Honeywell, publisher of this journal, left last Saturday on a business tour of some of the middle and eastern states. While in New York he will attend a meeting of the "Standard Farm Papers," of which organization the Pacific Rural Press is the western representative. Mr. Honeywell is expected in San Francisco again about the middle of July.

187 new names were added to our mailing list during the past week.



Le Grand McDonald, P. P. I. E. Junior Champion saddle horse. Foals by this sire and mares bred to him will be auctioned by the Bridgeford Co. June 20 in San Francisco. It is proposed to hold an annual auction of this company's saddle horses. There will be 25 in the first sale, many of them trained.

GRADE COWS OVER 50 POUNDS BUTTER FAT PER MONTH.

[Written for Pacific Rural Press.]

That grade cows can make about two pounds of butterfat per day for good farmers is proved by the following report of cows in the Gridley Cow Testing Ass'n, which produced over 50 pounds in May. Official Tester C. C. O'Hara sends us the report:

	Pounds Milk.	Per ct of fat.	Pounds Butter-fat.
C. Goetz, Tudor, Shorthorn	1593	4.6	73.3
J. H. Guill, Chico, Holstein	1643	4.2	69.0
W. J. Condon, Chico, Jersey	1159	5.7	66.1
J. H. Guill, Chico, Holstein	1761	3.5	61.6
J. H. Guill, Chico, Holstein	1938	3.1	60.1
S. C. Doin, Oroville, Shorthorn	1314	4.5	59.1
H. Berg, Marysv., Jersey-Shorthorn	1603	3.5	56.1
J. H. Guill, Chico, Holstein	1597	3.5	55.9
C. Goetz, Tudor, Jersey	1271	4.4	55.9
J. Froncathy, Tudor, Shorthorn	1172	4.6	53.9

The Holstein Friesian Ass'n of America met at Detroit June 7. They have about 9000 life members. There are about 300,000 Holstein cattle in U. S. owned by about 30,000 people. The Ass'n has $215,390 on hand and an annual income of $230,806. Movies of the P. P. I. E. Holstein exhibit were shown at the meeting.

Fresno union stockyards will be discussed again at a meeting of all interested at Fresno Chamber of Commerce July 19. D. O. Lively will address them. Considerable financing would be required for successful maintenance of the project.

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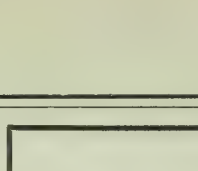
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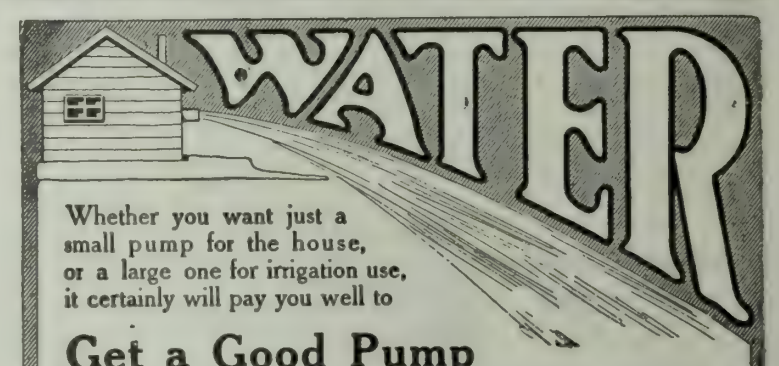
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SAN FRANCISCO JUNE 24, 1916. LOS ANGELES

Humboldt's Co-operative Cow Testing.

California's oldest and largest cow-testing association had over 3,800 cows last year, besides 1,000 withdrawn to form another association.

[Written for Pacific Rural Press.]

THE Ferndale Cow Testing Association of Humboldt county is seven years young. Perhaps that is the most apt way of describing California's oldest and largest cow-testing association; for while it is old enough to have passed through the early stages of enthusiasm it is hard to imagine a more enthusiastic set of men in any co-operative organization.

"With some of us who have been in the association since it was organized in 1909 by F. L. Mitchell, then employed by the U. S. Department of Agriculture, it is rather an old story," said Bernard Crowley, secretary of the organization, in reply to our request for historical information. But before we left, he had evidenced the same enthusiasm that successful co-operation always develops.

Poor Cows a Factor.—Like all co-operative organizations this association has not had a continual path of roses. At its inception, membership was easily secured, because the dairymen of the district were awake to the dangers of high-priced land and boarder cows. The records show that during that first year, 2600 cows were tested, two testers having been brought from Wisconsin for the work because there was no one in this State who felt qualified for the work. Those having more than 25 cows, paid a flat rate of one dollar a cow, boarding the tester and transporting him to the next ranch that he was to visit. Those with less, paid the same price and took their own samples as well.

The first discouragement came the second and third years, when a number of the first year's members were under the false impression that they could test one year and from the "weeding out" done at that time conduct their business at a profit for two or three years, when they would test again for a year. Due to this notion being prevalent, especially among several of the larger members, the number of cows tested during the next two years fell to 1300.



The State record-breaking herd of grade cows owned by John Hansen, whose average for 80 cows in the Ferndale Cow Testing Association in 1915 was 427.18 pounds of butter fat. Purebred Jersey bulls have been used continuously in this herd for 30 years.

Change Fee.—The third year, the testing fee was changed to meet the new conditions, the following rate being charged: $.80 a cow for herds over 50 head; $1 a cow for herds under 50 cows where tester took the sample and $.80 a cow in herds under 25 cows, the owner taking his own samples.

The fourth year, the value of the association began to be more appreciated, the records showing that the 2600 mark was again sustained for that year, two testers performing the work. That year also another change was made in the testing fee, this time all new members with less than 150 cows being compelled to pay $1 unless they had over 150 cows, in which case the charge was reduced to $.80. Under this new ruling herds that had been entered the year previous got the $.80 rate, those members with less than 25 cows taking their own samples. This arrangement is still in force.

The Best Years.—During 1914 and 1915 the association enjoyed unusual prosperity with 3800 to 3900 cows tested, giving the organization the distinction of being one of, if not the largest cow-testing associations in the United States. This, too, in face of the fact that over a thousand cows in the Arcata district were withdrawn and entered in another association in 1915.

Such in brief is the history of the organization. But there have been many policies to try out and finally establish and no one is better qualified to offer advice to younger associations in this respect than Bernard Crowley, who has, through the office of secretary, been the active head of the association since its founding, aided, of course, by an active board of directors.

Essential Policies.—One of the points which Mr. Crowley emphasizes is that the cow-testing association should confine its work to the weighing and testing of milk for the benefit of its members in building up their herds rather than to check up the creamery test. He believes it a poor policy to antagonize the creamery manager. He maintains that when the tester has made his report to the member, showing the amount of milk the herd has produced and the fat test, he has finished his duties and should not be drawn into any dispute the member may have with the creamery.

Another thing that he strongly advocates is that the association be conducted on business principles. The association's contracts were drafted by an attorney. They clearly specify that the member will test all cows in his herd in the association for one year at the rate agreed upon, and that he will pay in advance, quarterly, for all cows tested. This binds the member to carry out his contract with the association for a year, whether the cows are sold or other unforeseen conditions arise. If for any reason he tries to evade payment, the account is put in the hands of the bank for collection, this latter, however, never having been necessary.

Cows on Waiting List.—"We take the ground," he says, "that this association is for the dairyman's own benefit, and that he is therefore obliged to pay for services rendered the same as he would for any other benefit. And our dairymen thoroughly understand this, as is evidenced by the fact that we do not need to solicit members. They come to us of their own will and at this time, May 15, there are between 400 and 500 cows on the waiting list, whose owners did not sign up at the beginning of our year in February."

Costs.—Each month a meeting of the board of directors is held; and at the annual meeting officers are elected. The secretary directs the testers and keeps a set of books. For this he receives $5 a month for each tester employed. This, with the stationery and printing bill, which amounted to $47 this year, and the salaries of the testers, $67.50 each per month, represents the expenditures of the association. An audit of the books is made at the end of each year. The largest number of cows ever handled by one tester was 1300, but this number cannot well be handled unless the herds average 50 cows. Arrangements have been made with the various breed associations that allow the association testers to do official work which is of importance to those members with purebred herds.

Results.—"Of course," said Mr. Crowley, "the herd averages have been materially increased, but a comparison of averages for the entire association in the seven years would not show the true condition, as many of the original herds are not now entered and the newer herds bring down the average. You have to get that from the individual members for the entire period. That is where you can best appreciate the work we have been doing."

And we did later appreciate it in a number of instances, but that is another story, also an enthusiastic one.

The special interest manifested in reports of results of the dozen or so active cow-testing associations in the State shows that dairymen are finding that there really is a difference in the production of cows, that with all their practical dairying, they have failed to find without the aid of scales, Babcock tester, and a disinterested party authorized to certify results. In at least one new association, it is expected that the superior record of the purebreds will also have a strong effect on pure breeding.

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EDITORIALS

THE WEEK.

TROUBLE with Mexico, which has been long incubating, seems now to be picking holes in the shell of American peaceability and forbearance, and an ill-fledged conflict of uncertain dimensions and endurance is likely to emerge. If such be the case, surely the world can see that we have neither desired nor provoked it. There may be difference of opinion as to whether we have too long spared the rod and spoiled the child. We shall have all sides of that view set forth in the presidential campaign which is now opening. There can, however, be no difference of opinion that effective and condign punishment for trespass and outrage, neither explained nor disavowed, is long overdue and must be inflicted. So far as we can understand the motive and attitude of the United States in this matter, all acquisitiveness is absent, forbearance has been exercised to the limit, and anger has not been aroused, except as born of righteous indignation. If, then, punitive expeditions grow to declared war, the American people enter upon it with strength of purpose, but with sad heart and clear conscience. At the moment it seems most deplorable that the American ideal of neighborly republics, working together for the uplift of the hemisphere and submitting all questions at issue between them to arbitrament, with disavowal of intent to offend or do wrong, cannot yet be realized. We shall, however, cling to the ideal, though the way be dark and desperate, never yielding the conviction that it is the only hope of humanity, elevated through enlightenment to a true national altruism. It will be our duty in Mexico to suppress anarchy most swiftly, and to establish civilization with most clear guaranty of endurance. Only this can entitle Mexico to regain national existence which she has forfeited by the performances of the last few years.

MUST WE FEED MEXICO?

WAR with Mexico, if it should really arise, as now seems probable, will place great obligations upon California. There will be great call for food supplies from this State, not alone for the troops operating on the western front of the conflict, but to keep starvation from the Mexicans whom internal dissensions have already impoverished by distraction from their always incapable industry. We shall have the obligation to feed as well as to fight, for we shall be going to war with a most improvident country, thus assuming some responsibility to assuage its suffering. Unless our job in Mexico can be very quickly done, which no one thinks possible, we shall experience a sharp and continued demand for horses and mules, food and forage staples, for which our rail and water transportation will be largely open, because men and munitions, chiefly drawn from east of the Rocky Mountains, must have the right of way over food supplies on the eastern transportation lines. Fortunately the Pacific States have now considerable grain surpluses which can be delivered at once, and with the large production of beans in California and the potatoes and roots which can be still planted on moist beds, it will be possible to guarantee supplies to supplement eastern surpluses which cannot be increased for a year. If the war really begins, it is very likely that California farmers may have a very busy time for months to come.

THE CONDUCT OF THE WAR.

OF COURSE every American citizen has a right to a voice in that—in fact, we have already fired off much speech in the line of prenatal blessing and cursing of it. If, then, the war really comes, we shall suggest that our Mexican brethren be shot full of prunes instead of schrapnel. If that is denied, we shall try to compromise with the new Secretary of War, Mr. Baker, on the proposition of bombarding them with prune pies, for he is presumably more familiar with the construction of them. If we can fill the Mexican sky with exploding prune pies, we shall have the inhabitants too busy chasing prunes to interfere with a quick settlement of the difficulty and, if we cannot find any one to settle with, we will quietly take possession and install Mr. Bryan as provisional president—a job for which he has ample preparedness. The sublimity of our plan for the prune-pacification of Mexico lies in the marvellous efficiency of it. California is capable of producing 14,000,000,000 prunes in a year. This compares flatteringly with the modern European numerical standards of projectiles required, and we can land every prune in a Mexican stomach—which is an ideal place for efficiency in placing a projectile to take the fight out of a man.

But, of course, we may have to be patient with our prune-proposition. The administration seems to have another idea. As we write, the announcement comes that, in competition with large Eastern concerns, the Joseph Gutradt Company, soap manufacturers of this city, has secured a contract from the Government to supply the Brooklyn Navy Yard with salt water soap. One million pounds of the product will be shipped annually to the Brooklyn Navy Yard. We have full confidence that free use of salt and soap would go far to settle the trouble in Mexico, but we fear the plan of the administration is too academic. It does not allow for the fact that it would take at least two Americans to get each Mexican into a bath and, even if the shock killed him, the plan would require an army for Mexican service which, perhaps, we could not muster, while the prune-pie proposition would only require a few thousand bakers and catapulters. We submit our claim to the calm judgment of the American people—quietly rejoicing in the fact that whether the new conquest of Mexico be accomplished with prunes or soap, the effective munitions must come from California.

AMERICANISM AND PRUNES.

BUT this reminds us of another thing in connection with prunes which we are more glad about and that is that figures recently published, indicating a marked decrease during the last few years in the American consumption of California prunes, are probably incorrect. We doubted the accuracy of the statement from our own knowledge or dislike of the matter, and yet the statement seemed to have an authoritative basis. It is, however, now clearly controverted by E. N. Richmond of San Jose, who gave figures, at a meeting of the San Jose Chamber of Commerce, indicating that the average annual domestic consumption of prunes from 1900 to 1905 was 49,308 tons, and in 1915 it was 49,512 tons. The other figures, which he controverted, showed a consumption during the first period of 57,500 tons, falling to 22,500 tons at the present time. We hope, of course, that Mr. Richmond has the right of it, because though the local consumption has not advanced as it should, and relatively there has been too much dependence upon the European market, it is much better for the building-up effort, which is now proposed, to start from a good foundation rather than from one which has been crumbling away. Besides, it agrees better with our idea of the American ability to know a good thing and to get possession of it. This applies to California prunes—not to Mexico.

There are evidently at least two ways to impress prunes upon the American people. One is to advertise them as so delicious and wholesome that they will run after them; the other is to so equip the prune that it will run after the people. Probably both ways should be employed so as to catch the public coming and going. The promoters of manufacturing interests in Oakland, who are now particularly and systematically busy, announce with much glee that they have landed a great factory for shredding prunes, which will grind up prunes and shoot them among the other components of the shredded rations, which are now helping weak gastric juices to get a stranglehold on their jobs. The process has not much on the man who can gulp a boiled egg or a plate of hot cakes without mastication and then smile—for he does not need anything but more common sense. But the average American may find himself greatly helped if his landlord can get wholesome prunes into his system without his knowing it Therefore, we count the enterprise which disposes of the small prunes by grinding them (flesh, stone and kernel, if they like), and bringing them under the glorious, artistic advertising which common breakfast foods are paying for, will be a good thing for the prune growers and for the people also.

A POTASH PROBLEM.

SPEAKING of California soap as a war munition, as we did a way back, reminds us of a local conflict which is arising over one of the constituents thereof. It would hardly do to speak of potash as a bone of contention, because a bone is phosphate, and yet, it was over potash that we were at war with Germany long before the present war began. At the present moment California seems to be about the liveliest potassic thing on earth. First, Uncle Sam threatens to let himself into the ownership of the Death Valley potash deposits, which we understand is what the Kaiser did at Stassfurt, so that has imperial precedent and may be a form of preparedness. Second, there are the chemists, who have shown that they can get potash profitably from the tail ends of cement factories, which formerly have sent forth much poisonous dust, to the detriment of adjacent vegetation. In this way food for the plant will be had instead of poison, and growers who have been weeping over cement works may remain to laugh. But the third lurking place for potash is in the sea weeds, of which California has a thousand miles of length, and we know not what width, of plants, which grow 300 feet in sixty to seventy days and take out of the sea water about all the chemicals which man has any need of—including oodles of potash. This sea-weed growth is so high and broad that picturesque writers speak of it as "groves" or "meadows" of kelp, according to the way they look at it. There are said to be at least four great concerns mowing these kelp meadows on the California coast with gigantic submarine machinery, and making potash to beat the band. This may be one reason why the San Francisco soap man can underbid his Atlantic competitors, who can get no German potash at present. This may also be a reason why California may have home-grown potash to compete with potash mined in Germany in the years to come. But we anticipate the immediate interest is that all Californians do not like this activity in kelp. R. D. Sepulveda of Los Angeles county has brought a suit against the kelp farmers on the ground that kelp harvesting may exterminate the areas of fishing by robbing the fish of their spawning grounds. It is the contention of Mr. Sepulveda that "the fish deposits are of diverse natures, with some laying their spawn on the under side of the heavy kelp beds, which have grown and lain upon the surface of the water for years, growing softer with age and making an ideal receptacle for spawn, and others laying the spawn in the bottom growth." This question of whether the fish spawn in or under the bottom growth, or the kelp, must go of course, to a profound piscatorian like Dr. Jordan, but we imagine the question will be settled much nearer the surface than that, and we shall watch with interest for it.

By The Editor

Queries and Replies

INQUIRERS MUST GIVE FULL NAME AND ADDRESS.

BURNING GRASS TO MAKE PASTURE.

AFTER all, may not submarine farming be much like aerial farming? Is it not possible that mowing kelp may make more kelp grow, and if the fish find a nice, newly-mown lawn to roll their eggs on, will they not like it better?. This question will, of course, have to be settled by the sea-board county farm advisers in bathing suits. In our own notion it may be as reasonably settled as the National Forestry Service is disposed to settle reasonably the question of burning-over forest areas to make more pasture, when it can be safely done. The stockmen have long contended that burning out rubbish from time to time not only makes more pasture, but renders forest fires much easier to control and less ruinous to the trees. The earlier forest administrators prohibited burning and the tender-hearted nature-lovers supported them, but the stockmen did not lose an atom of their conviction that circumspect burning is a good thing. And the stockmen seem to be gaining their point for the forest service is reported to be on the point of heeding their insistent appeals that the underbrush in the forests be burned off, in order to preserve the range for stock. We read that last week Forest Supervisor R. S. Hammatt of the Shasta National Forest went out to Squaw Creek Valley, in accordance with the request of stockmen of that region, to inspect the forests and undergrowth, and if conditions are such that forest trees will not be damaged by burning off the brush, with the co-operation of the stockmen, he will apply the match. We are very glad to record such action, because rational forestry maintains that forests are for use, and it is a benefit to individuals, to counties and to the State, that national forests should not be held in idleness, to breed dangerous beasts to prey upon farmers and to store up inflammable rubbish for their own destruction and to lay waste the whole countryside.

Rye as a Cover Crop.

To the Editor: What do you think of sowing rye between the rows of young almonds, during the fall and plowing it under in the spring? Our soil is a light sandy loam and the grain farming ahead of us has robbed the top soil to such an extent that we are having trouble in getting legumes to grow sufficiently to get any good of them before the ground has to be plowed in the spring for the summer cultivation. This pertains to non-irrigated land.—D. S. N., Arbuckle.

The idea is good providing you have rainfall enough to fill the subsoil and enough to spare to grow the green rye crop. Usually there is enough in your valley and therefore the practice you propose is good. But where winter rain is scant for the needs of dry-farmed trees, no cover crop should be grown and you should make a drive for stable manure to increase your humus supply—applying it at the beginning of the rainy season and turning it under at the early winter plowing. The year after manuring you can usually get a good growth of legumes but the amount of water you can spare is still a problem to be worked out carefully.

Lime on Light Soils.

To the Editor: I would like to know if we can expect much good from liming the soil where it is a sandy loam and no heavy, cloddy, clay land to contend with?—Reader, Colusa.

You do not need it for mellowing or granulating action on the soil particles but this is only one of the functions of lime. Read again about the things lime does in the article entitled "Lime makes fertilizers available" in our issue of June 3. For some of these things lime may be valuable on sandy loam, as on other soils, but for many reasons a light soil may need it less than a heavy soil. In growing lime-loving plants like alfalfa it is surely desirable in most cases.

Will Rabbits Eat Bran Mash?

To the Editor: Is arsenic mixed with bran effective for killing rabbits? Do they eat it readily? —T. K., Lincoln.

We never saw or heard of their taking to it. Has any reader killed them that way?

The Melon Aphis.

To the Editor: What is the green bug I send which is practically taking my watermelon crop? I have sulphured and sprayed with soap suds and nicotine with little or no avail.—Reader, Redlands.

The insect is the melon aphis—the same which does so much injury to cantaloupes. Sulphuring is of no avail but soap and nicotine washes are. But the trouble with this pest is that it multiplies with such incredible rapidity that enough breed from a few survivors to convince you that your spraying did not kill any. The way to fight this pest is to begin early, as soon as you can see any, and then keep spraying at short intervals so long as they continue to be abundant. You must use a nozzle which enables you to reach the under sides of the leaves as well as the top sides.

Fertilizers for Alfalfa.

To the Editor: What is the best substitute for stable manure on aged alfalfa and when is the best time to apply it—now just before an irrigation or when dormant in fall.—I. P., Acampo.

The best imitation of stable manure is what the dealers in commercial fertilizer supply as a "complete fertilizer." For alfalfa which usually may be relied on to provide its own nitrogen, the things which alfalfa cannot get for itself are phosphoric acid and potash and lime. Alabama experiments gave best results with 400 lbs. acid phosphate and 50 lbs. muriate of potash per acre. These are best applied before an irrigation in the growing season. Lime should be applied by itself and as it is less soluble, fall or early winter application, at the rate of 1000 lbs. or more per acre, is reasonable.

Root-Knots on Alfalfa.

To the Editor: It has been discovered that the alfalfa, in certain parts of Glenn county, is badly affected with root knot. I have planted almond trees in an old alfalfa field and am expecting to plant more. I would like to know whether the root knot from the alfalfa will affect the almonds.—Planter, Glenn county.

The root knot to which you refer is presumably a rather conspicuous swelling or excrescence on the main root or large branch roots near the ground surface and having a general resemblance to the root knot of fruit trees. In that case you do not need to worry about it. In the course of an article on this knot in the Pacific Rural Press of July 24, 1915, Prof. Horne wrote this: "The fungus which causes these swellings does not attack other plants, so far as I am aware. It has nothing to do with the crown gall of stone fruits and other trees. There is no possibility of the alfalfa deriving it from old peach or almond roots left in the soil when an orchard is removed nor is there any danger of this disease being communicated from alfalfa roots to fruit trees." This seems to fully cover your case.

It may be added that there are at least two other kinds of enlargement found on alfalfa roots, but they occur on small roots and are themselves inconspicuous. One is the tubercle caused by the nitrogen gathering bacteria. This is for the good of the plant. The other is the gall caused by a microscopic worm, called a nematode, and is bad for the plant. It has been observed that the first has no rootlets starting from it while the latter usually has. They are also otherwise dissimilar as studied with a magnifying glass.

There is no "Best Cover Crop."

To the Editor: What do you consider the best cover crop? Is bur clover better than barley and vetch? What does bur clover seed cost a pound and how many pounds to the acre would you use? Would winter rye be better? Would it make more growth in the same length of time and how much per lb. is the seed? When would you plant?—Reader, Guinda.

There is not, and can never be, any "best cover crop"—because that crop is best which makes most green growth with the soil, water and temperature conditions which you can give it. Which plant that is, you have to determine by trying plants and by observing what your neighbors get from conditions like yours. The way to get information about what seeds cost, is to write to the seedsmen who advertise in our columns. That is one of the reasons why we are kind enough to let them advertise. If they would not help us teach people practical things we would run over them with automobile advertisements. It is up to the reader to make the seedsmen work and not spend all their time playing with their picture books.

In choosing a plant for a cover crop it is for you to figure out from the size of the seed which plant would give you most seedlings from the pound, for the real cost to you depends upon that more than upon the quotations you get. Then you have to watch the amount of growth which you get from each seedling, up to the time when it should be plowed under, and this will show you whether the plant requires you to sow thickly or thinly—at more or less cost for seed, of course. Your purpose is to get just as much green stuff as you can plow under completely and you must study the ease or difficulty with which that can be done with different plants—for that is another point in the relative cost of different cover-crop plants, under the conditions of your implements and motive power. And there are other things like that which you can think out for yourself. The chief thing about a cover crop is not to cry out for a tip but to get right down and watch and weigh or measure, and think for yourself.

In choosing between a non-legume like rye and barley and the legumes like bur clover, vetch, etc., remember, of course, that the latter can trap nitrogen for you from the air, which the former cannot, but for forming humus and securing the benefits thereof, a greater growth of the former will do more than a less growth of the latter, because of the greater amount of organic matter which it furnishes for decay. Obviously, too, a seeding of a non-legume may be had for something less seed-cost than a legume seeding, but you ought to watch and figure on that, for most legumes are spreading plants and may spread faster than a grain can stool. You may find that a thin seeding of a legume may cost less than a heavy seeding of grain. Get the prices; study the plants; peel your eyes, punch your brain-starter and get under way. We do not do farming in these columns. We only try to get the readers mad enough so they will do it for themselves.

Yellowing Prune Leaves.

To the Editor: I have some prune trees which have yellow leaves and the prunes are not so large on limbs that are so affected. Can you give me the cause and effect. The trees are on adobe soil, watered twice a year. I send you some twigs.—J. M., Santa Clara.

It is the chlorosis, or yellowing, of trees, or parts of trees, which is usually seen at this season or earlier. We are not aware that the cause has been demonstrated and there may be several causes which produce this abnormal growth. So far as we now know, as it is not a disease of which a definite causative agency can yet be assigned, no pest controlling treatment can be reasonably prescribed. The effect is often transient, the trees assuming healthy color later in the season; on the other hand some trees, or parts of trees, may die. If it is a case of limbs on trees otherwise healthy we should saw them out at their starting points. Where whole trees are affected we should wait and see what happens. Our guess is that the trouble is usually due to lack of drainage which allows too much winter water to collect at that particular spot.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., June 20, 1916.

STATIONS	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	.02	39.01	45.87	58	44
Red Bluff	0	20.21	24.95	102	58
Sacramento	0	18.28	20.09	98	52
San Francisco	0	27.12	22.27	68	48
San Jose	0	16.31	16.79	82	44
Fresno	0	11.72	9.68	102	52
Independence	0	10.34	9.53	96	—
San Luis Obispo	0	26.89	20.51	76	44
Los Angeles	0	19.92	15.64	76	54
San Diego	9	12.55	10.01	68	56

Crown Gall Starts From Seedling Stubs.

[Written for Pacific Rural Press by C. J. Oswald, Bakersfield.]

I have a thousand thrifty two-year apricot trees. I have examined every tree and have discovered about twenty cases of crown gall. My trees have been planted on desert land 75 or 80 feet above water level. They are irrigated by pumping plant.

I find the crown gall on my largest and most thrifty trees. Most of the knots were as large as an orange. I find by taking and breaking them off with a chisel that the wood is apparently healthy. The only indication is a kind of a curly core running into the tree, but no discoloration of any kind. This core leads directly to the old stump that had been cut off above the bud.

The old stumps smell sour. From all indications the disease is caused by the dead stub left in there and sealed up. A kind of gum oozes out.

I believe that the nursery is directly responsible for root-knot and crown gall.

When I planted the trees I found the old stump where they had been cut off and left about an inch long, very rough and unclean work.

If the nursery would cut seedlings off next to the bud, making a clean smooth cut properly shellacked or varnished so they could heal over healthy wood, the source of the disease would be conquered.

Simply cutting off the knots and painting with Bordeaux mixture does not seem to be effective. The galls seem to show up again. But dig in, and take out the old dead stump. Then varnish the clean cut, bringing the varnish up to the bark so as to keep water and air out. It heals over very rapidly and no signs of affection show up.

Barnyard manure may be a preventive. The fall after planting my trees before the rain set in I hauled dry stable manure—a two-horse load—to about thirty trees; making a pile of manure about one foot high and about three feet across to every tree. Later on I went around the trees and pulled away the manure so it wouldn't lie against the tree. It stayed in that condition all winter. People told me that it would ruin my trees, so I took a fork and scattered it from part of them. Being short-handed and pressed with other work I neglected taking away the manure from balance of trees.

In my examination I have found these trees free from crown gall or any other disease. It apparently absorbed all excess moisture, and kept ground mellow and soft.

It would seem unnatural to allow a splinter or any foreign substance to penetrate the flesh and heal up on man or beast. Neither would I expect a dry dead stump to heal over and absorb moisture without causing disease. Nurseries ought to be inspected by state or federal inspectors so as to give some protection for clean and healthy trees to innocent purchasers.

[Mr. Oswald's connection of stub-decay with crown gall is an interesting suggestion which should be farther looked into and observations recorded. The close-cutting of stubs and painting to exclude decay has always been urged as desirable but in the haste of nursery work is usually neglected. If such points are to be enforced by regulations, trees must be sold at a higher price and they would probably be worth more than the extra cost. But if not done in the nursery, the planter can insure better trunks for his trees by careful treatment of stubs before planting; and some growers make a point of doing that.—Eds.]

HAS BIG PRUNE CROP

[Written for Pacific Rural Press.]

Two years ago we found Dr. M. T. Moore's prune crop the best seen on a trip through Sacramento valley. This was largely due to his irrigation the previous fall, after fruit was off but before the leaves fell. The water enabled the trees to strengthen and build up the fruit buds already formed. Next year when the crop was light most everywhere on account of previous dry seasons, Dr. Moore sold his fall-irrigated crop for nearly $200 an acre. One of his orchards not fall irrigated had less than one-third of a crop.

Now comes the word through the Corning New Era that in this year of prune scarcity his trees are loaded with fruit, estimated at 25 per cent more than the good crop we saw.

Dr. Moore believes in gradually renewing his trees by cutting out old branches, top working the trees in some places and pruning generally for a vase form, the inside of which is allowed to fill more or less with good potential fruit wood.

He claims that one reason his blossoms do not fall, is that the stored up food supply of the tree due to its autumn irrigation, brings the bloom earlier than otherwise; so the fruit is set before hot weather is likely to cook the blossoms. The doctor began farming nine years ago at about 60 years of age.

WATER TREE ROOTLETS.

[Written for Pacific Rural Press.]

Irrigation water in many Placer county orchards runs in a diminutive furrow directly down the hillsides and close to the trunks of the trees. How do those fruit growers expect the trees to get what little doesn't run away?

"It isn't right," says Howard Snelling. "The water ought to be checked and zigzagged back and forth, or on contour, so it could soak in. The most important thing in irrigation here is to keep the ground moist by running three or four furrows between the rows, where the rootlets are. Where we encourage them with irrigation, and then allow them to dry dead for two weeks and start with another irrigation, we are injuring trees and losing use of ground."

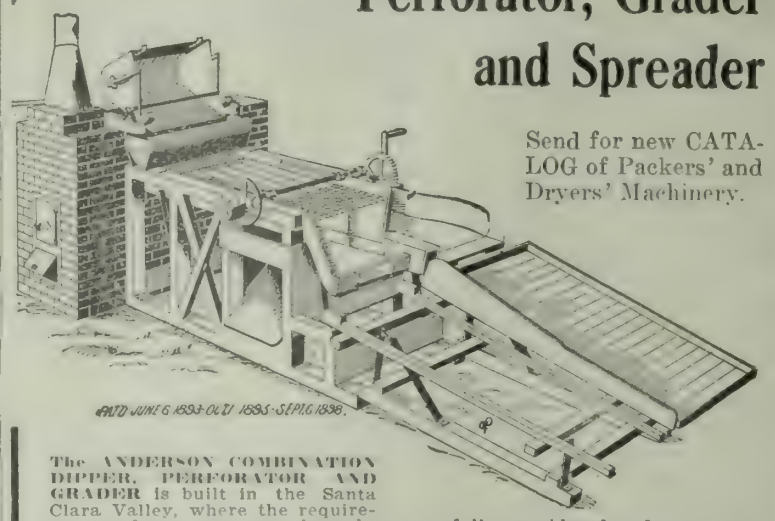
LATE GRAPE IRRIGATION.

[Written for Pacific Rural Press.]

Irrigation when fruit is near ripening is generally condemned by practical growers. However, R. D. Stephens of Mayhew, Sacramento county, who has been raising fruit 25 years, says it is all right in his district, to irrigate fruit at any time, whether the fruit is for drying, canning, or shipping, if it needs water.

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His soil is such that a very heavy head of irrigation drains away quickly.

"The more water that goes into the fruit, the more sugar it takes with it," says he. "Even if the water evaporates more or less, the sugar won't, and you have extra size and weight, and it carries or dries better on account of its extra sugar."

Mr. Stephens has checked his orchard in big rather irregular areas, with levees that hold two to seven feet of water. These are filled with a big-capacity pump described elsewhere. On June 16, he had just finished cultivating plums and prunes after the irrigation, and was picking them.

Another part of his 221 acres of orchard and vineyard is interset with table grapes.

When the pump was first put in, he flooded the orchard and vineyard and "got phenomenal prices." One interset check was flooded in October, and the grapes picked as soon as possible without miring down. Grapes from neighboring vineyards which were sent in the same car with these, showed more or less mold; but "no whiskers on mine," says Mr. Stephens. "They contained more sugar."

Reputation Sells Oranges.

[Written for Pacific Rural Press.]

Everybody concerned is rightly happy because of the reputation Collins Fruit Company of High Grove, Riverside county, have worked up with an orange dealer in the prairie town of Salina, Kansas.

A car shipment made Feb. 24 and another Feb. 25 illustrate the case. Salina wired for prices on a car. The western firm through John L. Bishop wired their price; but that there were plenty of tramp cars en route which Salina could get cheaper—"only look out for brown rot."

Evidently Salina did not want brown rot, for the order came Feb. 23. The oranges were picked that afternoon, packed the next morning and shipped out shortly after noon. They reached Salina in just six days. The Salina people had advertised this car meanwhile as "on the tree in California last Wednesday; will be ready for you to eat next Wednesday." On similar transactions the cars have often been all sold to local dealers before they arrived.

A car a week, and sometimes more, goes this way to Salina from Christmas till July. Christmas oranges have been supplied to this market by the Collins Fruit Company ever since 1903. Occasionally the Eastern people call attention to a defect, but always send the full price on receipt of the fruit. This arrives in nine days after shipment from High Grove. If there was anything serious with the car, adjustment is made satisfactory to all.

These eastern folks depend on this company for their supply, and they are never disappointed, either in getting it or in the quality. The company depends on Salina to take this part of their output and always gets the money on time.

PEEVED ABOUT SOUR-SAP.

To the Editor: This year we have had to dig out 185 sour-sapped trees besides leaving many that ere long will join the departed. A neighbor claims that his 10-acre apricot orchard 3 or 4 years old was wiped out just after he had been exclaiming over the wonderful growth they had made. Undoubtedly thousands of dollars have been lost to orchardists these last 2 or 3 years due to sour sap.

Now: Are our farm advisers or investigators doing anything about it, or dismissing the subject with "climatic conditions"? It seems to me that our experts visiting various localities and noting the differing conditions might suggest a more resistant root for instance, or other precautions to avoid the evil.

"Water standing on, or in the soil" does not hold good on our ranch, as it is very gravelly. Another neighbor having apricot trees in his alfalfa and irrigated every month were not affected, whereas nearly all on the unirrigated portion were sour-sapped.

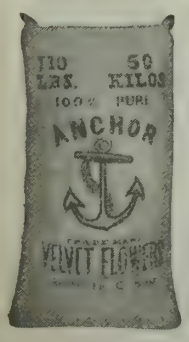
Another rancher I know grafts his apricots on the almond root, and claims immunity, while others around suffer losses.—J. C. J., Santa Clara.

[We understand that systematic study is being made of sour-sap phenomena by some of our plant disease experts and results will no doubt be announced when reached.

At the moment it is believed that sour-sap in root or in branches may be due to three causes, acting singly or sometimes, perhaps, acting together. They are (1) loss of root-hairs by too dry soil in the autumn; (2) loss of root hairs by decay in water-soaked soil in the winter; (3) injury to branch tissue by sharp frost after sap-flow has started. All these conditions interfere with normal sap circulation and induce fermentation which gives rise to the name "sour sap."

Your neighbor's experience with irrigation and what you say about your soil being gravelly suggests the conviction that you lose your trees through drouth in late summer and until rain comes. It is also supported by what you say of the behavior of almond root because it can stand loose soil better than other roots. But the almond root is not safe for the apricot, which is apt to break off even when three or four inches in diameter.

The chances are that your trees need summer and early autumn irrigation.—Eds.]

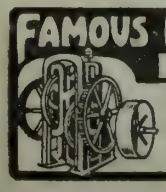


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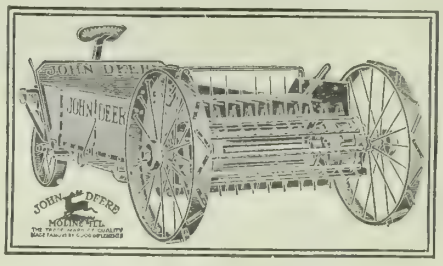
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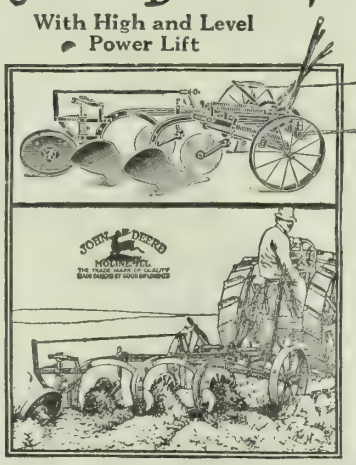
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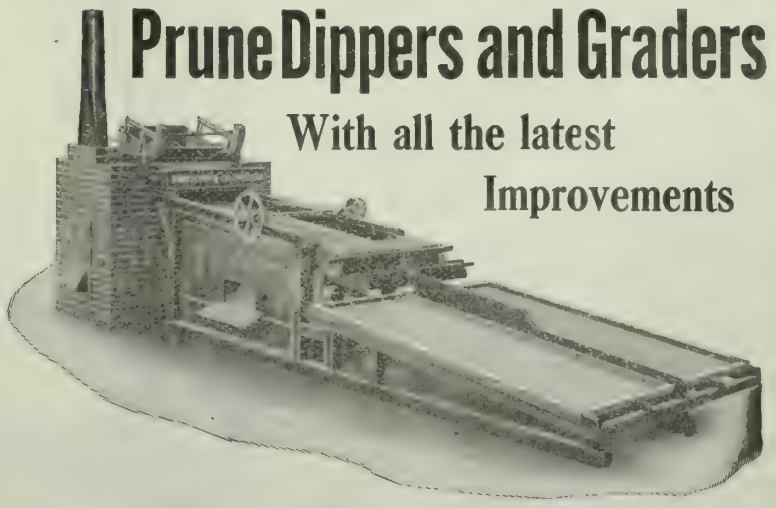
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Plums on Peach Roots.

To the Editor: I have noticed articles in your paper by E. A. Amundsen and J. E. Hassler with reference to defective unions of Diamond, Grand Duke and Hungarians. I have planted quite a large number of these trees in Nevada county in your State and had intended to keep on planting them until I would have a big plum orchard. However, if any considerable proportion of them are going to die off in eight or nine years nobody should plant them at all and the proposition therefore is a most vital one in the planting of plum orchards. — P. H., Winnipeg, Canada.

[Answered by E. O. Amundsen, Farm Adviser, Auburn, Placer Co.]

I find as a general thing that the Diamond plum, grafted on peach stock, does not live over six or seven years. There are many orchards in the county where a very large percentage of the trees have died before the seventh year. I have found but one orchard ten years of age in which very few of the trees had been lost. I could not ascertain the variety of peach stock upon which these were worked.

Most of the Diamond grafting has been done within the past three or four years and the trees seem to do pretty well for a time. Dr. O. L. Barton of Loomis has a number of Diamonds on the peach root and also on Myrobalan. Within the last two years he has lost about two hundred on the peach root and none on the Myrobalan.

The union of a peach and Diamond is very much enlarged after a few years. The Diamond graft seems to grow out of proportion to the peach stock. In many cases, the Diamond top may be five inches in diameter while the root stock below the union is only three to three and a half inches.

After my observations throughout the county, I would not advise working the Diamond on the peach root. Of course, as the Diamond has brought good prices, there has been considerable grafting to this variety on peach trees, although there is a general acknowledgement of the results. Some people will take a chance at the same game that a neighbor has failed at; and it is hard to prevent them doing anything in which there is a chance.

In regard to the Grand Duke and Hungarian on peach, I have not observed much trouble. Although the unions are more or less enlarged, they are not so pronounced as in the case of the Diamond and there is very little loss due to this combination.

Your correspondent did not mention anything about the peach root but I take it that he meant the plums on such root.

CROWS, BLACKBIRDS AND DOVES.

To the Editor: We are new farmers, and lack knowledge. Shall we kill crows, blackbirds and mourning doves?—H. P., Bonsall.

[Answered by H. C. Bryant, University of California.]

Except under unusual conditions all three of these birds are considered beneficial rather than destructive in our State. Crows may occasionally give trouble in the poultry yard. When they do the State laws give permission to destroy them. Red-winged blackbirds are often destructive to Egyptian corn and barley when it is in the milk. Where one lives near a marsh it is sometimes necessary to frighten away and to destroy red-winged blackbirds. The Brewer blackbird (the shiny black one) feeds upon grain to some extent, but probably more than pays for the grain he takes during the year by destroying injurious insects. Almost all eastern States give protection to the mourning dove because it is so valuable as a seed-eater. Here in California we receive no complaints regarding depredations by the mourning dove, and we are convinced that it should be given careful protection.

KILLING SEDGE GRASS.

To the Editor: A grass (sample enclosed) grows in our pasture with a solid mass of roots. I fear plowing won't kill it. Would spraying be good?—W. K. B., Santa Rosa.

[Answered by Dr. H. M. Hall, University of California, Berkeley.]

[It is a species of sedge, Carex laciniata. It is a perennial with strong underground rootstocks and so cannot be killed by sprays such as those used against mustard. Plowing and clean cultivation will eradicate the sedge, if continued long enough. It might, however, take an entire season, and perhaps longer. Grow some crop such as corn or potatoes on the ground. See that the sedge sends no green shoots above the surface until the underground parts have been completely starved out.]

A promotion campaign which brought outside peach buyers to the Modesto-Turlock district resulted in sales which will bring $90,000 this year for the bumper crop of 3600 tons of clings. The co-operative pool takes credit for getting $20,000 more than the growers would have received otherwise.

GOOD BYE! MorningGlory

Don't let this troublesome weed sap your soil and ruin your crop.

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is the one sure exterminator that does the work without injury to the ground. Read what Luther Burbank says: *"We find that Nonpareil destroys not only morning glory but also horse-radish. We consider it a thoroughly satisfactory weed exterminator"*—Luther Burbank.

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"***We had no repairs on your 30 h.p. BATES STEEL MULE during 120 acres of plowing, and we used 14 gallons of distillate per day. We plowed about an acre per hour. The machine was in as good condition when we were through as it was when we received same."— (Name on request.)

Red Spider Control

All species of the so-called red spider or mites occurring on fruit trees can be successfully controlled during the summer season by the use of Atomic sulphur applied as a liquid spray. This form of sulphur is so treated as to render it in very finely divided condition in paste form. It is not caustic and is more safe to use during the growing season when solutions of sulphur might prove injurious. Atomic sulphur can be diluted easily in water and is adhesive. Because of this adhesiveness it remains effective, giving protection to both fruit and foliage for a long period of time.

In using Atomic sulphur for red spider control, dilute and thoroughly mix with water at the rate of 10 gallons for each 100 gallons of spray, and thoroughly cover all of the fruit and foliage of the tree, especially the under surface of the leaves as most of the mites feed on the lower surface and the spray will therefore be more effective. Prices and full information furnished on application.

GENERAL CHEMICAL CO.,
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VACATION LAND

What section of California holds forth such inducement to the vacationist as that traversed by the Northwestern Pacific R.R. Anglers will find the finest fishing; sportsmen an abundance of furred or feathered game; swimmers and bathers have a wide choice of ocean, river and bay; lovers of wild, primitive spots will find miles of great redwood and other forests; rugged mountains and elevations will appeal to trampers; cozy camping locations will entice the family; this wondrous collection of nature begins at Sausalito and extends to the world-old forests of Humboldt county.

A very interesting description of this territory is found in the booklet — Vacation — 1916, free copies of which may be obtained at 874 Market Street, San Francisco, or on application to J. J. Geary, G. P. A., 808 Phelan Bldg., San Francisco.

Northwestern Pacific R. R.

CALIFORNIA GARDEN FLOWERS,
By E. J. Wickson.
$1.50 Postpaid, Pacific Rural Press

HOUSE FOR HOT WEATHER.

We saw a house which looked about the coolest possible while we were in Imperial Valley. E. Steiner who lives near Brawley has one on his ranch.

It is made of two rooms, 10x12, with a 7-foot gallery between. The floor is of tongue and grooved boards. The sides are 1x12s three feet high; then open two feet high entirely around; then 1x12s, two feet more to the eaves. The opening is covered with wire screening. The roof plates are of 2x4s. A 2x4 is used at each corner of the room, and two between each two corners.

The roof is the ordinary "A" shape made with a 1x3 ridge pole and supported by three pairs of 2x4s. This frame is covered with a canvas which also extends over the gables.

The second roof extends over both sections and the gallery, several inches above the canvas roof. This has a double 2x4 for the ridge pole and is supported by vertical posts resting on a beam across the gallery between the ridges of the canvas roofs. It is covered with 1x12 boards which rest on 2x4 plates, and extend two or three feet beyond to make wide eaves. Three-by-four timbers support this fly roof and these are braced to the roof plates with elbow braces to prevent their blowing down or racking.

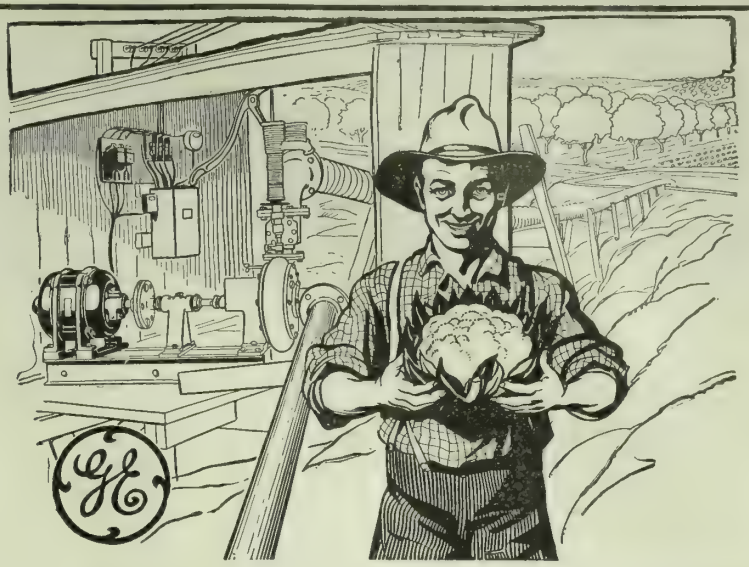
The openings around the rooms are covered on the outside with a canvas which is tacked tight around the top, but fitted with hooked wire loops at the bottom to fasten down over nails in the heat of the day, or to be hung up to nails above the opening when a circulation of air is desired in the cooler night time. No windows are necessary. Screen doors open in the gallery from each room. The boards are slow heating through during the day time, and the canvas roof allows as much circulation of air as possible without blowing in.

EXTERMINATING WEASELS.

To the Editor: Please publish in the Rural Press some practical means of getting rid of weasels. Hardly a family in this community has had any success in raising chickens and turkeys on account of weasels killing them this year.—C. L. Adair, Stratford.

[Answered by Prof. H. C. Bryant, University of California.]

[Weasels are easily trapped. Steel traps set level with the ground and carefully concealed should be placed near the entrance or near the hole through which the weasel gains access to the poultry yard. If bait is used with a setting of traps it should be freshly killed. Strychnine inserted into a freshly killed bird or small mammal is sometimes effective.]



Profitable Farming

G-E Electric Motors are increasing profits for hundreds of farmers by saving money in running irrigation pumps and doing "chores".

A G-E Motor is always ready to run when you throw in the switch and costs very little to operate. The absence of fire risk is a big advantage of electric power. Some of the other advantages of electric motors are:

Only one moving part and two bearings—run for years without a moment's trouble.

Can be set wherever a wire will go—on the wall, ceiling or floor. They occupy less space and have less weight than any engine of equal power.

Capable of higher and more constant speed than any engine.

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Are safe and sure—no water to freeze—no inflammable gases—no starting troubles—JUST THROW THE SWITCH.

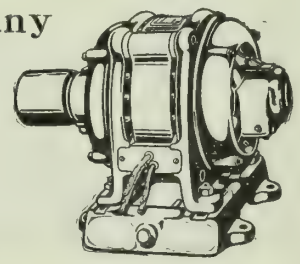
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The General Electric Company will gladly answer all questions relating to the use of electric power for ranch and market garden irrigation. 5479

"Oh, Yes, they try to be fair

—and I don't doubt they're honest enough, but no mortal man can start that water and then only call around three or four times during the day, and say how much I got. I'd rather pay what they say than kick all the time, but if they had some way to tell just what water I did get I'd feel a whole lot better satisfied"



That Man Needs a Sentinel Recording Weir Gauge.

and both sides would be better satisfied if he had one. Write for Catalog "R."

Agency "Stover's Good Engines."

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DOMESTIC GRAIN BAGS

Superior to Any Imported Bags.

THEY ARE THE STRONGEST
AND
MOST UNIFORM BAGS MADE

Mechanical Power on the Farm.

SOME PUMPING PLANT FOR ORCHARD.

Sixteen thousand gallons of water per minute is some irrigating plant. It will do the equivalent of covering 35 acres an inch deep in an hour, and have some 30,000 gallons to spare. Such an outfit is owned by R. D. Stephens of Sacramento county who uses it for his 221 acres of prune, plum, peach, cherry, etc., orchard and table grape vineyard. To handle the flow, the land is laid off in big checks with levees often three feet high and more. Such a volume of water is needed because it quickly soaks away into a great deal of the soil. Ordinarily only 13,000 to 14,000 gallons per minute is pumped, to avoid overflowing the ditches.

The orchard is near the Sacramento river, whence the water is lifted 15 to 18 feet by a 150 h.p. motor-driven pump. The land slopes from the river pump outlet to a sump in the midst of the orchard, where the other pump is located, This is run by a 125 h.p. motor which took the place, 18 years ago, of a $4,000 steam plant which was too much trouble to run. A 15-inch belt is used here on the four-ton centrifugal pump, while at the river, a 20-inch belt is used.

The motor rests on a concrete base on a concrete floor. There is a foot valve at the lower end of the 20-inch intake and there is a 20-inch discharge. A 1000-gallon galvanized iron tank rests above the centrifugal, ready to prime it.

The pump must run a certain amount of water or it will "kick." If it is running too much, one or more of three ½-inch plugs in the intake pipe is removed to let air in. The air acts as a lubricator for the water where it rubs against the pipe, and reduces the amount down as far as the "kicking" point. A heavy belt-wheel on the end of a frame which would rise or fall on an axle at its other end, was formerly used to tighten the belt, but its vibration seemed likely to damage the journals of the motor. A non-slipping substance is now applied to the belt.

Where the water dropped into the sump from the canal, it caved out a long deep gulley. To stop this a concrete floor and wings at the end of the ditch receive the water, which is then dropped through a vertical concrete chute to a concrete bottom whence it spreads out over an apron about level with the bottom of the sump. Of course there is no washing after the sump is filled, for it is kept full until the irrigation run is ended. Should that pump get out of order, the water runs from the ditch over a spill way into the orchard until the river pump can be stopped.

CLEANING THE RADIATOR.

Care should be taken to see that the hose used for radiator connec-

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SIMPLE
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IRRIGATE WITH
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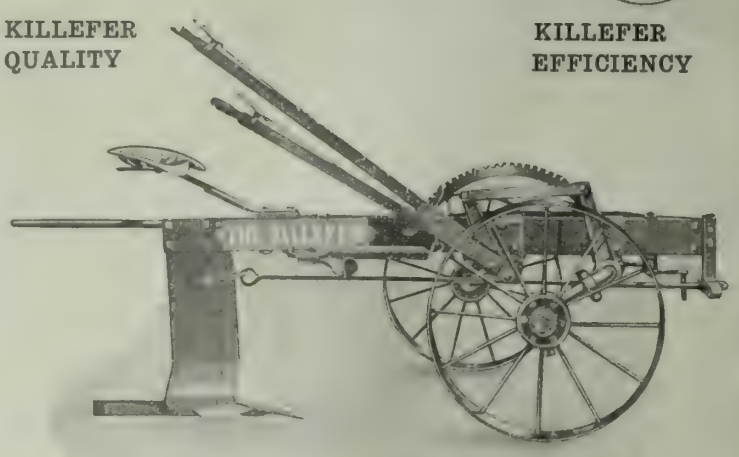
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KILLEFER EFFICIENCY



Was designed for the smaller grower where horse power was not available for handling the larger two-row plow. The draft is very light and no more weight has been used than was necessary to give the proper strength.

The axles are large with long wheel bearing. This plow is equipped with a compound lever which enables the driver to level it to any of the irregularities of the ground. At the same time it is only necessary to use the one lever to raise the plow at the end of the row. The compound lever works in connection with a heavy coil spring, which assists materially in handling. The foot lever controls the shifting hitch and is below the frame, making it much easier on the driver than the old style.

We build this plow with either straight, sloping, or bent standards and with any style of wing or point required.

The Killefer Manufacturing Co.
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Straight Distilled
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RED CROWN
the Gasoline of Quality

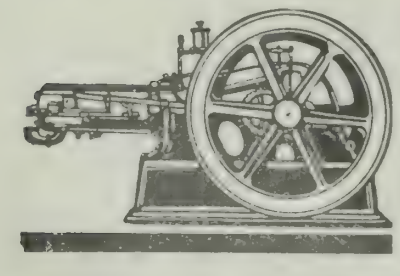
reduces your gasoline cost because every drop atomizes evenly through the carburetor and gives full power.
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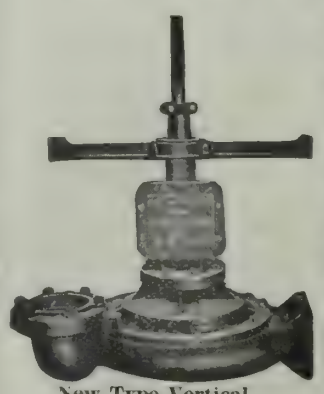
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New Type Vertical.

Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film; absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts means less friction and greater efficiency.

Get our Bulletin No. 78 before deciding on a pump.

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When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a **free sample** of **Test Special** together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

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Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

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Distance Between Centers of Pulleys { _____ / _____ }

Revolutions per Min. of Driving Pulley { _____ / _____ }

Kind of Machinery Driven { _____ / _____ }

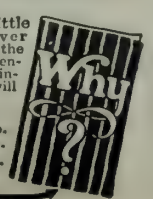
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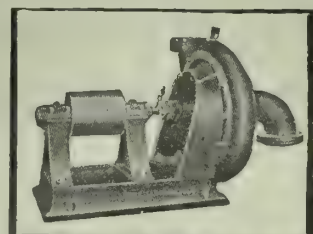
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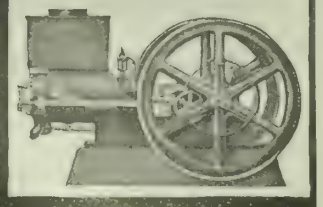
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Send for our large No. 36 Catalogue Mailed Free. GASOLINE ENGINES Inquire of your Local Dealer for full particulars.



tions has not rotted and that small particles of rubber have not gotten into the cooling system. Also that the formation of scale and sediment in the water jackets is not so serious as to impair radiation.

To remove sediment and particles of foreign matter from the cooling system, fill the radiator with boiling water in which three to five pounds of salsoda has been dissolved. Allow this solution to stand in the radiator and water jackets for 24 hours, after which it should be drained off and the system thoroughly flushed out with clean water. If this is done once a month, or at least every 2,000 miles, it will keep the radiator and water jackets in very efficient condition, according to the Standard Oil Co.

Care should be taken to see that the fan belt is not slipping, and that the blades have not straightened out, as in this case the fan will not draw sufficient air through the radiator to insure proper cooling.

Not less than seven per cent of the power developed by the cylinders is lost in overcoming the friction of the piston, and it is, therefore, necessary that the cooling medium be kept at its highest point of efficiency to enable the lubricating oil to perform its duty. Experience has proven that oil made from the Western asphalt-base crude maintains its lubricating efficiency at cylinder heat better than oils made from other crudes, thus aiding materially in keeping the motor at the proper temperature.

While the University does not as yet fully advise spraying, the following taken from a recent bulletin by Prof. H. J. Quayle is so much to the point that it is quoted:

"The most important phase of the whole process of spraying a citrus tree is thoroughness of application. . . . Since the scales are largely on the under sides of the leaves at the time of spraying, the 'uppershot' should be used almost entirely. By the time this spraying from below is finished, and the excess spray falls on the upper surfaces, very little 'overshot' work is necessary. . . . A power sprayer is necessary. . . . with a pressure of 200 pounds or over. . . . The 45 degree nozzle is preferable, because it enables better undershot work to be done."

Much trouble with spraying is resulting from use of dangerous spray strengths and poor workmanship.

New Layne & Bowler Catalog *Now off the Press*



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Our latest catalog has been in course of preparation for over five months and is absolutely the most elaborate booklet of its kind ever published. It contains information invaluable to prospective water users. One hundred and twenty-five new illustrations are shown and interesting hydraulic data is given.

In this booklet we announce and illustrate a number of new Layne & Bowler products, including horizontal pumps, pump heads, cylinders, drill stems, swivels, etc. You'll find the booklet entirely different and far superior to all other catalogs. It's prepared in such an interesting manner you can understand every word. Practically all phases of irrigation from the standpoint of water development have been touched upon and clearly described.

Every prospective water developer should send in his name at once for a copy. Ask for Catalog No. 25.

Layne & Bowler Corp.
900 Santa Fe Avenue, Los Angeles

General Agricultural Review.

GRAINS AND FIELD CROPS.

Livermore Valley sugar beets look good.

Bean planting is in full blast around Live Oak.

Fair to good barley is coming into Gridley.

Lovelock Valley, Nevada, has one of the biggest hay crops ever.

Wheatland oat farmers find considerably better yield than they expected.

The State garlic crop is estimated at 55 carloads of 20,000 pounds for 1916.

V. Marchetti of Oakdale claims 150 sacks of onions on ¼ acre, sold at $1.50 per sack.

To store 1000 tons more hay this year than last is the plan of Henry Scullion of Altamont.

A carload of watermelons flooded the Stockton market and sunk prices to 2½ cents per pound.

Cabbage, 264 cars of it, had been shipped by rail from producing districts of Cal. before June 13.

Two thousand and twenty carloads of cantaloupes have been shipped from Cal. this season previous to June 15.

Standardization is held responsible for the good cantaloupe market prospects in spite of one of the biggest crops ever.

The Butte County Rice Mills Co. has let the contract for a 50x60 four-story corrugated iron addition to their present plant.

Between 500 and 600 acres of barley were burned north of Winters last week. On some, the grain was in the sacks. All were insured.

Second cutting unbaled Orland alfalfa sold to the mill at $7, was disposed of so quickly that the mill is offering $7.50 for third crop.

The 210 acres of cantaloupes around Le Grand have a good stand. The melons are to be marketed through the growers' organization of Turlock.

Last year's hemp crop of the Rindge Land Co. of San Joaquin county, was recently baled and sold for $50,000. Another crop is being grown on the same land.

The paddy-rice carload freight rates have been reduced by the Railroad Commission at the instance of the Pacific Rice Grower's Ass'n. by 20 to 30 per cent. From Biggs to Oakland it will be 14 cents instead of 17½ cents as formerly.

Oat harvest had not begun June 15 around Oakdale, except on poorer fields, though barley was being hauled. Prices were $1.15 at Oakdale as against 95c to $1 last year at opening.

Grasshoppers are threatening Gridley alfalfa. Tulare countyites use green alfalfa dipped into a barrel full of a mixture made by boiling two pounds of white arsenic and 8 pounds of sal soda in two gallons soft water, then diluting it to 40 gallons.

MISCELLANEOUS.

Gilroy rats are eating poultry and garden vegetables.

A vigorous campaign has been waged for a farm adviser in Fresno county.

Oregon has a rural credits system on the ballots as an initiative amendment to the constitution.

The Industrial Accident Commission has decided 2240 formal cases since the Workmen's Compensation act became effective Jan. 1, 1914.

The Stanislaus County Beekeepers' Club has decided to co-operate in buying supplies, and marketing in connection with the State Market Director.

Weeds on State highways are endangered by the campaign in which the State Horticultural Commission and the State Highway Commission hope to co-operate.

Work has been obtained for 11,112 men and women by the State Employment Bureaus since they were organized Feb. 1. This service is gratis to employers and people who want work.

Not only is all of the eastern white pine threatened with blister rust, but if rigid State quarantines do not stop it, the disease will ravage the great forests of the west, according to the U. S. Dept. of Agr.

Timber in California's eighteen national forests measures approximately 119,000,000,000 feet and has an estimated value of $250,000,000 according to Coert Du Bois, United States District Forester.

Congress is to be asked by the Chamber of Commerce of the U. S. to direct the Interstate Commerce Commission to investigate railroad men's wage scales involved in the threatened strike all over the U. S.

It is proposed to spend $6,000,000 to build a levee around 260,000 acres of the Tulare lake bottom lands twelve feet higher than the highest water ever known. Water is also to be pumped onto the Huron plains.

CITRUS, OLIVES, NUTS, FIGS.

About 800,000,000 lemons are shipped out of the State per year.

Ground rats are girdling some of the orange trees in the Porterville district.

The Orange Cove Citrus Ass'n. is investigating modern packing houses, planning one for themselves.

Fifteen navel oranges per capita per year for U. S. are produced in California, according to G. Harold Powell.

The Rumsey and District Almond Growers' Ass'n. will build a 100-ton warehouse and sulphur house in Rumsey for this year's crop.

Santa Barbara olive growers met June 11 with State Market Director Weinstock. They have raised $15,000 for a packing house plant.

Distribution of caprifigs infested with blastophaga has been proceeding under direction of Sutter county horticultural commissioner H. P. Stabler.

The Banning Almond Ass'n recently made plans for a 57x48 addition which will nearly double the capacity of their fine concrete warehouse, at a cost of about $3500.

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Agricultural Investigation. Drainage. Legal Engineering and Water Right Reports. Alkali and Marsh Land Reclamation. Appraisal of Irrigation Systems. Management and Development of Lands. Ranches and Irrigation Projects. Soil Surveys.
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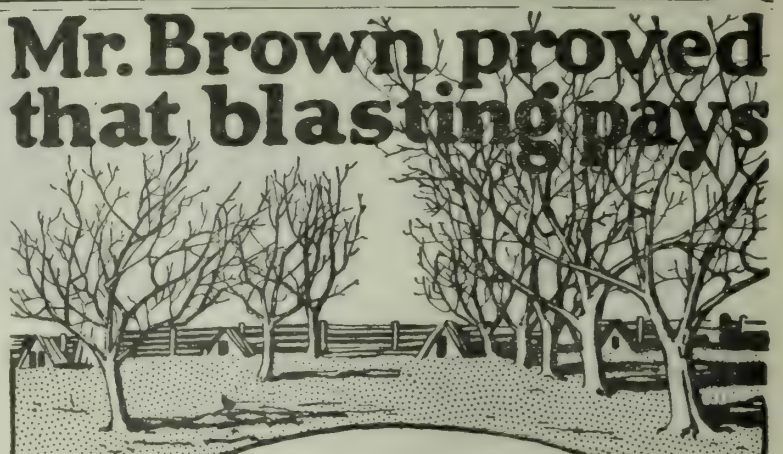
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Analyses of Soils for Plant Food Values and Alkalies. Agricultural and Industrial Products, Water, Insecticides, Etc.

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444Market St., San Francisco
CHEMICAL and BACTERIOLOGICAL ANALYSES, SOILS, WATERS, FEEDS, DAIRY PRODUCTS.

Mr. Brown proved that blasting pays



This shows part of the 18-year-old orchard of George W. Brown of Mount Cory. Trees in row at left were planted in ordinary dug holes; those at right were planted in blasted beds.

The trees in blasted beds now average 25 feet high with trunk girths of 42 inches. Those not in blasted soil average 18 feet high with trunk girths of 27 inches.

Plant your fruit trees in beds blasted with

GIANT FARM POWDERS
STUMPING — AGRICULTURAL

and *you* will find, as Experiment Stations have found, that "trees planted in blasted holes develop deeper and stronger root systems than trees planted in spade-dug holes," and will bear earlier and yield larger crops.

The two Giant Farm Powders are made especially to suit *western* farm and orchard conditions. They pulverize the soil instead of packing it. Ask your dealer for either of them—Giant Stumping or Eureka Stumping Powder—and for other Giant blasting supplies. Be sure to get the genuine, bearing the Giant brand. If your dealer has only ordinary dynamites, we will see that you are supplied with the real Giant Powders.

Book, "Better Orchard Tillage," FREE

Every fruit grower will find valuable information in our illustrated book, "Better Orchard Tillage." We send you a copy free—mark and mail the coupon. Other books, on stump blasting, boulder blasting, subsoiling and ditching, also free on request.

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Pests!



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No elaborate equipment necessary — no messing about with a sloppy spray mixture. "Corona Dry" is applied in dust form and gets the bugs before they start to eat the growing things. Call or write for a free copy of 20-page instructive book "Garden Pests and Their Control"—it tells how to get rid of all bugs, worms and plant diseases. Ask your dealer for "Corona Dry."

GERMAIN SEED & PLANT CO.
326-328-330 So. Main St., Los Angeles, Cal.

DECIDUOUS FRUITS.

The two new canneries at Hemet and Ontario began operations on apricots June 15.

An apricot crop on a little over 10 acres near Salinas recently sold on the trees for $5,000.

The Banning Canning Co. has about 400 tons of apricots and 1500 tons of peaches to can this year.

The Hanford cannery of the C. F. C. A. will commence operations about July 15. It was not run last year.

Sales Mgr. J. F. Wilson of the Cal. Growers' Ass'n reports heavy future sales of canned goods at attractive prices.

Rumsey apricots are practically all harvested, most of them having been shipped east, a few dried, and a few shipped to cannery.

That co-operative canneries will be built for the Stanislaus county clings, was the sentiment of a meeting of peach growers in Turlock June 18.

Sebastopol red Astrachans are ripe and being packed. Gravensteins will probably be ready early in July. Old trees bearing heavily this year.

The Cal. Growers' Ass'n recently elected Benton Ballou of Ontario president, D. E. Brown of Kingsburg vice-president, Claude Congdon of Hemet secretary-treasurer.

A deciduous experiment station of the University is urged by the Santa Clara Growers' Information Bureau. A small shipment of pears is to go east from Suisun June 24.

Pajaro Valley apple growers complain of the cheap scabby northwestern apples which ruin California's markets for good California fruit. They want scabby imperfect fruit excluded by law.

Shipment of pears from Sacramento county was forbidden by the county horticultural commissioners recently until June 24, when they should have reached maturity.

Under organization, prunes and apricots will be packed, to a large extent, by the same men and in the same packing houses as now. The organization merely proposes to market the goods.

GRAPES AND SMALL FRUITS.

Vineyard run Thompsons in Sutter county are reported to be sought at $30 per ton for drying.

Frost seems to have caused a large percentage of shot-grapes in the Tokay section, San Joaquin county.

Bowman (Placer county) berries have been shipping full force, while peaches and plums also are going out.

Forty-six express refrigerator carloads of Logan and blackberries had been shipped East from Sebastopol June 16.

The Calistoga district will not have over 10 per cent of a crop according to Napa horticultural commissioner J. J. Fox.

A new raisin tray to protect the fruit from dust and rain is said to have been perfected by a member of the San Quentin Agr. Club.

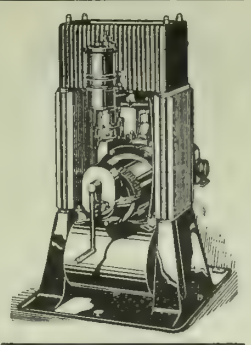
Raisin sales now are 20 per cent greater than at the same time last year. A 25-acre Tokay crop in Lodi district recently sold for $5.000 cash, the buyer to sulphur, cultivate, and harvest the crop.

SULPHURING DRIED APRICOTS.

To the Editor: Our letter on "quality dried apricots" states that 5 lbs. of sulphur to 200 lbs. of fruit is ample. This should read 1200 lbs. instead of 200, the original statement containing a typographical error. We note that you quote this statement in your June 17 issue. 1200 lbs. of fruit is about the capacity of the common Santa Clara Valley one-car sulphur-house.

San Jose. G. E. Merrill.

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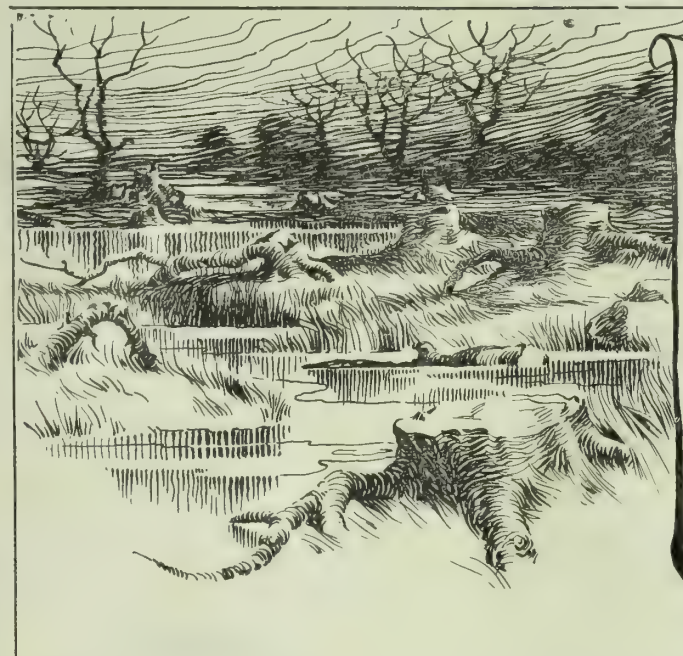
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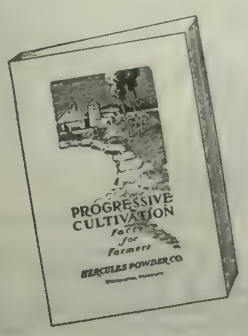
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Breeding and Testing Pays in Heifers.

[Written for Pacific Rural Press.]

The practices of weighing and testing milk to determine its butter-fat, and building up grade herds by the use of registered sires are growing ones, but seldom can the financial benefits be so easily pointed out as in the experience of T. J. Baltimore of Gridley.

For the last six years Mr. Baltimore has been weighing and testing milk from his herd, having missed but two months testing in all of that time. For the last four years he has been using registered Guernsey bulls. Since the heifers from these bulls freshened, he has been offered $75 to $90 a head for them; whereas the ruling price for grades sired by mongrel bulls and out of untested daughters has been $50 to $70. He has not sold them, for he is using them to replace some of his older and lower-producing animals.

The increased value of females is not the only benefit from the six years' weighing and testing of milk. It has also furnished him with a tab on feeds as well, a case in point being the advantages of good pasture. The first two years the herd was tested, the average for every cow in the herd was one pound of fat a day for the entire year. During that time they had free access to a low pasture where good green feed was abundant all the year round.

Later this land became unavailable; and since then it has been impossible to maintain such a high average. This spring a stave silo has been erected and filled with the first cutting of alfalfa.

As a result of his success with Guernsey bulls on grade cows, Mr. Baltimore has purchased a few registered Guernsey cows, with additions to which he hopes to eventually develop into a purebred breeder. Already his increased heifer values have paid the cost of testing and the difference in price between scrub and registered bulls.

Hay and Forage for the Horse.

[By Prof. F. W. Woll, University Farm, Davis.]

[Continued from last week.]

Millet, sweet sorghum, and varieties of grain sorghum are used to some extent for horse feeding in the central states. Millet cut at the beginning of bloom and well cured makes a good quality of hay that is nearly equal to timothy in feeding value; late-cut millet is a poor horse feed. The grain sorghums are often cut and fed to horses, "heads and all," without threshing the grain.

Corn stalks and cereal straw are of value for wintering horses and young stock and may always enter into the horse's ration to a limited extent. Enormous values of these by-products in grain raising are wasted every year in this land of plenty. European farmers and horse owners carefully utilize straw for feeding horses and cattle. For horses the straw (preferably oat and rye straw mixed) as a rule makes one-third to one-fourth of the total roughage eaten. It is fed cut, moistened, and mixed with the grain feed.

Succulence.—Another class of feeds that should be mentioned in this connection is succulent feed, either silage or roots. The stomach of the horse is relatively small and cannot take as large amounts of bulky feeds as cattle can. The feeds mentioned contain one-tenth to one-third of dry substances, the rest being water, and it follows that these feeds can make only a small part of the ration of work horses. Succulent feeds are of especial value in stimulating the milk secretion of brood mares. Their value as appetizers and regulators of the digestion is also recognized by most horse owners.

Silage.—As much as 10 to 20 lbs. of silage made from well-matured Indian corn or sorghum varieties may be fed per head daily, provided care is taken to feed only freshly exposed silage, free from mold. Horses are more sensitive to moldy or musty feeds, apparently, than other farm animals; and unless bright, fresh, well-cured silage is available, it had better not be fed to horses at all.

Root Crops.—Of the different root crops, carrots are fed mostly to horses, 5 to 6 lbs. per head being an average daily allowance for work horses. More may be fed to brood mares and young horses, if desired. The carrots are preferably fed sliced, longitudinally, so that they may not choke the horse. Sliced beets and potatoes are also fed to horses at times, especially in Europe, and are then generally mixed with cut straw or hay, in amounts up to 10 lbs. per head daily.

There are many points as to feeding this class of animals that have not even been referred to, like pastures for horses, different systems of feeding, rations for different kinds of horses, etc. These will be covered in other papers of this series. In a second article we shall consider the other parts of the horse's ration: the grain feed or so-called concentrates.

SECOND GROWTH FETERITA POISON.

To the Editor: Is second growth feterita injurious to stock?—W. T. S., Capay.

[Answered by Prof. F. W. Woll, University Farm, Davis.]

[Green growth which comes after the main plant has been checked either by frost or extreme drouth is dangerous on account of containing substances that yield prussic acid. This poison decomposes when the green growth is dried.]

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Hogs on Young Fruit Ranch.

[Written for Pacific Rural Press.]

S. S. Southworth of Napa county turns off between 65 and 70 purebred Durocs a year from his 52 acres of land. At the same time, he is growing 32 acres of young orchard.

Like most of the hog growers of that district Mr. Southworth grows Indian corn as the chief grain crop, planting it between the rows of trees. Beets are also grown between the trees on a small piece of bottom land; and pumpkins are planted in the tree rows.

The farrowing pens on this ranch are located on a high piece of land, well drained by a deep gulley. Adjacent to this is a five-acre field of alfalfa which furnishes pasture during the summer. Another small field on the other side of the farrowing quarters provides winter pasture.

The brood sows are fed tankage and middlings while suckling the pigs. After weaning, the pigs are turned into the alfalfa pasture and fed corn on the cob, with tankage in a self-feeder.

Pumpkins and beets furnish the main succulent feed during winter; and at times a ration of three parts corn and one part ground alfalfa is fed to the brood sows.

Mr. Southworth does not believe it advisable to crowd the trees with inter-crops; and this year has two rows of corn in each middle. Last year he had four.

Mr. Southworth believes that too many breeders have sold hogs for breeding, regardless of their quality. He expects to cull heavily, selling only his best hogs for breeding, and consigning the rest to the pork lot.

TEMPORARY HOG FENCES.

[Written for Pacific Rural Press.]

A 20-acre hog ranch with no permanent fence except the one along the boundary lines. Such is the situation on the Hayden Smith ranch near Woodland. In many respects it is more satisfactory than if permanent cross fences were used.

Panels three feet high and 16 feet long are used by Mr. Smith instead of wire fence, allowing "one to fit the pen to the number of hogs it is to hold."

The usual way of using the panels is to make a fence of them along the levee of an alfalfa check, where a water pipe from the tank houses is also laid, with a small tank and float valve at regular intervals. Pens are then made with the panels, across the check, set zigzag so that they are self-supporting.

The houses, which are made almost square, with a removable roof for ventilation, are on runners so that they may be readily moved by team. They are usually at the rear end of the pen.

As soon as the alfalfa is pastured down along the entire check, the panels are moved to the next check, which has been irrigated previously and is in fine growing condition. In this wise the entire 20 acres can be pastured, and the hogs do not interfere with irrigating, and vice versa.

Mr. Smith raises purebred Duroc-Jerseys, usually keeping about 15 brood sows and a couple of good herd boars. At present, he is using an old boar, U. F. Royal, an outstanding animal which he purchased from the University of California, when they were no longer able to use him.

Besides alfalfa pasture, the hogs are fed tankage, rolled barley, and middlings. While these have to be purchased, enough hay is sold each year to pay for the mill feeds; and the breeding stock sold from the ranch represents the income.

HOG LICE KILLED WITH AUTO OIL.

[Written for Pacific Rural Press.]

Crude oil is one of the accepted cures for lice on hogs, but while effective, it does not make an attractive looking hog, especially if it be a red or white one.

Fully as sure a cure for lice and not more expensive is the residue oil from the crank case of an automobile, according to John Daggs of Modesto, who buys it cheap from local garages.

It is not used on fence posts, but poured into a concrete wallowing hole that is always kept filled with water. The hogs dip themselves in the water—they also give themselves a thin coating of oil, which kills the lice.

Mr. Dairyman or Breeder---

Do you want to improve the butter-fat output of your herd? If so, I have just the bull you want.

Pietertje Cornucopia Creamelle

His dam on her first test made a record of nearly

25 Pounds, Testing 4.7 per cent.

He is just ready for service and just the sire for your herd.

Write, or come and see him.

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Butter 7 days 26.41 Milk 605.5
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She is a daughter of Ignaro De Kol, ten of whose daughters have records above 20,000 pounds milk, including Aralia De Kol 28,090. Three nearest dams of this bull average 26.68 lbs. butter, 668.8 lbs. milk. Dam and sire's dam average 920.27 and 24,543 lbs. milk in yearly test. A full sister to his dam has produced 885 lbs. butter in one year.

Price and pedigree on request.



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Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

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DAIRYING AND DAIRYMEN.

The Sanitary Dairy of Modesto is shipping milk to Madera county.

The Orland Cow-Testing Ass'n has signed up 908 cows owned by 58 dairymen.

J. W. Benoit of Modesto, has a cow which he expects to make over 600 pounds of fat in a test now on.

The N. H. Locke Co. sold to the Hearst ranch, Pleasanton, the three-year Jersey bull Norma's Gertie's Son.

High-protein concentrates should be fed with silage for economical results according to U. S. Dept. of Agr.

The Kings County Creamery of Lemoore has been incorporated for $10,000. They will make butter and cheese.

Tuberculin testing of 2,616 Jerseys owned by E. C. Lasater of Texas, has recently been completed. No reactors found.

The Western Yolo Sheep Cheese Co. is reported to have made about 17,000 pounds of cheese since beginning operations April 26.

A Holstein consignment sale will be held at Hanford Oct. 18, the day before the Poland China sale. A number have already said they will consign.

The Stephens Dairy at Mission San Jose, Alameda county, has just completed a 126-cow dairy barn fitted with up-to-date appliances, twin silos, and a model milk house separate.

Gradual milk shrinkage or failure to breed may be due to lack of minerals in the feed of high-producing cows, according to Ohio Expt. Sta. Alfalfa is rich in minerals.

Ground was broken June 14 for the new creamery at Chowchilla to be operated by the Cal. Dairy Products Co. It is to be able to make 5,000 pounds butter and 10 tons of ice daily.

In the scoring test of the 141 dairies, supplying milk to Los Angeles, E. and J. Kellenberger won first prize with a score of 96.25. "Every cow in our herd is a pet," says Mr. Kellenberger.

Wisconsin leads the States in pure-bred Guernseys and the number of cattle under test for advanced registry. There were recently 88 Wisconsin members of the American Guernsey Cattle Club, of whom 50 had 215 cattle on test. New York was next.

C. W. Meyers of Standard, Tuolumne county, has just completed a 48-cow modern cement floored dairy barn and milk house. He is putting in a cement reservoir at some distance above the barn to get water pressure to flush out the manure into a ditch that will carry it onto alfalfa.

Among records made by cows owned by the Santa Anita ranch are: Diotime Clyde Korndyke, 5 yrs., 31.913 lbs. butter in 7 days; Molly Woodcrest Pontiac, 1 yr. 11 mos., 17.66 lbs. butter in 7 days, and 68.69 in 30 days; Filled Segis, 4 yrs., 26.54 lbs. butter in 7 days; Lily of Bloom 2nd, 4 yrs.., 27.51 lbs. butter in 7 days.

The Jersey cow, Dosoris Park Lily, owned in New York, produced 16,728 lbs. milk containing 957.4 lbs. fat in the year ending last Dec. 4. This was sold at 20 cents per quart, or $1,556.08. Valuing her grain at $37 a ton, alfalfa hay at $26 a ton, and silage at $5 a ton, Lily returned $1,357.16 over the cost of her feed.

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JNO. P. DAGGS, Modesto, California.—Breeder of the leading strains Duroc Jersey Swine. The best blood that can be had in the world. None better in the Daggs herd today. Daggs gone out of business, because he did not show at Fair. I should say not. He was just taking a little layoff; just a little rest from the hard work of the show ring. But not a rest from raising prize-winning Durocs and buying the leading strains of the world to improve his herd. So don't fail to write or come and see the Daggs Durocs before buying elsewhere.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—The kind that makes the money. Pure-bred—registered—cholera immune. An extra fine lot of weaned pigs—both sexes—representing the best and most popular blood lines this breed produces. Five different sires used. Can mate up not akin. Quality combined with size. Rapid growing—early maturing. A few nice fall gilts that will be bred and ready to ship in September. Write for prices and circular. C. B. Cunningham, Mills, Sacramento County, Calif.

REGISTERED DUROC-JERSEYS—Fall boars and gilts. Weanlings sired by an excellent son of the 1020-pound Royal Muncie. We have pigs sired by this boar weighing 240 pounds at 7 months, and out of line bred Golden Model, Crimson Wonder, Orion, Chief, and Colonel sows. For information write Haden Smith, R. 1, Box 84D, Woodland, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

BIG TYPE POLAND CHINAS—The profitable money-making hog. The hog for the farmer. The real mortgage lifter. Large herd to select from. Bred sows, bred gilts, open gilts, weanlings of both sex. Boars ready for light service. Extra special prices. Geo. A. Smith, Corcoran, Cal.

REGISTERED DUROC-JERSEY — Weanlings, shoats gilts and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES — World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BARGAINS IN CHESTER WHITES—Few excellent bred gilts, $30; sows, $35. Service boars, $20 and up. Weanlings, $10. Best blood lines. Only good individuals shipped. Dallas Bache, Hollister, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

DUROC-JERSEYS—Some great weanlings of both sexes by "RIVER BEND HIGH MODEL." Improve your herd by introducing this blood. RIVER BEND FARM, St. Helena, Cal.

FOR SALE—Fancy belted Hampshire hogs. Well belted young sows and boars registered. Prices reasonable. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonsall, California.

REGISTERED BERKSHIRES — BOARS — 5 and 6 months old $15 and $20 each. Also a few year-old ones. All pure-bred animals. G. A. Casey San Jose, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE, QUICK MATURING registered Berkshires—Both sexes, $10 each for weanlings. Older ones at farmer's prices. J. M. Bomberger, Modesto, Cal.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

DEL DAYO FARM—(Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen S. Day, Box 1140, Sacramento.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

REGISTERED DUROCS from Eastern sows. One yearling and several Fall gilts. No culls. S. S. Southworth, Napa, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

FOR SALE—Two and three months old thoroughbred Poland China Boars. Mrs. M. A. Rodgers, R. 1, Box 34, Galt, Cal.

POLAND-CHINAS 250 lbs in six months our aim Imported sows. None better. Linn & Porter, Route A., Modesto, Cal.

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REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, $10. H. E. Boudier & Son, Napa.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

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REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

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30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRE PIGS — Write or call Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM — Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

CHAS. GOODMAN — Breeder of high-class Berkshire Swine. Williams, Cal.

POLAND CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

READAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

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REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE — C. D. CONWAY, Ripon, Cal.

REGISTERED DUROCS—H. N. Leininger, R. D. 4, Chico, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

SHEEP AND GOATS.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

THE BULLARD FLOCK RAMBOUILLETS — Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

FOR SALE—Shropshire bucks, yearlings and lambs. Individuals to car lots. Purebred but not registered. J. R. Bloom, Dixon.

KAUPKE BROS., WOODLAND, CAL.—Breeders and importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

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BEEF CATTLE.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francico.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

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REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEIN bull calves. Sired by Lorena Korndyke Alcartra, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

FRANK MEACHAM, Petaluma, California — Breeder Red Polled Cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

VANDERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

COWS—30 head. Good Grade Jersey Milk Cows at $60 each. F. H. Webb, Escondido, Cal.

DAIRY CATTLE.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller and Lux, Colony Farm, Dos Palos, Cal.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. $100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS — Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal

THE McCLOUD RIVER LUMBER CO., McCloud, Cal. —High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

BULL CALVES from a grandson of Colantha Johanna Lad and from a son of King of the Pontiacs. J. W. Benoit, Route C, Modesto, Cal.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke Co., Lockeford, Cal.

HOLSTEIN BULLS out of A. R. O. cows, sired by a son of King of the Pontiacs. Prices reasonable. J. H. Harlan Co., Woodland, Cal.

REGISTERED HOLSTEINS—32 high-grade Holstein heifers coming fresh this Fall for sale. E. E. Freeman, Route B, Modesto, Cal.

TWENTY-EIGHT high grade yearling and two-year-old Holstein heifers for sale; some bred. K. W. Abbott, Milpitas, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEY BULLS from egister of Merit cows. D. F. Conant, R. "B," Modesto.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BEEDERS OF A. R. O. Holstein-Friesian cattle exclusively. Dirk Dairy Farm, Lemoore.

REGISTERED JERSEYS — Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young Stock for sale. W. J. Hackett, Ceres, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd, D. & H. Rowles, Modesto.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

HORSES AND MULES.

HORSES—FOR SALE—30 head horses and colts; 11 head broken, 5 3-year-olds, 3 2-year-olds, 6 yearlings and 5 suckling colts. Price $2200, or will consider rolled barley to full amount in exchange for tractor (track layer type) to $1,500; balance cash. Box 128, Lancaster, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc. 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells live stock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

McClure Farm Offers Two Bargains In

Fine Holstein Bulls

ready for service; Sire King Pontiac Netherland Segis; his sire King of the Pontiacs; his dam, K. S. P. Netherland, a 24-pound 3-year-old. Both out of A. R. O. cows.

E. O. McCLURE,

R. F. D. C., Box 420, Modesto, Cal.

This represents 5 per cent interest on $27,143. Her heifer calf is valued at $2,000.

SWINE BREEDERS AND SWINE.

California Swine Breeders Ass'n meets at Hanford during the fair week.

Kings county Fair directors have added special classes with double awards, for Holsteins and Poland Chinas.

Glenn county swine growers met the supervisors June 20 to elaborate a plan of hog cholera quarantine and inspection.

James Cass of Cayucos writes that he has gone into the registered Duroc game. This is his third hog venture since the first at Ione in 1853.

The Del Dayo Farm has sold to G. O. Lovett, Mgr. Galland-Lowenstein ranch at Germantown, 8 Berkshire gilts; and to the Kinney ranch, Walnut Creek, one gilt.

The U. S. Government has discovered a new method of producing sterile hog cholera serum. Extract of navy beans is added to immune blood which is then centrifuged to remove the red cells, after which the clear serum may be sterilized by heat. Addition of ordinary salt enables the recovery of 74 per cent serum.

OTHER LIVESTOCK.

Wool was sold in Mendocino county last week at 30¾ cents.

A new raid by the French upon California horses for the war is being rapidly executed.

During 1915, California horses numbered 493,000, but were of same total value as the 503,000 in 1914, according to State Statistician Geo. Robertson.

It is reported that Eastern meat dealers expect meat prices higher than ever before for several months following July 1. Much meat has been sent to Europe.

John M. McMarble of Los Angeles county recently received four very fine registered Romney ewes from New Zealand. He purchased a pure-bred Romney buck at the P. P. I. E. last fall.

C. E. Barnhart of Suisun plans to show, at the State Fair, some of his registered Shropshire bucks and grade ewes, bucks, and lambs. He has 3200 ewes and also some Durham cattle.

A. H. Mc Innes of Red Bluff has recently purchased 6,000 high grade Rambouillet yearling ewes from Idaho. They will be driven all the way. He paid $6.60 per head.

CARRUTHER'S BERKSHIRE SALE

Swine breeders will be interested in the announcement of Carruthers Farm that the first annual auction sale of Berkshires from their large herd will be held during the early part of August.

Mr. Carruthers has aptly termed this the "greatest sale of 'Rival's Champion Best' Blood ever made." His herd is almost entirely of this blood, which he secured from Rookwood Farms at Ames, Iowa, owned by Dean C. F. Curtiss of the Iowa Agricultural College.

While a comparatively new herd in the state, the quality of Carruthers Farm Berkshires was ably demonstrated at the Panama Pacific Exposition last fall when a large portion of the prize money was awarded to them. Since then competent Berkshire judges have pronounced the band of brood sows on this ranch to be one of the choicest large herds in the United States.

Mr. Carruthers is a firm believer in annual auction sales, if properly conducted, and expects to dispose of a large part of his choicest young breeding stock at this sale in order to insure the success of future sales. In order that buyers may take advantage of the sale to strengthen their show herds, all animals will be entered before the sale in their respective classes at the coming State Fair at Sacramento.



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WHETHER you hike for "the game" or whether you go to town, or keep right at work, B. V. D. Underwear will give you more genuine comfort than you ever had before.



Loose fitting, light woven B. V. D Underwear starts with the best possible fabrics (specially woven and tested), continues with the best possible workmanship (carefully inspected and re-inspected) and ends with complete comfort (fullness of cut, balance of drape, correctness of fit, durability in wash and wear).

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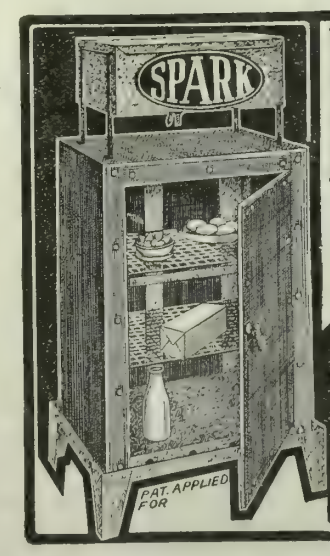
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B.V.D. Closed Crotch Union Suits (Pat. U. S. A.) $1.00 and upward the Suit.

B.V.D. Coat Cut Undershirts and Knee Length Drawers, 50c. and upward the Garment.

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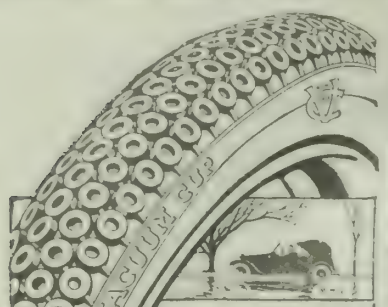
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Insure the Quality—the Safety costs you nothing

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a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

will clean it off without laying up the horse. No blister, no hair gone. Concentrated—only a few drops required at an application. $2 per bottle delivered. Describe your case for special instructions and Book 8 M free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Veins, Bruises, Varicose Veins; allays Pain and inflammation. Price $1 and $2 a bottle at druggists or delivered. Made in the U. S. A. by
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Shorthorn Bulls
and
: : Heifers : :

On April 21st we arrived from Missouri with a carload of choice registered Bulls and Heifers.

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Perkins, Sacramento Co., Cal.

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.

Write or call and see us.
SWINELAND FARM,
W. O. PEARSON, Prop.
Woodland, California

GET STARTED RIGHT.

Registered DUROC JERSEYS

Service Boars from Prize-Winning Stock are money makers.
They grow faster. Send today.
NEW ENGLAND CALIFORNIA CORPORATION,
Ripon, California.

Veterinary Queries.

BLOAT ON GREEN HAY.

To the Editor: My cows bloat on hay, the last crop of last year. The hay was a little green. I salted it well. I lost a heifer.—J. E. W., Hughson.

[Your trouble is with the hay. It has been improperly cured and the salt will not remedy this.]

CALVES' EYES WATER.

To the Editor: Ten calves water from the eyes—no matter comes. I feed skim milk. How many pounds of milk in a gallon?—W. J. C., Finley.

[This is a cold. Place a few drops of a 25 per cent solution argyrol in the eyes twice a day.] [Practically 8 pounds of milk per gallon.]

HORSE HAS WART.

To the Editor: A wart on the side of my horse's head chafes and bleeds.—W. C. M., Saratoga.

[Paint the wart with a 5 per cent solution chromic acid once daily until it disappears.]

SWELLING UNDER TONGUE.

To the Editor: A cow has a lump under her tongue between the jaws. It is about 6 inches long and 3 to 3½ inches through. Liniment has no effect. It is not fast to the bone. —J. A. G., Chico.

[Have a qualified veterinarian lance this and prescribe treatment.]

LUMP ON HORSE'S HEAD.

To the Editor: My horse has a lump just back of where poll evil comes on. He acts as if he had a headache now, though it didn't bother him a year ago.—W. M. W., Groveland.

[This is poll evil. Have a qualified veterinarian operate.]

HORSE FULL OF WATER.

To the Editor: My 3-year horse became sickly, walked a little lame. As I was driving to town, he stopped short and acted as if he would drop dead. Later, on going to the veterinarian he staggered backward and dropped dead. I cut him open. He was full of water.—H. G. N., Dinuba.

[This was ascites. There is no remedy absolutely effective.]

COW GRUNTED AND STAGGERED

To the Editor: One of my milk cows started to grunt and could scarcely walk and stopped giving milk. I gave her a good dose of liniment. She stopped grunting but looks miserable.—H. G. N., Dinuba.

[Cut out the liniment and use epsom salts in two-pound doses.]

CALF SCOURS.

To the Editor: About 10 two-months calves became sickly. Three of them died. Had scours. Droppings thin as water.—H. G. N., Dinuba.

[Give them three 30-grain tablets sulpho-carbolates twice a day and cut the feed in half.]

BLOODY MILK — LUMPY TEATS.

To the Editor: My cow gave bloody milk from all four teats shortly after calving. I gave her potassium iodide and it stopped in a few days. A few weeks later a hard lump developed for a few days in one teat in the upper part and the milk from this teat was bloody. A similar lump came in another teat a month later. There was a scratch or bruise on the skin. The milk was bloody for a few days. Two weeks ago one quarter of her udder became caked and next day the milk was ropy and slightly reddish. This lasted a day or two. This evening the same quarter is hard.—A. L. P., Kingsburg.

[Have this cow tested for tuberculosis.]

BERKSHIRES AT AUCTION

47---HEAD---47

The Greatest Sale Ever Held of
"RIVAL'S CHAMPION BEST" BLOOD
AT
CARRUTHERS FARMS, MAYFIELD, SAN MATEO CO., CAL.
AUGUST 2, 1916.

At this, our first annual sale, we will offer 44 head of daughters and granddaughters of the Premeir Berkshire Sire, Rival's Champion Best, considered by the best judges to be the greatest sire of the breed today.

Included in this sale will be 5 SHOW YEARLING SOWS, 4 TWO-YEAR-OLD SOWS, 15 UNDER-A-YEAR SOWS, SEVERAL SOW PIGS, ONE SENIOR YEARLING BOAR, ONE JUNIOR YEARLING BOAR, and an UNDER-A-YEAR BOAR SIRED BY RIVAL'S CHAMPION BEST AND OUT OF ROCKWOOD LAUREL 17th.

At no sale in recent years have as many high class Berkshires been offered as in this sale. Every hog will have breeding and individuality.
(See this space next week for further details.)
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COL. W. H. HORD, Auctioneer.
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MAYFIELD, CAL.

KNOB HILL STOCK FARM

Registered Big Type Poland Chinas : : :



SOME TYPICAL KNOB HILL BROOD SOWS.
(Large type, combined with high quality.)

Our herd is nominated in the California Poland China Futurity to be held in connection with the State Fair this fall. We have just imported and added to the herd some of the best blood of the East, including boars from W. J. Hather, Ord, Neb., and Peter Mouw, Orange City, Iowa.
We are offering pigs of both sexes from prize-winning stock. Litters coming at all seasons and stock usually on hand to suit customers.

Come and see them, or write for what you want.
ALL STOCK REGISTERED. ALL BREEDING GUARANTEED.
A. M. HENRY, Prop. **Farmington, Cal.**

SANTA ANITA RANCHO

ANOAKIA BREEDING FARM

HOLSTEIN CATTLE The breeding herd of registered Holstein cattle at Santa Anita Rancho is made up of individuals selected strictly upon their merits as producers, high individual quality, and production and proven transmitting power of their ancestors. PRINCE GELSCHE WALKER, whose combination of breeding, individuality, and the production of his daughters stamp him as one of the greatest young sires of breed.

Females in the herd are making large official record as rapidly as they freshen, and the herd is being developed to become one of the largest groups of high producers in the West.

At present a few bull calves are offered for sale. These are straight, well-marked youngsters, bred right, and priced moderately.

BERKSHIRE HOGS The breding herd of registered Berkshires has been carefully selected and represents the blood lines that are in the very first rank of the breed. The herd is headed by KINTYRE LAIRD, first prize junior yearling and reserve senior champion boar at Panama-Pacific Exposition. He is an unusually good type, and comes from a family noted for uniformity and prize-winning quality.

A few boar pigs are offered at this time.

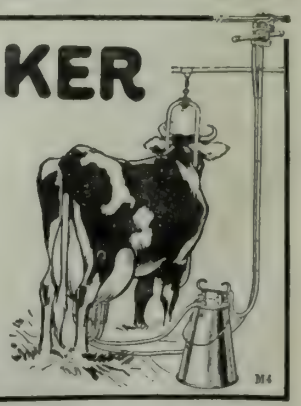
POLAND-CHINA HOGS In founding the herd of registered Poland-Chinas at Santa Anita Rancho, the choicest individuals of the most noted prize-winning families in the West were drawn upon and for uniformity, desirable size and quality the

At the head of the herd is BANKER'S BOY, junior champion and reserve grand champion at P. P. I. E.

Anita M. Baldwin W. H. TAYLOR, Superintendent.
Santa Anita, Cal.

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DUROC JERSEYS

Choicest blood lines in the West—Defender, Cherry Chief, Proud Colonel, Crimson Wonder, Missouri Model Top, and Freed's Colonel Breeding—for sale now. Bred sows, Bred Gilts, Herd Boars, extra growthy four-months gilts and boars. One or a car load. We are the largest breeders in the state. All stock cholera immuned. Ranches, Holtville and Devore, San Bernardino Co., Cal.
Address, **PETERS, LAMSON & WALKER,**
DEVORE, CAL.



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30x3	6.95	1.85	2.10
30x3½	8.95	2.10	2.35
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32x3½	9.95	2.25	2.45
34x3½	10.95	2.30	2.55
36x3½	12.05	2.40	2.75
30x4	13.20	2.80	3.10
31x4	13.85	2.85	3.20
32x4	14.05	2.95	3.30
33x4	14.70	3.10	3.40
34x4	14.95	3.15	3.50
35x4	15.65	3.20	3.60
36x4	15.85	3.30	3.70
34x4½	20.25	3.85	4.30
35x4½	20.85	3.95	4.35
36x4½	21.25	4.10	4.50
37x4½	21.90	4.15	4.60
35x5	23.65	4.70	5.20
36x5	23.95	4.90	5.35
37x5	24.90	4.95	5.45

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640 So. Center St.,
STOCKTON, CAL.

SILAGE AND BREEDING PAYS

[Written for Pacific Rural Press.]

Though some California dairymen are not partial to alfalfa silage, L. Kaiser of Biggs found that his cows preferred it to sweet corn, Egyptian corn or Egyptian wheat silage last winter.

Mr. Kaiser was short of silage crops last year, so filled his stave silo with all of the above crops, cutting about 40 tons of Egyptian corn first, followed by alfalfa, sweet corn, and Egyptian wheat. While the cattle seemed to relish all of the silage they cleaned up the alfalfa best.

His one year's experience has made him a great advocate of the silo, as it increased the average production of each cow in his herd five to 10 pounds although he started feeding the silage in extremely bad weather just after they had been taken off of alfalfa pasture and when they would ordinarily have dropped off in their milk flow.

It has been Mr. Kaiser's custom in former years to feed concentrates during the winter months in connection with alfalfa hay in order to maintain the milk flow; but it is now his belief that the silage is equally efficient.

A purebred Holstein bull, a grandson of Aralia De Kol, is being used on his grade herd. As an evidence that the grade dairyman can well afford to buy high class bulls Mr. Kaiser points to his average production per cow of 317 pounds of fat last year with a herd of 80 cows. Of this lot 36 were heifers with their first calves from the better bred bull; and according to Mr. Kaiser, "those were the ones that kept the average so high."

DRYING SWEET POTATOES FOR HOGS.

[Written for Pacific Rural Press.]

Cull sweet potatoes have been utilized as a hog feed by farmers in large sweet potato growing districts for several years; and experience has shown that at $3.50 a wagon load they are an economical feed.

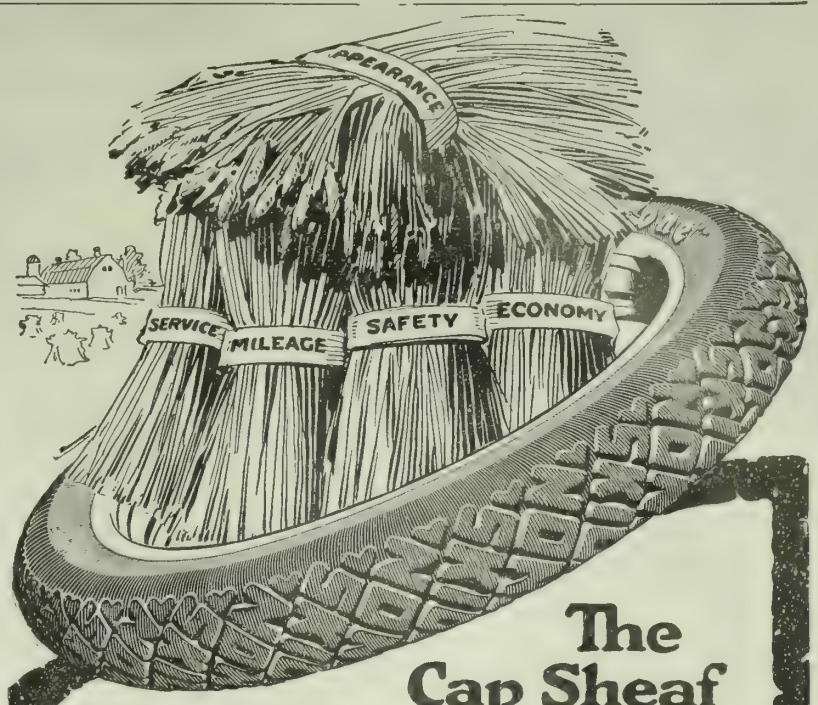
L. D. Collins of Denair, Stanislaus county, has fed sweet potatoes for the last couple of years to his purebred Duroc herd; but like all feeders of them found it impossible to keep them for any length of time after digging.

Last fall he experimented in drying them, in order to have a continuous supply during the entire year to feed with barley. He secured a regular root shredder, running them through that first and then laying them on fruit trays. In hot or windy weather they dry quickly and can then be stored in sacks.

The fruit trays were not altogether satisfactory as they retain moisture; and that tends to rot the potatoes unless the trays are turned. To overcome this Mr. Collins will stretch wire screen on a frame this year, allowing the air free circulation all around.

The loss in weight in drying is about 60 per cent, depending somewhat on the length of time the potato has been dug. In Mr. Collins' experience in feeding fresh potatoes he has found that his hogs will consume three times as much weight of fresh sweets as they will barley, and do better on them. As the loss from evaporation is not quite two-thirds he believes that a ton of the dried potatoes is worth as much as a ton of barley, and their cost is much less. In feeding them dry he uses one part potato and one part barley.

A. Giovanetti auctioned his 100 Durham, Jersey, and Holstein cows June 16.



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Pacific Rural Press Market Report

PRICES QUOTED AS PAID TO PRODUCERS

San Francisco, June 21, 1916.

WHEAT.

Little new crop wheat has appeared yet, but some Sonora arrived last week, and sales were made around $1.70 California club is nominal, while northern grain is coming in a little more freely, and has receded from the recent advance, with further declines expected.

Northern Club ....$1.70 @1.72½
Calif Club ctl..... Nominal
Northern Bluestem 1.82½@1.85
Northern Red .... 1.80 @1.90

BARLEY.

Trading in futures was quite active for a few days, but is now quiet again, though there is a fairly firm feeling. On the spot choice bright feed is a little firmer, and moves well while shipping is steady at the recent decline, being a little quiet owing to lack of transportation facilities. Considerable Eastern demand is reported.

Shipping, ctl. ....$1.35 @1.37½
Choice Feed, ctl. .. 1.27½@1.32½

OATS.

A few offerings of new red oats have appeared and sales have been made for stock to arrive at the old range. While there is no very urgent demand, the market is well sustained.

Red Feed .....$1.40@1.42½
White ..... 1.50@1.60

CORN.

Eastern yellow has been offered rather sparingly here of late, and as a result the price has advanced a little. Other lines are unchanged, all feed varieties finding a good country consuming demand, while comparatively little is handled locally.

Eastern Yellow, ctl.. $1.85@1.87½
Milo Maize ..... 1.40@1.45
Egyptian ..... 1.45@1.50

BEANS.

Beans retain all their recent firmness, and the advance continues on the leading lines: whites and limas. Both large and small whites are getting rather hard to find in round lots, and holders are taking a very firm view of the market, while the demand in some quarters is quite urgent. Limas continue to move off rapidly, and with prospects of a good cleanup values continue on the upgrade. While no further advance is noted on other varieties, there is a firm feeling in the whole list, with stocks moving off steadily and further advances expected. The new acreage is large, but cannot affect the market for several months.

(On wharf, San Francisco.)

Bayos, per ctl. .....$5.00@5.25
Blackeyes ..... 2.90@3.00
Cranberry Beans ..... 4.85@5.10
Horse Beans ..... 3.00@3.25
Small Whites (south) .. 7.10@7.20
Large Whites ..... 6.70@7.00
Pinks ..... 5.10@5.25
Limas (south) .....5.20@5.25
Red Kidney ..... 6.50@6.75
Mexican Reds ..... 4.90@5.25
Tepary Beans ..... 4.00@4.50

HAY.

Hardly any old hay is arriving now, requirements being met with new stock, which is arriving quite freely. New red oat hay is not yet arriving in any large quantity, and most offerings are of No. 1 and medium grades, all fancy hay being very scarce. Mixed barley and oat hay is plentiful, and finds considerable sale. There is considerable export business, but local buying is rather slow, as the trade is looking for some decline in values. The only recent drop has been on tame oat hay, while alfalfa has been in light supply and is higher.

No. 1 Wheat .....$12.00@13.50
No. 2 ..... 9.00@11.50
Tame Oats ..... 11.50@14.00
Wild Oats ..... 10.00@12.00
Barley .....10.50@12.50
Alfalfa ..... 10.00@13.50
Stock Hay ..... 7.50@ 9.00
Straw, per bale ..... .25@ .40

FEEDSTUFFS.

All lines of feed are quoted at the old figures. Trading is mostly of a small nature for routine requirements, while offerings in most lines are comparatively light.

(Wholesale prices, per ton, carload lots, San Francisco.)

Beet Pulp, per ton ..$22.50@23.50
Alfalfa Meal, per ton. 17.50@20.00
Alfalfa Molasses Meal, per ton ..... Nominal
Bran, per ton ..... 28.00@29.00
Oil Cake ..... Nominal
Cocoanut Cake or Meal 23.00@25.00
Cracked Corn ..... 40.50@41.50
Mddlings ..... 35.00@36.00
Rolled Barley ..... 28.00@29.00
Tankage 45.00
Rolled Oats ..... 29.00@30.00

VEGETABLES.

General supplies are arriving in a little better shape this week, though on the whole prices are fairly firm. Cucumbers are now arriving from several sources, and lugs from northern California sell around $1. Summer squash also is arriving freely in large packages, and is easier, while peppers and eggplant are getting down to the usual summer level. Rhubarb is firm with the crop about over, and asparagus is cleaning up well. Peas are easier, while beans are steady, with a good demand. Tomato prices hold fairly steady, though supplies are increasing. Arrivals of green corn have increased materially, causing much lower prices, and okra is much lower.

Cucumbers, lugs $1.00
String Beans, lb ..... 4 @ 7 c
Summer Squash, lugs, 1.00@1.25
Peppers, bell, lb. .... 10 @15 c
Rhubarb, box, bay ....90 @1.00
Asparagus, box ..... 1.25@2.25
Lettuce, small crate ...50 @65 c
Eggplant, lb. ..... 5 @ 8 c
Peas, lb. ..... 3 @ 4 c
Tomatoes, crate .....60 @90 c
Green Corn, sack, ...2.50@3.50
Okra, lb. ..... 5 @ 7 c

POTATOES AND ONIONS.

New potatoes are now coming in from several sources, but the supply is limited as compared with other years, and high prices still rule. Onions also are extremely firm, an Eastern demand having brought a sharp advance this week. The garlic crop is turning out unusually heavy, and values are rather easy.

New Potatoes, ctl. .....$1.75@2.25
Oregon Burbanks ..... 1.90@2.10
Onions, red ..... 2.60@2.75
Yellow, ... 2.35@3.50
Australian 2.50
Garlic, new crop, per lb... 6@7c

POULTRY.

The egg producers are now shipping in their young roosters, with the result that the market has its usual summer glut of young stock. Broilers and fryers are both lower. Hens are fairly steady, but prices are nothing extra, and Belgian hares are lower in sympathy with young chickens.

Broilers, 18 lbs. to doz. and less, lb. .....20@21c
do, over 18 lbs. to doz. ..21@23c
Fryers .....25@27c
Hens, extra, per lb. .....19@20c
Small .....15@17c
Smooth Young Roosters, per lb. .....25@28c
Squabs, per doz. ..... 2.00@3.50
Geese, per pair ..... 2.25@3.00
Ducks .....15@16c
Old .....14@15c
Belgian Hares ..... 8@ 9c

BUTTER.

The butter market has failed to recover any firmness, as arrivals have been very heavy for the last week, and the shipping demand has dropped off, keeping values at about the figure quoted.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	24½	24½	24	24	24½	24½
Prime Firsts	24	24	23½	23½	23½	23½
Firsts	23½	23½	23½	23½	23½	23½

EGGS.

Shipping demand has quieted down this week, which opened with another drop in prices; but the local trade has taken hold a little better in the last few days, bringing a partial recovery.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	25½	24½	24½	23½	24½	24½
Sel. Pullets	23	22½	22½	21½	22	22½

CHEESE.

The local demand has been quite active of late; but new stock has been coming in freely, and half a cent has been lost from the last figure in flats, Y. A.'s being unchanged.

Y. A.'s fancy .....16 c
Fancy Calif. Flats, per lb. ....15 c
Monterey Cheese .....16@17 c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	27	26	25½	25	25	25
Eggs	24	24	23	22½	25	25

DECIDUOUS FRUITS.

All kinds of berries are coming in freely, including a good deal of trashy stock, and easier prices prevail on strawberries, raspberries, logans and currants, with little stock that will bring the top quotations. Green apples are arriving in considerable quantity, but cold storage stock is still in the market. A few pears have appeared, but are not yet much of a feature. Cherries as a rule are lower, though the crop is about over and offerings are decreasing. Good apricots are very firm, though there is considerable poor stock offered which brings irregular prices. Peaches are in fairly good supply at lower prices, and figs have dropped sharply. Clyman plums are lower, but tragedies are still quite firm. Larger offerings of cantaloupes have met a much heavier demand, preventing much recession of prices; and watermelons at lower figures have found a fair call for the last few days.

Currants, chest .....$3.50@5.00
Loganberries, chest .... 1.50@3.00
Gooseberries, lb ..... 3@6 c
Blackberries, chest .... 4.00@5.00
Raspberries, chest ..... 5.00@7.00
Strawberries, chest .... 3.50@8.00
Apples, old ..... .75@1.00
green, box ..... .65@ .75
Pears, 20-lb. box, ... .65@ .75
Cherries, black, 10-lb bx .75@1.00
White, do ..... .90@1.00
per lb., black ..... .07@ .10
White ..... .05@ .15
Apricots, crate ..... .75@1.20
do. lugs, ...1.00@1.25
Peaches, crate, ... .75@ .85
Figs, black, box ..... .40@ .50
White ..... .50@ .65
Plums, crate, Clyman .. .50@ .90
Tragedy .....1.00@1.15
Cantaloupes, standard crate .....1.00@1.25
Watermelon, lb. .....1¼@1¾c
Grapes, Thompson, crate 1.25@1.75

DRIED FRUITS.

There is no sign of easiness in the dried fruit market, and in fact the trade seems more disposed to meet the prices that are being asked for new crop fruit, though buying is naturally on a very conservative scale, especially on such fruits as apricots, a car of which ties up too much money to be purchased off-hand. Packers, however, are paying as high as 13½c. for choice goods, and admit that this price is justified, in view of the prices paid by canners and shippers, who are likely to get the bulk of the crop. Prunes are very firm, and the trade is taking hold in a little better shape, as there is no indication that growers will recede from their position, Eastern buyers still show some reluctance, but there is more activity in covering early requirements. The local trade is taking hold of new crop peaches with confidence, conceding that the growers' organization has the situation well under control. There is a general expectation that higher prices will rule on raisins.

Apples, old crop .....5½@6 c
Apricots, per lb. 1916..12½@13½c
Figs, white, 1916 .... 6½@ 6¾c
Black, 1916 ..... 5 @ 5½c
Calimyrna, 1916 .....9 @10 c
Prunes, 4-size basis, 1915 5 c
1916 .....5 @6 c
Peaches, old .....4¾@5 c
1916 .....5¾@6 c
Pears .....5 @6½c

(Associated Raisin Co. Prices)

Fancy Seeded, 16 oz. .....7 c
Choice Seeded, 16 oz. 6¾c
London Layers, 3-crown, 20-lb. box, 1916 .....$1.30
Imperial Clusters, 6-crown, 20-lb. box, 1916 ..... 2.75
Bulk, layers, 50-lb. box. 1916 2.75

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento June 19, 1916.

An unprecedented high market continues to remain firm on all varieties except peaches, which have slumped because sizes have been up to date unusually small. The fruit seems to have ripened without sizing.

Bartlett pears are moving in small lots, though an effort is being made by all shippers to hold back the movement of pears until the middle of this week, in order to prevent the shipment of immature fruit to the Eastern markets, the arrival of which usually has a depressing effect upon the demand.

Pears from practically all districts, with the possible excepton of Placerville and Colfax, are sizing up at the same time; and this would indicate that the movement will be heavy in ten days and will be very short lived. Considerable difficulty will be experienced in securing Bartletts for desirable assortments within a month.

Apricot shipments are practically cleaned up, after having had a wonderful season, the best in the history of the State; and indications are that the balance of the fruit will sell equally well, though Eastern competition may depress the market at times during the season.

The first shipment of Thompson Seedless grapes will move from Coachella Valley Wednesday; and Malagas will be ready for shipment the last of the week.

Prices for the week:

New York: Royal cots averaged, $1.50; Clyman Plums $1.12; Formosa, $1.62; Climax $1.58; Beauty $1.55; Burbank $1.28; Tragedy $1.76; Royal Anne Cherries $2.10; Republican $2.25; Bing, $2.45; Alexander Peaches, 86c.; Triumph, 82c.; Wilder Pears H. B. $1.92; Comet, $2.13.

Boston: Clyman Plums, $1; Climax, $1.65; Beauty, $1.75; Formosa, $1.75; Burbank, $1.12; Red June, $1.47; Tragedy, $1.95; Royal Cots, $1.25. Alexander Peaches, $1; Wilder Pears H. B. $1.50.

Chicago: Climax Plums, $1.48; Tragedy, $2; Abundance $1.20; Formosa, $1.55 Clyman, 98 c.; Burbank, $1.38; Beauty, $1.65; Royal Cots, $1.46; Alexander Peaches 85c.; Sugar Pears 1.27.

[Total shipments to June 2, 1228 carloads as against 660 to same date last year, This is 440¼ carloads since last report.]

Special Livestock Market Report.

Cattle are down a little in San Francisco. The demand is lightest in June of any month of the year since people are off on vacations, schools closed, and grass stock can go cheaper anyway. Still an oversupply of stock. Portland slow except for well-finished cattle.

Hog receipts are a third less than for two weeks but enough.

Sheep have been coming about as last week, but not enough, so prices are advanced on wethers.

Wool still strong but no change in prices. Cloverdale sales on today. Mendocino sales last week made at 26½c for 6 mos. and 31½ for year staple.

Classified Advertisements

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WE HAVE ONE SECOND HAND Southwick Horse Power Hay Press, in good condition. If interested, write for price. Dixon & Griswold, 146 North Los Angeles St., Los Angeles, Cal.

FOR SALE—Threshing Machine, 16x32-inch cylinder. Self-binder. 5 ft. cut. Cheap; in good condition. Trade for cows or heifers. Address T. G. Hester, Morgan Hill, Cal.

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TREES AND PLANTS.

AVOCADO TREES for sale, fine field-grown budded of Budded Avocados. Newberry-Sherlock, R. F. D. 2, Pasadena, Calif.

FOR SALE—Spineless Cactus Plants. Prices right. B. C. Engbert, Byron, Cal.

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WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. K. Humphrey, Principal, Stockton, Cal., Box 704.

SITUATION WANTED ON FARM by married man with family. Qualified by experience to handle almost any kind of place. The man you are looking for if you need a competent and dependable superintendent. Address Box 34, Santa Fe, New Mexico.

WANTED—Experienced man and helper to care for 40-cow dairy. Milk with machines; make some butter; must give good reference. Box 220, Pacific Rural Press.

WANTED to hear from owner of good farm for sale. Send description and cash price R. G. List, Minneapolis, Minn.

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CALIFORNIA GARDEN FLOWERS
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$1.50 Postpaid, Pacific Rural Press

CITRUS FRUITS.

Navels were out of the eastern auctions June 19. Citrus markets are firm and higher on the seaboard; slightly easier in central west. Central Calif. is about through shipping oranges for the season. In New York, June 19, Valencias averaged $3 to $4.65; lemons $3.80 to $4.30; grapefruit $2.50 to $4.25. At Boston, Valencias $3.45 to $3.90; lemons, $3.50 to $4.40. At St. Louis four cars sold and market easier, averaging $2.75 to $3.60 for Valencias and $3.15 for lemons. Locally there is not much movement.

HONEY.

There is still a very fair demand locally, as supplies have not accumulated much, but the situation is easing off a little as the new crop continues to come in, and there has been some recession in prices for comb honey. Dark extracted is hard to move, but the better grades are fairly firm.

NUTS.

The Almond Growers' Exchange is getting in reports on the crop outlook, which are still incomplete. The old acreage, however, appears to be short, the crop being between 50 and 75 per cent, but there is considerable new acreage this year, which is expected to nearly make up for the shortage. The Exchange is fully sold out on orders subject to approval of prices.

HORSES.

Some fairly interesting sales have taken place in San Francisco this week, including a small lot of high-bred saddle stock and a large lot fresh from the country, which consisted mainly of medium heavy drafters and wagon horses, among which were a good proportion of attractive animals. These offerings have brought out a little more show of interest than has been noted of late, but on the whole buyers have been conservative, and it is not easy to obtain satisfactory prices. Local buyers still have difficulty finding stock in the country at attractive prices, as all available stock is being picked up for military use.

(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs and up	$ 250
Drafters, 1550 to 1650	150@200
Chunks, 1350 to 1500 lbs	150@175
Wagon horses, 1050 to 1350 lbs	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@ 75
Farm workers	50@100

LIVE STOCK.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)

Steers, No. 1	7 @7¼c
No. 2	6¾ @7 c
Cows and Heifers	5¾ @6 c
No. 2	5 @5½c
Bulls and Stags	4 @4½c
Calves, light	7½ @8 c
Medium	7 @7½c
Heavy	6 @6½c
Hogs, grain-fed:	
100 to 150 lbs.	7¾c
150 to 250 lbs.	8¼ @8½c
250 to 325 lbs.	7¾c
Prime Wethers	7 @7½c
Spring Lambs, f. o. b. country points	$5.00@5.50

DRESSED MEATS.

(Wholesale prices to dealers.)

Steers	10½ @11 c
Veals, large	12½ @13 c
Small	13 @14 c
Prime Wethers	14½ @15 c
Spring Lambs	16 @17 c
Hogs	11 @12 c

WOOL.

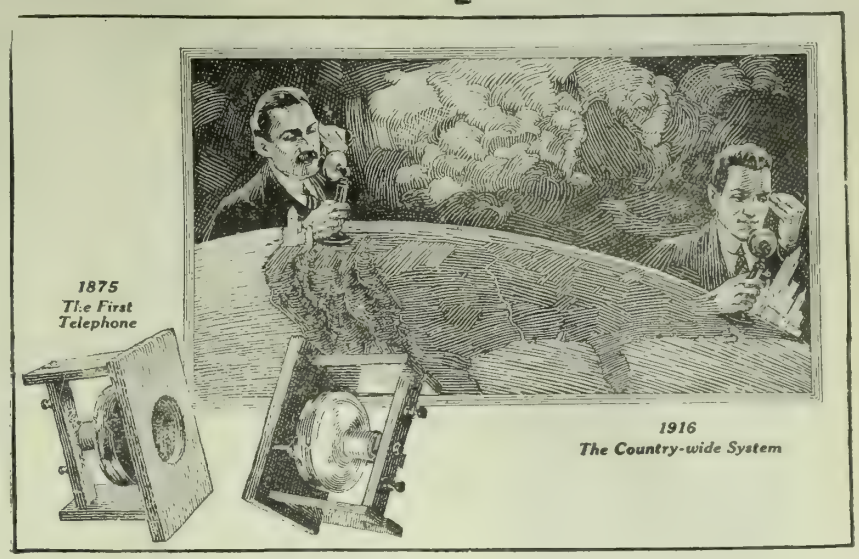
(Prices paid in the country.)

Red Bluff, year's	25@27c
Sacramento Valley, year's	19@25c
Mendocino, year's	31@32c
Mendocino, 7 months'	26@27c
Southern, year's	18@21c
Southern, 7 months'	15@18c
Imperial Valley, year's	17@19c
Imperial Valley, 7 mos.	14@15c
Nevada	21@23c

Publisher's Department

This issue completes the ninety-first volume of the Pacific Rural Press and an alphabetical index of the contents will be found on another page. The publication of this index and a rush of advertising orders just before press time crowded out some interesting articles scheduled to appear, but we hope to make amends to our readers in future issues. The advertisements will be found of much interest, however. Read them.

179 new names were added to our subscription list during the past week.



Forty-one Years of Telephone Progress

The faint musical sound of a plucked spring was electrically carried from one room to another and recognized on June 2, 1875. That sound was the birth-cry of the telephone.

The original instrument—the very first telephone in the world—is shown in the picture above.

From this now-historic instrument has been developed an art of profound importance in the world's civilization.

At this anniversary time, the Bell System looks back on forty-one years of scientific achievement and economic progress, and gives this account of its stewardship:

It has provided a system of communication adequate to public needs and sufficiently in advance of existing conditions to meet all private demands or national emergencies.

It has made the telephone the most economical servant of the people for social and commercial intercourse.

It has organized an operating staff loyal to public interests and ideals; and by its policy of service it has won the appreciation and good will of the people.

With these things in mind, the Bell System looks forward with confidence to a future of greater opportunity and greater achievement.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES
One Policy *One System* *Universal Service*



The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends: The old saying—there is nothing new under the sun—certainly does not apply to handbags, for each season sees something different.

I saw pretty silk bags this week in white, rose and black trimmed with rows of ruffles of the same material as the bag. In the same window were black leather bags with wide bands of white leather trimming and the same style was developed in rose and white leather. There are also plain white silk bags in simple designs.

The fad for wrist watches is still popular—so much so in fact that jewelers are making over the old style chatelaines watch into the bracelet watch. You can have this done for $5.00. That includes the bracelet and the labor. The effect is prettier if your watch is not too large, but the very small Swiss watch is not as popular as it was, for it is not so dependable for time-keeping.

You can buy the leather bracelets to hold a watch from 75c up—they are very satisfactory, but not as dressy as the gold bracelet. And still a newer idea is the crocheted wrist-watch bracelet. This is made of fine thread with a rosette to hold the watch and the two ends snap together.

Another leather novelty seen lately was a leather bracelet with a purse in place of the watch. This was only 25 cents.

One of the big drug stores has a window display of what they called Dressing Aprons. These are made of cretonne or linen or other heavy material and have pockets applied to hold the various toilet articles you want when you travel. By fastening this apron around the waist, you have all your toilet articles at hand, without requiring a place to lay them down. An added advantage is that the apron rolls into a compact bundle and does away with the searching for misplaced articles. These range in price from 75c up, but they could easily be made at home.

There has been an apron made of oil cloth, similar to this in design, on the market for some time. It is called a bath apron and is for use in handling and bathing a small baby. Ostrich feather fans in the size our grandmothers carried are among the new conceits in one store and at the same counter there were broad white suede leather belts fastened with three small buckles that would be awfully pretty on a trim waist.

Rosabella Best.

SPINACH.

The best way to cook spinach for preserving its refreshing and laxative qualities is not to add water, for after thorough washing, the leaves retain enough moisture to steam it. Put it dry in a saucepan over the fire; in ten minutes, it will be ready to drain and chop. Afterwards return it to the pan and season with 2 tablespoons butter and a teaspoon of salt. Let simmer ten minutes before serving.

NEW RECIPE FOR STUFFED EGGS.

Cut hard-boiled eggs in halves, lengthwise. Remove yolks and put whites aside in pairs. Mash yolks and add half the amount of deviled ham and enough butter to make of consistency to shape. Make in balls size of original yolks and refill whites. Form remainder of mixture into a nest. Arrange eggs in the nest and pour over one cup white sauce. Sprinkle with bread crumbs and bake until crumbs are brown.

HOUSEHOLD EFFICIENCY.

Scientific management for the household is to be taught at the summer session of the University of California this year.

Housewives are to be trained in time-saving arrangement and labor-saving devices to render them more efficient in their work.

In addition, there will be instruction in the knowledge of fabrics, such as the detection of the loading of silk with tin to give it a luster, or the distinguishing of the presence of cotton in linen fabrics or any other frauds in textile manufacturing.

To make soup more nutritious, mash the corn, beans or similar vegetables that would otherwise have been wasted, put through a sieve and add the liquid. Pleasing and piquant flavors may thus be obtained.

DO YOU KNOW THAT

Sags in roof-gutters may act as mosquito breeding places?

America's most valuable crop is babies?

The typhoid rate measures accurately community intelligence?

Whooping-cough annually kills over 10,000 Americans?

Bad housing produces bad health?

Plague is a disease of rodents?

Malaria is spread by a special mosquito?

House screening is a good disease preventive?

Fingers, flies and food spread typhoid fever?

The United States Public Health Service believes that the common towel spreads trachoma, a disease of the eyes?

Children from sanitary homes advance more rapidly in school than those from dirty premises?—United States Public Health Service.

MOTHS IN FEATHERS.

Moths will not get into feather pillows, feather beds, etc., unless the ticks are ripped or torn, but should they infest feathers, the best remedy is to boil the feathers for half an hour or more, then thoroughly dry them. Soaking the pillows in gasoline is equally effective.

TO CLEAN CLOCKS.

To clean a clock, saturate a cloth or pad of cotton with kerosene oil and lay it inside on a small dish that will keep the woodwork from being saturated. As it evaporates the fumes will lubricate the works.

ODOR DESTROYERS.

One of the large stores of the city is showing a perfumed plaque to be hung in the house. It is supposed to destroy all bad odors and as the perfume becomes faint, more can be applied.

JELLIED PRUNES.

Two tablespoons granulated gelatine, ½ lb. prunes, 2½ cups cold water, 1 cup sugar, ¼ cup lemon juice. Pick over, wash and soak prunes for several hours and cook until soft. Remove prunes, stone and cut into quarters. To the water in which the prunes were soaked add enough hot water to make 2½ cups and to it add the gelatine that has previously been soaked in ½ cup cold water. Add sugar and lemon juice. Set away to cool and when it begins to stiffen add the prunes. Stir twice while it is hardening to prevent the prunes from settling to the bottom.

WHY, OF COURSE.

The teacher was hearing the class in history recite. "Now, Dorothy," she said, "who followed Edward VI?"

"Queen Mary," replied Dorothy.

"Very good. And who followed Mary?"

The class was silent, but small Elsie waved her hand wildly.

"Well, Elsie, you may tell us who followed Mary."

"Her little lamb."

IT SOUNDED THAT WAY.

The cat settled herself luxuriously in front of the kitchen range and began to pur. Little Dolly, who was strange to the ways of cats, regarded her with horror.

"Oh, gran'ma, gran'ma!" she cried. "Come here quick. The cat's begun to boil."

TO STIFFEN SILK.

To renovate a piece of silk that has lost its stiffness, sponge the surface with a weak solution of gum arabic. To prevent it becoming glossy, iron while damp on the wrong side.

One night when Marion was saying her prayers she said, "Bless daddy and mother and Margaret, and who else?" Her mother said, "That's all, I guess." The next night she said, "Bless daddy, mamma, Margaret, and everybody. There! I guess that will get Johnny Smith in." He's a little boy who attends the same kindergarten.

A minister came to the Episcopal church at Williamsport, Pa., to speak. "Do you wish to wear a surplice?" asked the rector. "Surplice!" cried the visitor. "Surplice! I am a Methodist. What do I know about surplices? All I know about is a deficit!"—New York Evening Post.

FIORAL DEPARTMENT.

[By Geo. N. Tyler.]

Growing Carnations.—Out of four entries of carnations at the Marin county flower festival held at San Rafael May 19-21, I won three first prizes and one second, and have received a query asking me to give my methods of growing.

My houses are twenty-four feet wide, have continuous ventilation at the ridge, on two sides, and one end low down. These ventilators are screened with fine galvanized fly wire to keep out moths, grasshoppers, etc. I take my cuttings in January and February; these are taken from plants that show strong growth and free flowering traits and are absolutely free from disease or fungi of any kind. The cuttings are never allowed to wilt, and are started in clear sand that is changed after every batch of cuttings. When first put in, they are thoroughly watered and sprayed for the first week. After that the shading is removed, and spraying continued once or twice a day for another week or two. They root in four to five weeks—the early struck cuttings are potted off in 2¼-inch pots, and the late ones planted out in the beds outside, which have been enriched with manure, bone meal, and dressed with hydrated lime.

I plant out in March direct from the propagating bench. These are watered, and encouraged to grow from the start, and are never allowed to receive a check, all summer. When they are four inches high they are headed by pulling the center out. This causes them to branch low down. I continue heading the resulting branches until August, never allowing them to make a flower shoot. In August I empty my benches in the houses of all the old plants and soil; let the benches dry; and in the meantime fumigate thoroughly with sulphur; also cover the benches and sides with whitewash in which some sulphur has been mixed. This thorough cleaning and fumigating clears the house of all fungus diseases, red spider, etc., and makes it sweet and clean for the new soil and plants.

During the summer I make a compost of four parts fibrous loam, one part rotted manure, and one part sand. To every wheelbarrow load of this compost, I add a four-inch pot full of bone meal; and to every three loads a five-inch pot full of hydrated lime. This is all thoroughly mixed together, being turned over three times. My benches are six inches deep and the bottoms are six-inch redwood boards, with half-inch spaces to allow drainage. When I fill the house with new soil, I put about one inch of straw manure on the bottom to keep the soil from going through the cracks, first wetting it down thoroughly after it is in the benches. I fill the benches full to the top with the compost and level them off with a board; this soil is dry, and is tramped to make it as firm as possible. After it is tramped thoroughly, I fill in any low places, and then give a thorough watering, when it is ready for planting the field grown stock.

Hog and Stock Fencing at Cut Prices

HOG FENCING, 45c ROD
—Heavy woven wire hog fencing with graduated mesh and barbed wire at top and bottom. Number 9 and 12 gauge wire used, fully galvanized. This price in 20 rod rolls.

BARBED WIRE, $3.10.
—The famous "Glidden" double point, "light" $3.10 per reel of 80 rods and "heavy" at $4.25 per 80 rod reel.

BLACK GRAPHITE ROOF PAINT, 50c gal.

SHINGLE STAINS, 50c gal.

ROOF AND BARN PAINTS, 85c gal.
—The latter in red, green and grey only. These prices in 5 gal. lots.

STANDARD HOUSE and FLOOR PAINTS, $1.75 gal.
—All colors and a big stock on hand.
$2.25 Inside Varnish $1.70 gal.
$1.75 " " $1.30 gal.
—Either gloss or dull finish.

20x24 SINK, $3.50.
—First quality, heavily porcelain enamelled cast iron sink, has flat rim. Should last a lifetime.

PORCELAIN ENAMELED BATH TUB, $16.
—Splendid quality, 5 ft. size.

LOW DOWN TOILETS, $12 complete to floor.

FLAT BACK LAVATORIES, $4.50.

WRITE FOR CATALOG
—we supply everything you need to complete a building and can save you money.

WHITING-MEAD CO
"Best for Less"
9th at Maple-Los Angeles

The **STEPHENSON Patent Cooler**
No Ice Required

Perfect Ventilation Absolutely Sanitary



Awarded first prize wherever exhibited. If not for sale at your dealer's, write for particulars and prices.

L. Anderson Co., Mfrs.
MARTINEZ, CAL.

DAISY FLY KILLER placed anywhere attracts and kills allflies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 sent by express prepaid for $1



HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

IDA AND THE SPIDER.

By William Ware Locke.

There once was a girl they called Ida
Who hated the sight of a spider;
But one summer day, when she was at play,
One came and sat right down beside her.

But she did not jump up and scream,
For she had been dreaming a dream,
A prince in disguise had seen her brown eyes
And offered to make her a queen.

The spider perhaps was enchanted.
A queen should be always undaunted.
She made up her mind to be very kind
And give to him just what he wanted.

Oh, what could she do for his sake,
The spell of enchantment to break!
Without any fear, she let him draw near
And gave him a piece of her cake.

The spider remained still a spider,
To be a proud queen was denied her;
At first she was sad, but then she was glad
To be just a girl they called Ida.

BREAKING IT GENTLY.

A small boy went to his mother and asked her to lend him a pencil.

"But," said the mother, "I left a pen and ink for you to do your lessons with on the nursery table. Why don't you use that instead of a pencil?"

Clarence hesitated for a moment.

"Don't you think, mother," he said at length, "that the "Times" is a very useful paper?"

"Of course I do," answered mother; "but what"—

"Well, you see," the little lad explained, "I want a pencil to write to the editor and ask him what'll take ink stains out of a carpet."—Exchange.

MORE GROCERIES for LESS MONEY

This Big Book is FREE

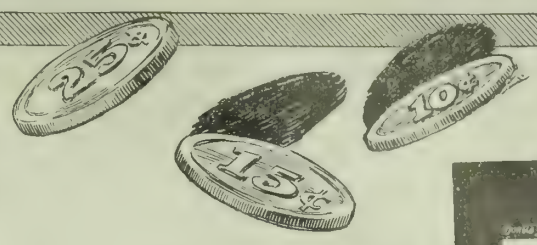


We issue a new money saving grocery catalog every 90 days. This one is just off the press. It is brimful of the biggest grocery bargains you ever heard of. For example—

25 Lbs. Pure Cane SUGAR $1.39

Write for this big book and learn how you can secure your sugar at from 3 to 4 cents less than the wholesale price. Every item in this catalog means a saving. Many women who buy their groceries from us dress themselves with what they save. You can do the same. Write today for this free book. A postal will do. We are the largest distributors of America's Best Goods on the Pacific Coast.

Wood-Crane Company
141-149 Main St., San Francisco, Cal.



You Can't Find their Equal at this Price!

Good, sturdy hosiery for every member of the family at 10, 15 and 25 cents. Our location and manufacturing economies enable us to sell Durham Hosiery for a price that makes home sock knitting expensive.

DURABLE DURHAM HOSIERY
FOR MEN, WOMEN AND CHILDREN

is knit strongest where the greatest wear comes. Heels, soles and toes are reinforced, and tops can't pull from the bottoms. Famous Durham dyes give permanent colors.

Durable Durham Hosiery must give every member of the family faultless service, because they're backed with an unlimited guarantee of perfect satisfaction.

Ask your storekeeper for Durable Durham Hosiery, and to show you the 25c Durham mercerized hose.

DURABLE DURHAM HOSIERY

DURHAM HOSIERY MILLS
DURHAM, N. C.



Put yourself in HER place Mr. Man

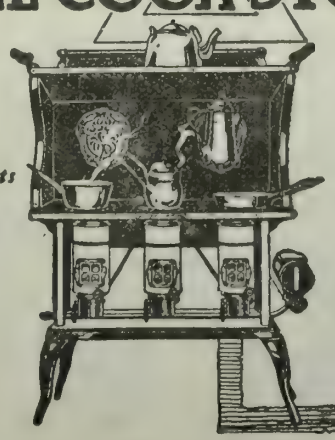


Why not get a good oil stove so that during the hot weather your wife or mother or sister or daughter, can prepare the meals in a cool, *comfortable kitchen?*

There's no overheating the kitchen with an up-to-date oil cook stove. It's just like cooking with city gas. The burners concentrate the heat at the different cooking points.

NEW PERFECTION OIL COOK-STOVE

For Best Results Use Pearl Oil



No wood or coal or ashes to lug. No waiting for fires to catch up. The long blue chimneys do away with all smoke and smell. In 1, 2, 3, and 4-burner sizes, with or without ovens. Also cabinet models with Fireless cooking oven.

STANDARD OIL COMPANY
(California)

Poultry for Profit---Producing & Marketing

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Forcing; Washing Eggs; Skim Milk Mash.—I notice your remarks in "California Poultry Practice" on the bad effects, on the offspring, of hens that are forced to the limit for laying by feeding certain rations; would forcing winter eggs by turning on electric lights at 3 or 4 a. m. have the same effect? Am selling my eggs in cartons. What is the best way to clean them? Am paying five cents a gallon for skim milk, using ten gallons a day. Is the price too high? Would you feed laying hens mash mixed with milk through the molt beginning now? Is it best to feed the same to four-month-old pullets just put in laying houses?—E. F. B., Hollywood.

[The forcing of eggs by electric lights would not be harmful to the offspring provided the hens are not fed too much mash and meat. It is the internal forcing that does the mischief; feed the hens grain in plenty of litter and it will never harm anything if they have 24 hours in the day. Wash eggs in warm water with sal soda dissolved in proportion to one tablespoonful to a gallon of water; for grass or any green stains rub vinegar and soda on spots, then wash; drain in wire trays in sun for a few minutes. Five cents a gallon is the usual price for skim milk and is cheaper than beef scrap. Milk enough to moisten the mash will bring eggs and keep hens in good condition, but molting is quite a time away yet. Don't feed pullets moist mash; feed dry mash, and give them milk to drink.]

Cheesy Eyes.—My young chickens have swollen eyes with cheesy matter; I sometimes pick out a foxtail and wonder if that is the cause, or could it be the lint from the oats? They are otherwise healthy.—R. F. H., Richgrove.

[The cheesy growth is canker. Usually this is caused by colds, but is sometimes caused by irritating substances, and no doubt this is the case with your chickens, if they run at large among wild oats and foxtail. Squeeze the substance out and wash the place with a strong solution of peroxide of hydrogen.]

Turks Mope and Die.—My turkeys two weeks old with a chicken hen are dying. They mope around and eat little, until they get weak and die. I feed cornbread mixed with water and baking powder; sometimes put in a few eggs and a little oatmeal, give them grit and charcoal. They are free from lice.—Mrs. E. M. B.

[Your turkeys lack green feed and animal food of some kind; if you have no milk put some beef scrap in your bread and feed hard-boiled eggs and onion tops chopped raw; a few heads of lettuce would set them all right and some meat of some kind.]

Hens in Apple Orchard.—My hens have the run of an apple orchard. Will the apples stop them from laying?

[Not if they are fed a full ration. What apples they eat of their own free will after being fed otherwise will not hurt them at all, but if you were to shut them up in a yard and feed the apples to them in place of something else, it would stop egg production. This enquirer is a lady who lives in Guerneville, who wrote me enclosing a stamp, inquiring about eggs of White Orpingtons. I was very sick at the time and the letter got mislaid. All I forgot about that letter was the most important item for me to have in order to answer, and that was her name. I beg her pardon, hoping she sees this and writes again.]

WEDDING PRESENT.

Wedding Present.—Because she knew how to use it, a wedding present which came to Mrs. Albert Messenger, a recent graduate of the University of California, is contributing largely to her family income. The present was a case of eggs, and the brood of chickens which Mrs. Messenger raised therefrom is winning all sorts of prizes in the Imperial Valley.

Mrs. Messenger was formerly Miss Margaret Slater, a popular member of a well-known Berkeley family. At the University of California she specialized in agriculture, and after her graduation she was married to Albert Messenger, a rancher of Brawley, Cal. One of her wedding presents was the case of eggs. This she took with her to her husband's ranch and promptly put into execution the poultry lore she had gleaned at the university.

According to letters received here by her friends, the results in a year have exceeded even her own expectation. She has marketed a large part of her product and is still reaping handsome profits by the sale of poultry produce.

Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MODEL POULTRY FARM—White Leghorn Specialists. We are now booking orders for Hatching Eggs. Baby Chicks and 10 weeks old pullets for delivery after January 1st, 1916. Prices on application. Twelve years of breeding have made our Leghorns the desired **Heavy Winter Layers.** W. C. Smith, Prop., Corning, Cal.

NO BABY CHICKS DURING JULY.—Fall hatching starts in August. Get in touch with us immediately, and assure chicks when you want them. Ask for special "Fall Chick" circular. White and Brown Leghorns, Barred Rocks, R. I. Reds, and Black Minorcas. Campbell Poultry Ranch, Campbell, Cal.

CLOSING OUT—FOR SALE CHEAP—3 Electric Incubators, 576 egg capacity each. 2 Electric Incubators, 144 egg capacity each. 16 Electric Brooders, 150 chick capacity each. Complete with circuit breakers, thermostats, connecting sockets, etc. Address T. R. Jacobs, P. O. Box 395, San Mateo, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for batching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396, Los Gatos, Cal.

PLACE YOUR ORDER NOW for May delivery of White Leghorn Chix from Jackman's purebred, heavy egg-producers. You get the best at lowest prices. $8 per hundred, $75 per thousand. Sunnyside Poultry Farm, R. 2, 1610 Vine St., Sacramento, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., Inc., Poultry Supplies, San Francisco.

PREVENT WHITE DIARRHOEA—White Plague of the Chicken Raiser. No drugs. Grow it yourself. Tried, sure remedy. Send $2.00 for plain instructions. J. Clemons, 379 Noe St., San Francisco.

PLACE YOUR ORDERS with the **SANTA CLARA HATCHERY** for the different breeds of baby chicks and baby ducks. Joseph A. Bihn, Prop., San Jose, Cal., Route 6, Box 336C.

ORPINGTONS—BUFF AND WHITE—Black Minorcas and Carneaux pigeons. Breeding stock at half price as I am selling out. Mrs. Susan Swaysgood, Route 2, Pomona, Cal.

BABY CHICKS AND EGGS—Hoganized Black Minorcas, White Leghorn, stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

WHITE LEGHORN BABIES and Hatching Eggs from Hoganized, heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

BABY CHICKS—Strong and healthy, from high-bred free-range White Leghorn stock. Prices on application. Western Hatchery, W. S. Waldorf, Petaluma, Cal.

HERE IT IS—White Rock baby chicks. $15 per 100. Hatching eggs, $1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ceres, Cal.

DAY-OLD CHICKS—These chicks are batched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

S. C. RHODE ISLAND REDS—Bred to lay. Hatching eggs and baby chicks. Cocks and cockerels. B. C. Huessenberry, R. 4, Lodi, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs, $2 to $5. Chicks, pullets, cockerels. R. W. Stawetski, Route 2, San Jose, Cal.

TRAPNESTED LEGHORNS—White and Buff Stock Eggs, chickens. Arthur R. Schroeder, Box 179B, Mountain View, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

EASTMAN'S BRED TO LAY Barred Plymouth Rocks. Fairmead Poultry Farm, Fairmead, Cal.

BEST FOR YOU—Hogan Tested Leghorns and Barred Rocks. C. W. Hinrich, Palmdale, Cal.

TURKEYS, DUCKS AND GEESE.

INDIAN RUNNER DUCKS—Imported Stock. Absolutely Pure-bred. Tested Layers. Breeding pens, 6 ducks and 1 drake, or separately. Fancy stock at reasonable prices; hatching eggs. W. R. Anderson, Lafayette, Cal.

HART'S BRONZE TURKEYS AND EGGS—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

PEKIN DUCK EGGS for hatching, $1.00 per dozen. L. D. Collins, R. F. D., 54G, Denair, Cal.

HARES AND RABBITS.

LEADING RABBITRY IN AMERICA—Flemish Giants and New Zealands. Cut your living expenses. Catalogue free. Empire Rabbitry, Empire, Cal.

BELGIAN HARES—Young stock for sale. Hurd Bros., St. Helena, Cal.

CALF MEAL STOCK FOOD
SMITH'S UNIVERSAL POULTRY FOODS AND SUPPLIES
F. F. SMITH & CO.
SACRAMENTO, CAL.
CATALOG SENT FREE
BROODERS INCUBATORS


Good Chicks should be Fed right by the Coulson Method
Full particulars in free book "Chickens from shell to Market"
Coulson Co., Petaluma Cal.

BEEKEEPERS' SUPPLIES
Everything for the Honey-Bee.
Catalogue sent free on request.
THE A. I. ROOT CO.,
245 Mission Street,
San Francisco, Calif.


TEN MILLION FEET OF
Clean, Seasoned Lumber
At Less than Wholesale Prices.
Moving ¼ of a Million Feet a Day
Place Your Orders Immediately.
THE 8 MAIN PALACES— THE COURTS AND THE TOWERS—of the P. P. I. E. are being dismantled, and we are disposing of the lumber. It is coming out, not only clean and in good shape, but thoroughly seasoned. All Oregon pine.
Don't delay sending us your lumber bill, for prices will be so low you cannot afford to overlook the savings, and the lumber is moving very rapidly.
SIZES: 2x3 to 2x16; 3x12 to 3x16; 4x8 to 4x18; 6x6 to 6x14; 8x8 to 8x20; 10x10 to 10x20; 12x12 to 12x18; 14x14 to 14x20. Lengths up to 32 ft.
SHIPLAP
Subject to previous sale, in carload lots, we offer the following f. o. b. Expo. Grounds, San Francisco.
2x6, 2x8 and 8x10 Oregon Pine Shiplap—suitable for warehouse floors, sub-floors, flumes, etc.—$9.50 per M. ft.
As the above is laid it matches neat and snug.
We have 1000 FLAG POLES—25 ft. to 100 ft. long. While they last we are giving
One 25-Foot Flag Pole Free
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